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Washington Apple Pi



Volume 4 September 1982 Number 9

Highlights

FILEHANDLER

"AN APPLE A DAY..."  CP/M AND OTHER

CORONA STARFIRE 5 HARD DISK

A REVIEW OF GRAFORTH - A GRAPHICS LANGUAGE

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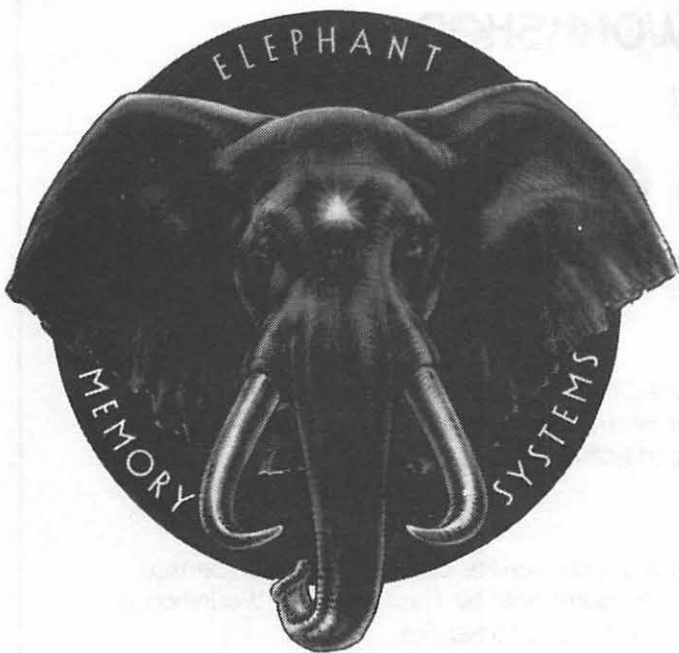
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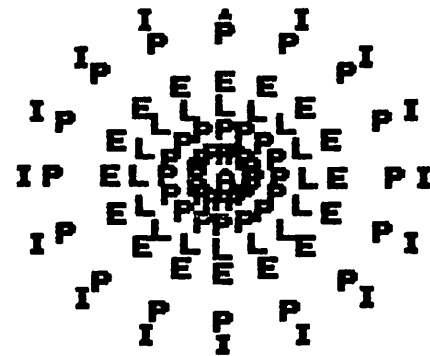
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EVENT QUEUE

Washington Apple Pi meets on the 4th Saturday 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. Sales, library transactions, newsletter pickup, etc. are from 8:30 - 10:00 AM. From 9:00 to 10:00 AM there will be 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 those volunteers can attend the meeting.

Following are the speakers and topics for the next few months:

August 28 - Bruce Field & Bill Wurzel
 FORTH
 Sept. 25 - Jim Burger & Ken Hautman
 Copyright and the Legal
 Problems of Marketing
 Software
 Oct. 23 - Bob Platt & Dick Hodder
 PILOT
 November - (Tentative) Marc Crosby
 Graphics

Membership dues for Washington Apple Pi are \$18.00 per year, beginning in the month joined. If you would like to join, please call the club phone and leave your name and address, or write to the P.O. Box above. A membership application will be mailed to you.

Subscriptions to the Washington Apple Pi Newsletter are not available. The newsletter is distributed as a benefit of membership.

EXECUTIVE BOARD MEETING

MINUTES JULY GENERAL MONTHLY MEETING

The Washington Apple Pi Board met at 7:30 PM on July 13, 1982 at the home of Dave Morganstein. Ten people were present. A CPS board from club store inventory will be loaned indefinitely to the ABBS. A motion was passed to authorize the club checking account to be transferred to D. C. National Bank. The Group Purchase Chairman and the Treasurer were authorized to spend up to \$500 on a single signature. Office space is being explored. Copies of the budget will be available from the President upon request. Library disks were back in one week from being copied satisfactorily by ALF. It was suggested that the librarian not accept non-conforming orders. A lengthy discussion was held on policy issues raised by WAP bylaws including the structure of the Board, SIGs, and membership. The meeting adjourned at 9:40 followed by a demonstration of the CORONA hard disk system.

Washington Apple Pi met on July 24, 1982 at 10:00 AM at USUHS. Approximately 25 people attended. A request was made for volunteer help, especially for the Hotline. There will be a Group Purchase of MicroSci drives for APPLE III's. Upcoming tutorials include personal finance, assembly language, Pascal, and LOGO if a teacher is found. Copies of the budget are available upon request. Thanks to volunteers who helped the 4H. A letter from WAP is being sent to area school boards offering our help. Thanks to Betsy Harriman as interim editor, and a request for columnists. There is a problem with some of the MicroSci drives but the company is helping to solve it. Washington Apple Pi now has 3 volunteer consumer advocates. The presentation on Control Program for Microcomputers (CP/M) was given by Adrian Garcia.

SUMMARY August WAP Board Meeting

The Executive Board of Washington Apple Pi, Ltd. met on August 10 at the home of Rich Wasserstrom. The items discussed include: a privately compiled list of businesses/services for Apples, the non-sale of our mailing list, our financial appearance, agreement on MicroSci drive replacement, software exchange with other clubs, letter

to school boards, search for office space, complimentary newsletters to advertisers, library disk copying by ALF, policy on demonstration of new products at meetings, SIGs, and fairs.

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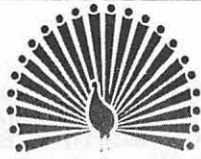
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JOB MART

Programmer/Analysts. If you have 2 yrs of experience plus Apple knowledge and are interested in temporary assignments, send your resume to Byte Size Services, Box 2181, Silver Spring, MD 20902.

L. Morganstein Consultants is looking for teachers of computer-related subjects to do Tutorials. If you can teach a topic and enjoy what you teach, get in touch with Linda, 972-4263, 9 am - 5 pm.

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PRESIDENT'S CORNER

by David Morganstein

Several WAP volunteers have been helping the National 4-H this summer. Bill Fry has coordinated the help of Margie Taylor, Linda Luhn and Terry Prudden in offering a one hour a week tutorial to 4-H visitors. Our thanks to all of you for the help you have graciously given.

• • • • •

One of our SIGs is aimed at the problems of the handicapped. Curt Robbins has mentioned that he receives few if any ABBS contacts on this subject. To help Curt reach those with interest in this use of the Apple, John Molineaux has volunteered his time to answer phone call requests for information. John's number, (301) 341-7391, will appear in the SIG list along with Curt, WAP428. Please call John, or leave an ABBS message for Curt if you or anyone you know has need of the SIG Disabled group.

• • • • •

During the next few issues, the magazine will contain an article written by Bruce & Jim Baird. Jim has Amyotrophic Lateral Sclerosis, known as "Lou Gehrig's disease." While Jim has lost virtually all use of his muscles, including those required for speech, and is limited to eye and thumb motion only, he is able to communicate with his family and friends through use of an Apple. Jim's experiences are an inspiration to me; I encourage you to "get to know him" through the article that he and his brother are contributing.

• • • • •

This month's issue contains an open letter to all local schools. The letter offers our help in providing Apple related assistance. Our ability to offer this help, as all the things we do, depends entirely on volunteers who may be able to respond to specific requests. There may be calls for help that we can not answer. However, I believe that there are members who will be able to offer an hour or two for many projects. I will be back in touch with you if any of the local schools contact the WAP for this assistance.

• • • • •

The list of tutorials that Steve Stern is organizing is growing. Personal Finance Programs will be the subject of a September 11 tutorial to be presented by Robin Oegerle. Assembly Language will be offered on October 16, taught by our able SYSOP, Tom Warrick. Dr. Wo, Tom Woteki, is willing to give another 4 session Pascal program but needs to know whether it should be at the introductory or more advanced level. Please call Tom with your preferences, 547-0984.

• • • • •

Another SIG has been added to our list. Nancy Strange is forming a LOGO interest group. This exciting new language offers a

delightful introduction to programming built heavily around Turtle-graphics. LOGO is the subject of this month's Byte magazine and next month's Micro magazine.

WAP HOTLINE

Have a problem? The following club members have agreed to help. PLEASE, respect all telephone restrictions, where listed, and no calls after 10:00 PM.

General
Robert Fretwell 971-2621
Dave Harvey 527-2704
Robert Martin 498-6074

Operating Systems
APPLE DOS Richard Untied 241-8678
CP/M Robert Fretwell 971-2621

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

A Peter Combes 871-1455
A,I Jeff Dillon 422-6458
A Mark Pankin 370-9219
A,I,P,M Bill Schultheis 538-4575
A,I,M Richard Untied 241-8678
P Robert Fretwell 971-2621

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VISITERM Steve Ildstrol 933-
7728

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LETTER TO WASHINGTON AREA SCHOOL DISTRICTS

Dear Sir or Madam,

This letter is being sent to offer the assistance of the Washington Apple Pi to Washington area school districts. Our organization of more than 1700 Apple owners was founded to share information about the Apple microcomputer. From a small group of about 30, we have grown as interest in the Apple has expanded. Our organization contains people of all ages and with diverse backgrounds. The WAP has many special interest sub-groups; one of the largest and most active is concerned with education.

The WAP is a non-profit corporation. The vast majority of our members live in the Washington D.C. area. These two facts lead us to offer our services to you as experienced Apple owners. While the WAP has been called upon informally to assist local schools and non-profit groups, I wish to extend a more formal offer of aid. While I can not guarantee that volunteers will come forward for any particular request, I want you to know of our general concern and of our willingness to help when possible. You may call our WAP phone number, (301) 621-2719, and leave a message. Should you have needs for knowledgeable users of the Apple microcomputer, please feel free to contact me.

Sincerely,

David Morganstein, President
Washington Apple Pi

WAP Helps Teach 4H Youth

by Bill Fry

The National 4H Center in Chevy Chase hosts groups of about 600 teenage 4H members every week during the summer. They are given tours of government institutions, attend seminars, and this year for the first time, are offered a short introductory course on computers.

Three Apple Pi members (Margie Taylor, Linda Luhn, and Terry Prudden) have been volunteering their time to help the National Public Law Training Center, a Washington, DC non-profit agency, deliver free training every Tuesday afternoon at the 4H Center. Two groups of 24 young people are given an hour of basic computer concepts, with demonstrations on an Apple II and TRS pocket computers. The course covers concepts (memory, bits and bytes) and the fundamental notion of program versus data. Exercises include a computer program to calculate a person's age, in minutes; an "Agricale" program to figure the cost of producing farm produce for market; and a demonstration of number crunching.

While one hour seems too little, the amount covered by a fast-moving presentation is surprising, and the young people clearly enjoy it. Designing an effective short presentation was difficult. The current effort may prove useful for other groups wanting a short introduction to computers.

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GROUP PURCHASE POWER

by Rich Wasserstrom

Club store phone and operating hours--Just a reminder that the club store is open from 7 pm to 9:30 pm Monday through Friday. The store number is (703) 448-8984 and is a local call from most Washington metropolitan area exchanges.

Group Purchase Items

A number of members have asked that I update the list of group purchase items first published some months ago. Glad to oblige.

Disk Drives

Micro-sci A2, A40, A70 (with or without controller), and drives for the Apple ///.

Printers

Dot Matrix
NEC 8023, Epson MX-80/80FT/100.
Letter Quality
NEC Spinwriter 7700 and 3500 series;
Anderson-Jacobson 831.
Interfaces
PKaso (for most popular printers);

Epson.

Monitors

Zenith ZUM-121 (green); Amdek 300G (green), Color, I and Color II.

Ram Cards

Microtek 16k
Legend Industries 64k, 128k and related Legend software (UC+, Disk Emulators, etc.)
Modems--Novation Apple Cat LI, and other Novation products.

Misc. Hardware

16 joysticks and paddles
Happ Electronics gameport extender
CPS Multifunction Card

Software

Verbatim diskettes
Nibbles Away II
The Accountant and DB Calc
LKJ Letter Perfect
Data Capture for Smarterm

I am not able to list prices here, but if you are interested in these items and/or details about ordering please call the group purchase phone.

MICRO-SCI FIX

We have sold upwards of 70 A2 disk drives and I have been favorably impressed with their reliability and the level of factory support. In this vein, Micro-sci has offered to update revision A analogue boards (the boards inside the drive, not the controller card) to revision B boards without charge to Apple Pi members, even if your drive has passed the 120 day warranty period.

Some users may have experienced difficulty initializing Pascal diskettes with some of the early drives. Other users have not had any such trouble. The problem appears to be a function of the electronic "noise" level of a particular Apple mother board. In any event, you may have your analogue board updated to revision B even if you have not experienced any problem.

How do I know if I have an old board? Easy. All A2 drives manufactured after March 29, 1982 have the revision B update. This means that if you took delivery of your drive at the March or April meeting you may have the old (revision A) board. To make certain, you will need to remove the cover of your drive--a very easy procedure. First, turn off all power to your Apple. Then, remove the four screws (two on each side of the drive) connecting the cover to the base of the drive. Gently lift the cover of the drive straight up. If the cover is a tight fit, you may need to spread the sides of the cover with your fingers as you work the cover up. You need not touch or remove anything on the inside of your drive. Merely look at the flat, thin fiberglass board resting horizontally on the top of the drive mechanism. This is the analogue board. It is filled with electronic components. The location of each such component is screened on the analogue board so the assembler knows where to solder each piece. Look for locations C-11 and R-19. If your board does not have any such markings or if these locations are marked but are empty (have no components soldered in them), then you have the new revision B board. If there are components in locations C-11 and R-19, then you have the older revision A and are eligible for a free update.

If you have the old analogue board and you want to update, please call the group purchase phone during operating hours and leave your name, work and home phone numbers. You have two options should you choose to update. Once I collect a sufficient number of names, I will--at your option--swap analogue cards or arrange to have the job done at a local computer store (not yet chosen). When you call the group purchase phone, please specify which option you prefer.

NEW PRODUCTS

I am evaluating a color monitor imported by Comrex. It is manufactured by Hitachi and appears essentially identical to the Amdek Color I, but at a lesser price. Comrex also imports an inexpensive letter quality printer manufactured by Brother. It prints a bit faster than other similar printers (17 cps vs. 12 cps) and sports a Diablo-type daisy wheel. I hope to evaluate one shortly and will let you know if it merits your dollars. Finally, Legend Industries has produced an extra-slot device for all you heavy hitters. It plugs into slot 7 and allows you to switch between two devices. We'll have one for evaluation, shortly.

MANUFACTURERS AND DISTRIBUTORS

Do you manufacture or distribute Apple related hardware or software? If you are interested in making your products available to the Washington Apple Pi group purchase program, please contact Rich Wasserstrom at the club store number. We are a licensed, reputable crew and will furnish trade references on request.

THE INPUT EXPRESSOR

by Eli Argon

The following machine language subroutine was written during the development of the PRIME PLOTTER, a graphics and statistics package, soon to be released by PRIMESOFT.

One of the limitations of the APPLESOFT BASIC is its inability to accept inputs as an expression. When used to input real variables, the Applesoft INPUT command will accept only numbers, nothing else

The subroutine that follows allows the user to input real values to a running program in two ways:

A. As standard Applesoft input of a real value; i.e. 1.3, 50, etc., or,

B. As an expression that includes any real number, real variable, or Applesoft mathematical function: i.e. 10.5, A+BXC, DXLOG(X), etc.

The sample program that follows is a simple exercise that demonstrates the use of the subroutine. In actual use it is a very powerful utility with a wide variety of applications.

HOW TO USE:

The sample basic program uses the ampersand ("&") vector in the format: & INPUT (VAR). The token "INPUT" can be replaced by any Applesoft token or keyboard character and the program will still work. There are two reasons for this kind of design: (1) The subroutine can be attached to a library of ampersand utilities, each invoked by a special character or token, (2) the subroutine can be invoked by a CALL command in the format: CALL (ADDRESS), (VAR). As above, the comma can be replaced by a variety of other symbols such as !, #, %, ;, ., as long as they cannot be interpreted as variables or tokens.

NOTE. IF, when prompted for input, you press the RETURN key, the variable will retain its previous value. Also, several variables can be input at once as long as a comma is separating them from one another; i.e. &,A,B,C,D

The program can be located anywhere in memory. Be sure, if you use the & vector, to POKE 1024, ADDRESS AND POKE 1015, ADDRESS/256.

To SAVE THE PROGRAM in a binary form use the command BSAVE (Name),A,(ADDRESS),L77

I hope you will find a good use for it. Please let me know of any improvements and/or modifications at (301) 229-4229.

```
1 REM =====
2 REM INPUT EXPRESSOR
3 REM (C)
4 REM ELI ARGON
5 REM JULY 1982
6 REM =====
7 REM
8 REM
9 REM
10 POKE 1013,76: POKE 1014,0: POKE
1015,3: GOSUB 100: REM SET THE &
VECTOR AND GOSUB 100 TO POKE THE RO
UTINE INTO MEMORY
20 PRINT "ENTER 99 TO END "
30 B = 8:A = 5
40 PRINT "ENTER C :";: & INPUT C
50 PRINT "C="C
60 IF C = 99 THEN END
70 GOTO 40
80 REM
100 FOR I = 768 TO 845: READ A: PO
KE I,A: NEXT : RETURN
120 DATA 32,177,0,32,227,223,132,
255,133,254,165,184,72,165,185,72,1
65,214,72,169,0,133,214,162,221,134
,51,32,44,213,172,0,2,240,23,160,1,
32,108,213,169,253,133,184,169,1,13
3,185
130 DATA 32,123,221,166,254,164,2
55,32,43,235,104,133,214,104,133,18
5,104,133,184,160,0,177,184,201,44,
240,181,76,149,217
```

```
ENTER 99 TO END
ENTER C :10*5+2
C=52
ENTER C :A+B*C
C=421
ENTER C :SQR(A*B)+LOG(C)
C=12.3671882
ENTER C :INT(C+.5)
C=12
ENTER C :
C=12
ENTER C :99
C=99
```

*300.34F

```
0300- 20 B1 00 20 E3 DF B4 FF
0308- B5 FE A5 B8 48 A5 B9 48
0310- A5 D6 48 A9 00 85 D6 A2
0318- DD B6 33 20 2C D5 AC 00
0320- 02 F0 17 A0 01 20 6C D5
0328- A9 FD B5 B8 A9 01 B5 B9
0330- 20 7B DD A6 FE A4 FF 20
0338- 2B EB 68 B5 D6 68 B5 B9
0340- 68 B5 B8 A0 00 B1 B8 C9
0348- 2C F0 B5 4C 95 D9 00 00
```

Q & A

by Bruce F. Field

Q. I am writing a program in Applesoft that utilizes page 2 for lo-res graphics. Unfortunately the program itself resides partly in this memory area. Is there a way to use page 2 lo-res graphics without destroying my program? The lomem command does not seem to work.

A. You are trying to use what is usually called text page 2 that resides from \$800 to \$BFF (2048 to 3071) and is almost never used because it is in the way of Applesoft programs. The solution is to change the pointer that controls where the Applesoft program starts. This pointer is in memory locations \$67 and \$68 and normally is \$801 (i.e. \$1 is in \$67 and \$8 is in \$68). All you have to do is change this pointer to \$C01 before loading in your program. You can do this with the following commands:

```
POKE 103,1
POKE 104,12
then
LOAD myprogram
```

The problem with this method is that the pokes must be done before loading the program. It would be much nicer if the program could modify itself without requiring any action by the user. There are undoubtedly numerous ways to do this, one way that springs to mind is to put some dummy REM lines at the beginning of the program that total exactly 1024 bytes. Then in the next line put the pokes. When you run the program you will "lose" the REMs but the rest of your program will be intact. Be sure that you don't save the program after running it or it won't work next time. Each REM statement takes 6 bytes of memory plus one byte for each character in the remark. So if you type 4 statements each containing 240 characters and a fifth containing 34 characters that should do it.

The LOMEM command does not control where the program goes, it only controls where simple variables are stored. And, it must be set higher than the end of the program or an OUT OF MEMORY error will occur.

Q. I am attempting to build the sound generator described in the November 1980 (Vol. 2 #11) issue of WAP. Could you explain in more detail the method of interfacing a speaker to the audio-out section?

A. The sound generator described in the article is based on the General Instruments AY3-8910 chip. This chip puts out a low-level signal designed to be fed into a standard audio amplifier. If you have an amplifier with several input phono jacks on the back you should use the one marked "auxillary" or "tuner" or possibly "tape in". The schematic in the article has one lead of a 100 uF capacitor marked as "Audio", this should be connected to

the center conductor of a phono plug with the outer conductor or shield connected to the ground on the generator board. In the article the author describes using a tape recorder as an amplifier by plugging the audio into the mike or aux input and connecting a speaker to the monitor output. This will not work with all recorders, but if it does you must put the recorder in the record mode to activate the amplifier. If you are willing to settle for reduced sound quality Radio Shack sells a small battery operated amplifier for \$12 that will work (part no. 277-1008).

Q. In Applesoft the largest value for a line number is 63999. Why?

A. Beats me. Applesoft uses 2 bytes to store the line number in memory, thus line numbers up to 65535 are possible. In fact the 63999 limitation is only for numbers entered from the keyboard. It is possible to use the Monitor to change a line number to greater than 63999 and after this is done the program works just as well as before. Maybe someone in our audience has an answer and will let us know.

Q. If a program has been deleted from your Catalog can it be recovered. If so how?

A. Yes it is possible to recover a deleted program IF you have not saved anything to the diskette after you deleted the program. The reason is that the program is not actually erased, but the Catalog entry is marked as deleted. If you save another program DOS looks in the Catalog for some free space, finds the program marked as deleted and saves the new program over the old one. In this case the original program is lost forever (except of course for the copy you have on your backup disk). Any program that will modify individual sectors on a diskette can be used to undelete a file. There are a number of these utility programs on the market, they commonly go by names such as DISK ZAP or some derivative.

A DISK ZAP program allow you to read a sector from the diskette to memory, modify the values in memory, and write the revised sector back to the diskette. The format of the diskette directory is given starting on page 129 of the DOS 3.3 manual. When a file is deleted the track number of the file's track/sector list is changed to \$FF and the original track number is stored in the last byte of the filename. To undelete a file put the correct track number back and put a space (\$A0) in the last byte of the file name. Then the track bit map must be modified to indicate that the sectors used by the file are not free. The sectors used by the file are found in the track/sector list

for the file.

For those less adventurous souls who don't wish to wipe out an entire diskette with one fell swoop I have written a short Applesoft program that takes care of all the details. Even so it would be wise to practice on a "disposable" diskette to make sure the program works correctly before trying it on anything important. To use the program put the diskette that contains the deleted file in the drive (the last accessed one if you have multiple drives) and run the program. It will search the Catalog, print the names of any files that have been deleted and ask you if you want them undeleted. If no deleted files are found an appropriate message will be printed.

```

100 REM -----
110 REM CATALOG FILE UNDELETER
120 REM B.F. FIELD JULY 1982
130 REM -----

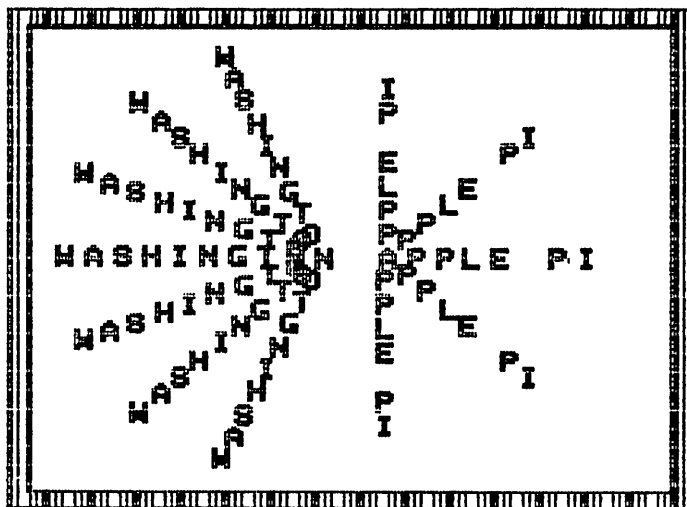
140 HOME : PRINT TAB( 9);"CATAL
OG FILE UNDELETER": PRINT
150 DIM T(255),S(255)
160 BUF = 46267:FLAG = 0
170 TRK = 17:SEC = 15
180 RW = 1: GOSUB 580: REM SCAN
DIRECTORY
190 FOR I = 11 + BUF TO 221 + BUF
STEP 35
200 IF PEEK (I) = 255 THEN GOSUB
270: REM FOUND DELETED FILE
210 IF PEEK (I) + PEEK (I + 1)
= 0 THEN 250
220 NEXT I
230 TRK = PEEK (BUF + 1):SEC = PEEK
(BUF + 2)
240 IF TRK + SEC < > 0 THEN 180
: REM CONTINUE UNTIL END OF
DIRECTORY
250 IF FLAG = 0 THEN PRINT "NO
DELETED FILES"
260 END
270 F$ = "":FLAG = FLAG + 1
280 REM BUILD FILE NAME
290 FOR J = I + 3 TO I + 31
300 F$ = F$ + CHR$ ( PEEK (J))
310 NEXT J
320 PRINT F$
330 PRINT "IS MARKED AS DELETED,
DO YOU"
340 PRINT "WISH TO UNDELETE IT:
(Y/N)? "; GET A$: PRINT A$
350 IF A$ < > "Y" THEN RETURN
360 REM RESTORE TRACK NUMBER
370 POKE I, PEEK (I + 32)
380 POKE I + 32,160
390 RW = 2: GOSUB 580
400 REM NOW FIX TRACK BIT MAP
410 TRK = PEEK (I):SEC = PEEK (
I + 1):RW = 1:K = 1:T(K) = T
RK:S(K) = SEC
420 GOSUB 580: REM GET TRK/SEC
LIST
430 REM FIND SECTORS THIS FILE
OCCUPIES
440 FOR J = 12 + BUF TO 254 + BUF
STEP 2
450 IF PEEK (J) + PEEK (J + 1)
= 0 THEN 480
460 K = K + 1:T(K) = PEEK (J):S(
K) = PEEK (J + 1)
470 NEXT J
480 TRK = PEEK (BUF + 1):SEC = PEEK
(BUF + 2): IF TRK + SEC < >
0 THEN 420

```

```

490 TRK = 17:SEC = 0:RW = 1: GOSUB
580: REM GET TRACK BIT MAP
500 REM FIX TRACK BIT MAP
510 FOR J = 1 TO K:BYTE = T(J) *
4 + 57 + BUF
520 IF S(J) > 8 THEN S(J) = S(J)
- 8:BYTE = BYTE - 1
530 POKE BYTE, PEEK (BYTE) - 2 ^
S(J)
540 NEXT J
550 RW = 2: GOSUB 580: REM RE-WRI
TE TRACK BIT MAP
560 PRINT F$" :UNDELETED": PRINT
570 RETURN
580 POKE 45975,TRK: POKE 45976,SEC
590 POKE 45121,RW: CALL 45111: POKE
45121,2
600 RETURN

```



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CORONA STARFIRE 5 HARD DISK

by Gordon Stubbs & David Morganstein

With the increasing number of modestly priced hard disks that are beginning to appear, more Apple owners are wondering about the practicality of "high speed," "high volume" storage. A few months of experience with the Corona entry led us to these comments.

At a list price of \$2495, the Starfire 5 offers a user up to 36 "volumes" (i.e. floppies) worth of storage. While we have only seen and used a DOS 3.3 version of system software, we have been told that the disk can be configured for CP/M or Pascal and possibly for mixtures of the three (however we have not actually seen such software). The unit is attractive and is about the size of two to three floppy drives. The drive has its own power supply and fan; it connects to the Apple via a Slot 7 controller card. A switch at the back turns the drive on and, when on, a noticeable (perhaps a little distracting) fan noise can be heard. There is no power on indicator and the switch is not labelled as to ON/OFF.

The drive comes with a manual of about 75 pages but contains no index. Most of the manual is dedicated to descriptions of several utilities provided with the disk. A floppy containing a copy of the operating system and of the utilities accompanies the manual. Unfortunately, the manual tells you nothing about the operating system or how it differs from the standard DOS 3.3. This means that often-used, favorite utilities which depend on certain DOS locations may not work and you will have little information upon which to modify the utilities for the new DOS. (For example, Call APPLE's Program Line Editor would not work under the Corona DOS).

Upon boot-up, the drive runs a program of your choice. The standard is the Volume Management System (VMS) machine language utility. This program allows you to name the 36 volumes for easy recognition (by you), and to catalog any of the volumes. Once CATALOGed, a program can be selected for running by typing a single letter. A second, also very useful utility is the File Management System (FMS) program. This modified FID also allows you to initialize a volume on the Starfire in addition to the usual FID functions. BACKUP is a third utility which allows copying floppy to hard disk and vice versa.

DOS addresses the Starfire storage as Slot 7, Drive 1, Volume 1 through a maximum of 36. Volumes are either the size of a single floppy or, optionally, a double floppy (which reduces the number of volumes). Double volumes are numbered from 36 down, single volumes from 1 up. This method appears to be fairly general and should cause little or no incompatibilities with existing (unprotected) software. Clearly, the old protected software problem

exists here as well. Since you need a specially modified DOS, protected programs with their own DOS can not be used with the hard disk.

In addition to space and double-sized volumes, most people are interested in hard disk for access time improvements. We are all a bit disappointed at the Apple drives' disk access time (the proliferation of fast DOS's now appearing attests to the need to do something about this). Just how much faster is the Corona drive? Well, like everything else, it depends on your problem. If you are performing sequential reads or writes, it is not much faster. Writing 500 records with the floppy took 22 seconds, with the hard disk a reduction to 16 seconds. Not much to sneeze at. If your problem involves random access of records, however with file open and closes, a bigger savings can be expected. Where 50 opens, writes and closes took 145 seconds on the floppy, only 20 seconds were required on the Starfire 5. This latter problem is the one we face with the mailing list where 1700 opens, reads and closes may be required.

How about performance and service? Unfortunately, within a week of using the disk, a hardware problem occurred in the form of a dead IC (integrated circuit chip). Not being willing to open the disk and unsolder the critter ourselves, we returned the disk to Corona. We were pleased that they paid the UPS shipping both ways!!! During the first month of use, another problem occurred. A volume was apparently wiped out causing the VMS program to pass over the volume names after the bad one. The problem appears to be in the DOS which occasionally leaves the head in an inappropriate position which, if power is removed, will cause an erase in the volume directory. The Corona folks said they are working on a modification to the DOS but we have not received it yet. The disk was not permanently damaged in any way, but one volume had to be reloaded. The people at Corona were very helpful with both problems.

As a summary, the offering of new, relatively low-cost hard disks is an exciting development for the Apple owner. As to whether you should jump in now and buy one, that depends on your need. The drives are certainly much faster for some, but not all, applications. Murphy's law dictates that the need for storage will expand with hard disk capacity...just when you think 5 megabytes is the end-all, you'll find a way to fill it. However, as the prices are dropping, many will find these units very practical solutions to their problems.

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W I T H M I C R O M O V E R
C O P Y D I S K S B Y P H O N E

EDSIGNEWS

by Peter Combes and Diane Lorenz

EDSIG Calendar

Tuesday, September 14th at 7.30 p.m.

Computer Literacy

Dianne Martin, who wrote "Bits and Bytes", returns to EDSIG with more insights into the use of computers in education.

Tuesday, October 12th at 7.30 p.m.

Logo Round Table.

The Logo SIG reports back on how things have gone in local applications of this new high level language.

All EDSIG meetings are held in Lecture Room A, Building A, of the Uniformed Services University of the Health Sciences, on the campus of the National Naval Medical Center, 4301 Jones Bridge Road, Bethesda, MD.

Meeting Reports

Tuesday, August 10th

Simulations and Interactivity.

Dan Robinson from the Program Store showed us a tantalising demonstration disc for new programs to be marketed by the Learning Company (previously ALT). These programs ranged from "Juggle's Rainbow", a pre-school program for teaching "Up", "Down", "Left", and "Right", to "Logic Machines" for teaching computer logic.

With some of the earlier programs, there was some unease about whether we were using \$2000 of equipment to simulate some wooden blocks and a box, but the later programs included the ability to simulate an electrical circuit, and see the effects of modifying it - a time-consuming process in the laboratory.

An even more interesting simulation set up computer circuits and made them "work". Some teachers wondered whether the target teenagers would be sufficiently motivated to work through all the complicated techniques needed to be able to set up a "circuit" but the one teenager present at the meeting was only too eager to have a try.

Paul Garneau, of the International Institute of Applied Technology, brought us his expertise on Pilot and Pilot Plus.

Pilot was originally developed by Dr. Starkweather at the University of California in 1968 with only 10 opcodes. It is particularly good at storing information

and matching it with other data. Various versions of Pilot are now available, such as Commodore Pilot, Tandy Pilot, Apple Pilot, and Super Pilot.

Pilot seems to be easy to learn. Paul quoted a workshop that he ran in Milwaukee at which teachers with no previous programming experience were writing effective programs by the second day.

Boeing developed Advanced Terminal Pilot for the PLATO V system, and Pilot Plus is one result of that development.

Pilot Plus has 40 opcodes including files, graphics and ways of interfacing such devices as videodiscs, graphics tablets, or even a TV camera.

Transportability is one of the selling points of Pilot Plus. If you want to be able to write a program on a Xerox machine and run it immediately on a TRS-80 Model II, or even a Sony SMC-7, then Pilot Plus can do this for you.

Like BASIC, Pilot is interpretative, and therefore rather slow. However, a Pilot compiler is promised. Pilot uses a lot of memory - Paul quoted 44K - and a common technique is to chain parts of a program from disc.

The powerful string handling abilities of Pilot enable it easily to keep track of student's responses to questions, and transfer these to disc so that at the beginning of any session, the computer "knows" where the student left off the time before. It can match strings or fragments, and allow for minor spelling mistakes. All screen outputs are in Hi-Res, and Paul demonstrated a very high level of readability of the colored text, albeit using a very good monitor. Shapes can be generated very easily, and simple commands produce scale, offset, and rotation.

IIAT use Pilot Plus for their advanced videodisc and touch panel developments, and Paul gave a fascinating demonstration of the state of the art in these areas.

The infrared touch panel unit was mounted on a Sony 13" monitor, and gave a resolution of 1/16". It was connected to the Apple by an RS-232 interface, using an interface card developed by IIAT. Paul demonstrated the ability of the touch panel to respond quickly and accurately, and showed a circuit diagram demonstration that neatly "capped" the one in the first part of the meeting. As the user touched various "switches" on the screen the simulated circuit reacted immediately. The program was written in Pilot, and the language's speed limitations were not at all noticeable.

Videodiscs have been seen before at EDSIG meetings, but the combination with the touch panel monitor permitted an impressive

demonstration of the ability to "flip through" the pages of a video encyclopaedia, following particular themes or sub-themes at will, or checking one's knowledge by built-in tests on the same material.

Paul's obvious dominance of his subject and the fascinating possibilities of his equipment made this an exciting meeting.

XXXXXXXXXX FALL COMPUTER CLASSES :XXXXXXXXXX

..... for CHILDREN

BASIC: Beginning and Advanced -- If you are interested in joining a Saturday morning programming class, call Art Tenney at 229-4817 between 4 and 7 P.M. For children from 7th to 12th grade. Classes will be held in Northwest D.C.

CAPITAL CHILDREN'S MUSEUM -- Call 638-5437 for the Future Center schedule of classes.

ELF (ELECTRONIC LEARNING FACILITATORS) -- BASIC programming--beginning, intermediate, and advanced. LOGO for both young children (6-8) and older children (9-14)--several ability levels. Classes in LOGO and Word Processing for children with learning disabilities. All classes will be held at the new Bethesda Country Day School, 5615 Beech Ave., in Bethesda, afternoons, evenings, and Saturday mornings. Call 530-3299.

The Computer Workshop - Fall classes, both introductory and advanced, in BASIC and LOGO to be held afternoons, evenings, and Saturday mornings at their location in 1776 Plaza. Classes meet for 2 hours once weekly through Thanksgiving. Call 468-2399.

Computer Crafters -- BASIC Programming in the afternoons and evenings beginning in late September 11216 Georgia Avenue. Call 933-5820.

..... for ADULTS

College of Education: University of Maryland -- Three credit courses: Seminar in Computer-Assisted Instruction, Selected Topics in Computers, Seminar in Microcomputers in Science Education. Beginning in September. Call 454-2037.

ELF (ELECTRONIC LEARNING FACILITATORS) is offering classes for adults in beginning and advanced BASIC Programming and Word Processing. New class "Getting Comfortable with Computers" - a gentle introduction for the inexperienced. Workshops for teachers in all aspects of Computers in the Classroom including creating a LOGO environment for children. Classes will be held during the daytime and evening at Bethesda Country Day School, 5615 Beech Ave., Bethesda. Call 530-3299.

The Computer Workshop - A full range of classes for adults in programming- BASIC, Assembly (8080 and 6502), plus an introduction to computers. Workshops in Visicalc, Word Processing, dBase II, Computers

and the Job Market, and Applesoft File Management. Instructors will be at the Workshop at specified hours to answer questions about their courses during the Grand Re-Opening, September 11-18, 1776 Plaza. Call 468-2399.

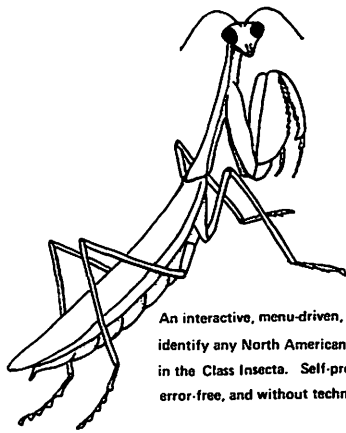
University College: University of Maryland -- Introduction to Programming in BASIC, COBOL, FORTRAN, and Pascal. These are non-credit short courses to be held at the university campus in College Park. 14 weeks - 2 hours per week. Call 454-5825.

XXXXXXXXXX UPCOMING CONFERENCES XXXXXXXXXXXXX

New Jersey Microcomputer Show and Fleamarket -- Software and accessories for all the popular microcomputer systems. September 11-12, Holiday Inn, Newark International Airport, Newark. Call Ken Gordon (201) 297-2526.

Computers in Construction -- for construction contractors and management firms acquiring computer systems. October 7-8. Washington, D.C. Call Lynne Levin, CIP, Inc., (301) 589-7933.

Association for Computing Machinery -- Annual convention to be held at the Dallas Hilton, Dallas, Texas. October 25, 26, 27. Call James Adams, ACM, (212) 265-6300. &



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FILEHANDLER

by James T. DeMay, Jr

Do you use one of the many FILE CABINET type programs? If you do, then there is a good chance that your needs have changed for at least one of the files you have created. There may be too few fields in each record, or maybe one of the fields is no longer required. Have you come to the "well, it looks like the only way to add another field is to retype (ugh!) all of the data" stage? If this sounds familiar, then read on. This may be just the thing you have been looking for.

Some of you may not know about the FILE CABINET. If you do, then you may want to skip to the next section. APPLE introduced the CONTRIBUTED SOFTWARE BANK, which consists of five volumes (actually disks), as a way to display the many features of the APPLE. The programs are well written and extremely valuable as learning aids. If you weren't informed of these programs when you purchased your APPLE, your dealer did you a great disservice. The programs are free. Just get a disk or two and visit the local APPLE dealer. He should be happy to make copies for you. These programs are documented in two paper-bound booklets, volumes 1 & 2, and volumes 3-5. They are also available from your dealer at a nominal charge. I paid \$2.00 each for mine. Included in the front of each booklet are the instructions for copying the desired programs. There is a wealth of information here. If you haven't investigated it yet, put this on your list of things to do.

Now, back to FILE CABINET. It is an information storage and retrieval system that can be customized to handle many types of data. There are several versions, each a little different. Some are better than others. The WAP LIBRARY has two that I know of; ELEC FILE CABINET from volume 22, and SUPER FILE CABINET from volume 37. Both of these disks are DOS 3.2 and must be MUFFIN-ed, to be used with the latest version of DOS. FILE CABINET will work on either version of DOS.

When run, it reads the BASENAMEFILE from the disk to determine the number and names of databases stored on the current disk. If there are none, then it asks for the name of the new database. WAP NEWSLETTERS is a good choice for a database name. I store information concerning articles which may be of interest in the future in a file like this. Let's initialize a file for just this purpose. First, get your version of FILE CABINET up and running by typing RUN XXXX FILE CABINET; XXXX is the name of your version. Choose the create a new database option and then enter the name of the database, in this case WAP NEWSLETTERS. FILE CABINET will write this name to the disk in the text file called BASENAMEFILE. You will then be asked to enter the name of the fields for each record. The number of fields may vary depending on the data in-

involved. My file has TITLE, SUBJECT, DESCRIPTION, and ISSUE. When you have finished entering the field titles, just pressing return will allow the number of fields and the field names to be written to the disk as a sequential text file called WAP NEWSLETTERS HEADERFILE. The format for this file is a number followed by the name, or header, for each field, separated by a carriage return. (See your DOS manual for more about sequential text files.) Now we're getting to the good part. A menu is presented with up to 10 options. One can ENTER, DELETE, SEARCH, SORT, COMPUTE TOTALS, CREATE A REPORT, or just LIST data at the touch of a few keys. Obviously when running the program for the first time it will be necessary to enter data. Select this option, and start entering information from the latest WAP NEWSLETTER. When finished, the data may be saved, in some cases, by just entering a <RETURN> for the first field in the current record. You may have to go to the menu page and select the SAVE DATA option. The data will be written to the disk as a sequential text file called WAP NEWSLETTERS INDEXFILE. The first entry in the file is the number of records in this file. Next comes the data for record #1, field #1. The second record and all of its fields will be written next. This is continued until all fields for all records are written. The same procedure is used to read data from this file.

Don't neglect the REPORT GENERATOR. It can be very useful. Some versions even permit totaling of data in certain fields.

Now back to the original intent of this article. Suppose you need to add another field to the WAP NEWSLETTERS file. The program, FILEHANDLER, will enable you to change the number of fields in each record, adding or deleting fields as required. You also have the option of selecting which records will be written to the new file. The headings for each field can also be changed. FILEHANDLER will prompt for all the information it needs to restructure your files. All this and not a chance of overwriting your original file. (If you believe this, I've got a bridge I would like to sell you.) This is possible because when FILEHANDLER writes the modified file to the disk, it appends ...MOD to the end of the filenames. This means that all files written with FILEHANDLER will require renaming before FILE CABINET can read them. A provision has been made to do this renaming from the menu. Speaking of the menu, it is reproduced below:

```
R'S  H'S
0    0    SRC FILE:
0    0    NEW FILE: ...MOD
```

```
<C> OMBINE FILES
<D> ELETE FILES
<F> REE MEMORY
<G> ET FILE FROM DISK
<K> LEAR ALL VARIABLES
<M> ODIFY FILE IN MEMORY
<Q> UIT
<R> ENAME FILE (ON DISK)
<S> EE CATALOG
<V> IEW FILE IN MEMORY
<W> RITE MODIFIED FILE TO DISK
```

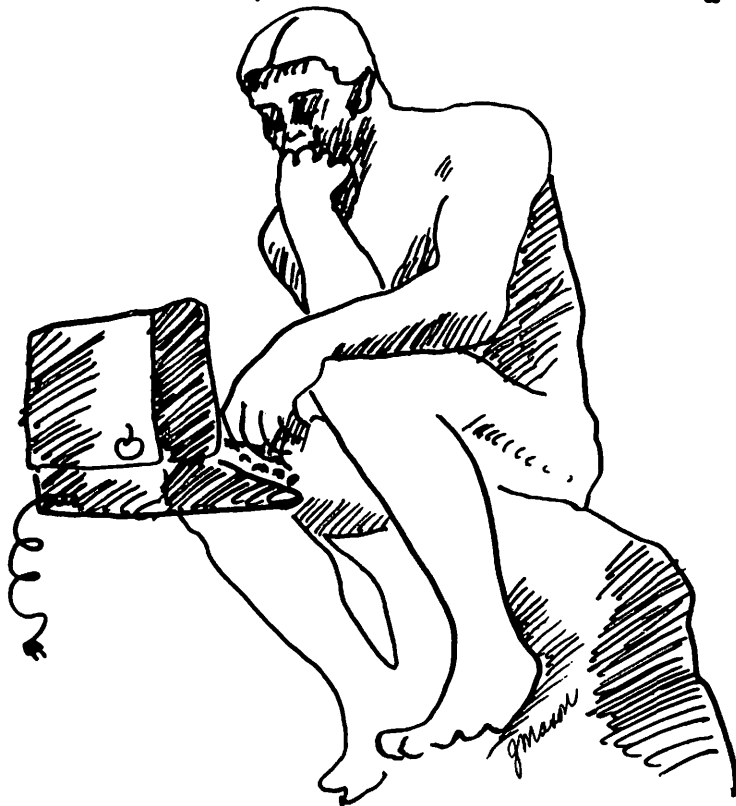
Recently I donated FILEHANDLER to the WAP LIBRARY. It should be available soon. I would appreciate your comments and suggestions concerning FILEHANDLER. And by all means, please inform me of any bugs that you may discover. I will endeavor to correct them and publish the corrections. @

Use the following procedure for modifying a file, in this case WAP NEWSLETTERS. First decide on the final structure of the file. Let's add another field, PAGE #, to the existing file. Run FILEHANDLER and press 3. You will be asked which type of file you wish to read. Press B, meaning Both HEADERFILE and INDEXFILE. Then, after inserting the disk with WAP NEWSLETTERS files, input the name of the file when prompted. INDEXFILE and HEADERFILE will be appended to WAP NEWSLETTERS and both files will be read, after which you will be returned to the MENU. Notice the SRC FILE line now lists the number of records, the number of headers, and the source file name.

Once the source file is in memory, choose the M option. You will be given a choice of changing, deleting, or adding headings. We're adding a new heading, remember. After answering the appropriate questions, each record will be displayed. We can mark each record that we wish to be added to the new file. Only those records (A)dded will be written to the new file. By pressing the LEFT or RIGHT ARROW keys we can move through the entire file, (A)dding or (D)eleting records as we go. A (S)kip option is included to skip to any record in the file. When you are satisfied that all records are marked as desired, press (M) to return to the menu. The NEW FILE line now lists the number of records and the number of headings for each record. Up to this point, we have not written any data to the disk. Just to be on the safe side, insert an INITIALIZED disk into the current drive. Be sure there is enough room for the new file and press W to Write the modified file to disk. A new WAP NEWSLETTERS HEADERFILE and INDEXFILE will be written. These file names will have ...MOD appended to them. Press S to See the disk catalog. Use the R command to RENAME the files to remove ...MOD so FILE CABINET can find them. From the menu, choose K to Klear memory of ALL variables, and then read the new file to verify that it has been restructured as desired. FID can now be used to copy the new file to the original disk, thus writing over the source data. You may choose to retain the source copy for backup purposes.

The C option will allow two or more files to be combined. It may be necessary to use the Modify option first to restructure the files before Combining them. This is because all files to be combined must have the same number of headings. The only limitation is the amount of internal memory available for file storage. The program takes up about 8K, this allows 30K for working storage in a 48K machine.

Using these procedures, it is almost impossible to destroy existing files by accident. All modifications to the files are done in memory. Only the Write option will modify the data on the disk, the source file is protected by appending ...MOD to the file name before saving is attempted. So experiment. FILEHANDLER may save you hours of re-entering data. Using the View option allows rapid viewing of the source file. So even if you don't need to restructure the file, FILEHANDLER is a convenient way of verifying the integrity of any FILE CABINET type text file.



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CP/M & OTHER THINGS CALLED OPERATING SYSTEMS

by Paula and Bernie Benson

This article is about computer operating systems; how they came to be, why they are here, and what they do. The information on CP/M came partially from the presentation given by Adrian Garcia at the July 24 WAP meeting. As with most of our articles, we will start with general theory and move to specific examples.

An operating system is nothing more than a set of programs and subprograms that do very common tasks necessary for the general operation of the computer. Often used tasks such as reading the keyboard or displaying text on the screen, are performed by routines which normally reside in memory at all times. The process of BOOTING is simply loading these and other routines into memory. The computer can do very little without them. The APPLE stores some of these routines in ROM (read only memory) and therefore is smarter than most computers before booting.

Operating systems began to be developed as programmers realized that much effort was being duplicated by writing code into every program for these tasks. Programming and debugging time could be reduced significantly if all programs were allowed to share the same code for these common routines. As computing environments got more complicated, the operating system took on more and more responsibilities. The typical operating system for a mainframe computer does total system management. This includes job scheduling, resource allocation, memory management, task monitoring, disk file management, all I/O handling, and peripheral device control. Fortunately for us, the job involves only a few of these areas. Disk file management and device I/O are the major functions of these systems and these are not trivial.

Most operating systems are usually written in the assembly language of the microprocessor on which they were designed to run. This is because their routines must be very fast and use as little memory as possible. Most systems come with several programs or utilities already written which aid in writing programs and working with disk files. These utilities often include disk format and copiers, text editors, assemblers, and high level language compilers/interpreters. APPLE DOS, APPLE Pascal, and CP/M are the three most popular operating systems for the APPLE. The first two run on the 6502 processor in your APPLE. CP/M requires the Intel 8080 or Zilog Z80. These processors are available on separate peripheral boards.

In selecting an operating system, like any piece of hardware or software, some general considerations are in order. Total cost for the system and any required hardware or software is, of course, important. The amount and quality of documentation, level of user support, amount of general user

experience, and your own level of skill will determine how quickly you get the system running. The number of application programs currently available and system flexibility will indicate how quickly you can put it to good use. Ease of converting to and from other systems should be considered. Most importantly, does it do the function for which it is intended?

The three above mentioned operating systems all do the same general task, they are each well documented, well supported, and well established as stable systems. Application and utility software is widely available for each of the systems. Selection is often based on personal preference or the availability of a specific application package.

The following paragraphs cover some specifics on CP/M only. Try to make comparisons with APPLE DOS as you read.

CP/M stands for Control Program for microcomputers. This system was developed in 1973 for the Intel 8080 microprocessor chip. It has been adopted as an operating system for Apple, IBM, Xerox and many other desktop computers. Because of its age and the number of different computers it runs on, many see it as the microcomputer industry standard. CP/M was developed and is licensed by Digital Research Inc.

REQUIREMENTS

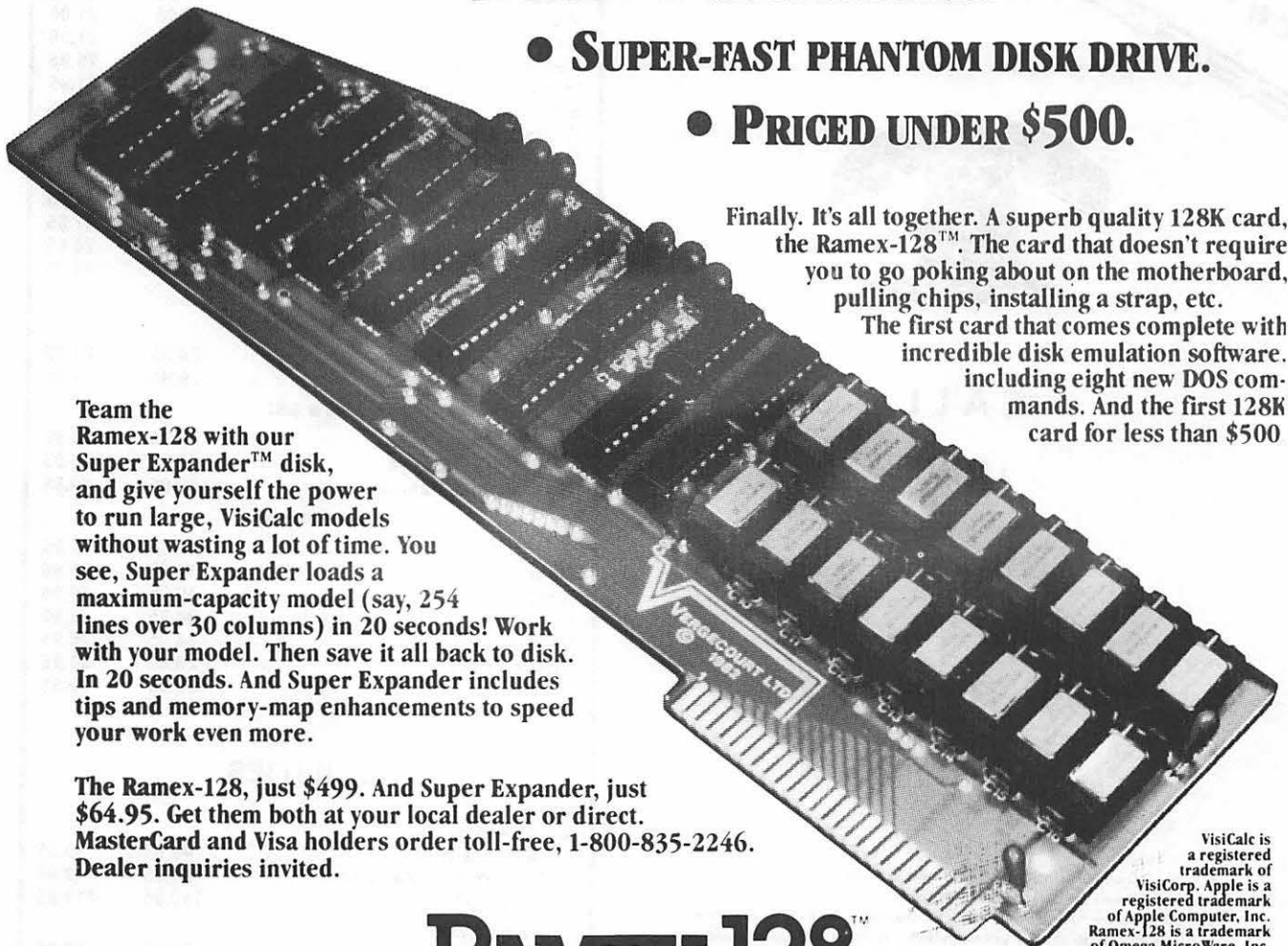
Hardware required for CP/M includes: an 8080 compatible microprocessor, ROM and RAM memory, media storage - floppy or hard disk, and CRT with keyboard. A printer is optional but often necessary. Part of the software requirements for CP/M is system software that comes with the unit. These are the operating system programs and utilities. CP/M supports an editor, assembler, and debugger and also activates many varied application programs ranging from games to education to business.

STRUCTURE

CP/M is divided into four parts. The Basic I/O System (BIOS), the Basic Disk Operating System (BDOS), the Console Command Processor (CCP), and the Transient Program Area (TPA). The BIOS is used to interface with specific peripheral devices such as CRTs, disk drives, and printers. This is configured for the equipment being used and so is hardware dependent. BDOS controls up to four disk drives so that files can be accessed and manipulated on one or all of them. CCP provides the interface between the keyboard and CP/M by reading and processing commands from the user. TPA is the area of memory available to the user. Application programs are executed here.

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STARTING UP

When the system is turned on, a small program in ROM boots CP/M into memory. The CCP always prompts the operator with the disk name (A, B, C, or D) followed by the symbol ">". CP/M addresses disk A as the initial default disk drive.

FILES

Each file has a unique name made up of a disk drive reference, a primary name, and a secondary name or type i.e. (d:ppppp.sss). The CP/M file manager stores files by name in a disk directory. They can be referenced by unique name or in groups.

COMMANDS

Commands can be divided into three categories: built-in, line editing, and transient. Built-in commands are part of the CCP program. These include such instructions as erase, display directory, rename, save, and type a file. Secondly, the CCP allows certain line editing functions. These include line feed, carriage return, retype line, backspace, warm boot, copy, and stop output display. Thirdly, there are transient commands which are loaded from the disk and executed in the TPA. These are essentially utility and applications programs. There are three types - system, housekeeping, and miscellaneous utilities. Under system utilities, there are instructions to initialize disks, copy CP/M, and translate CP/M from 48K to 56K memory. There are many housekeeping utilities. STAT provides information about files. PIP (peripheral interchange program) is a file copy program. ED is the text editor. The following are miscellaneous utilities: DUMP types a file in hex form. SUBMIT allows commands to be batched and executed (while you go to lunch) in the sequence in which they were submitted. ASM executes the CP/M 8080 assembler. DDT (dynamic debugging tool) tests and debugs machine language programs interactively.

CP/M FUNCTIONS

CP/M executes user functions, manages system resources, does some status reporting, and some limited file reporting. There are some very powerful data base management systems (see WAP July '82). Application programs are activated. These include accounting, simulation, modeling, graphics, text processing, spelling checking, and data communication. Much of the software addresses the commercial business market. Examples of these are SUPERCALC, WORDSTAR, and high level languages such as Cobol, Fortran, and Pascal.

COMPARISON WITH APPLE DOS

There are many similarities between Apple DOS and CP/M. There are a few notable differences too. To type out a text file is no problem in CP/M. CP/M comes with its own editor to enter text files. With CP/M, the user has a bit more software available than with APPLE DOS, although as you are well aware, there are vast amounts of software available for APPLE DOS. dBASE II - a nice file management system, can run only under CP/M. SUPERCALC, - a financial spread sheet analysis package, and WORDSTAR - A text processor, are two more popular CP/M packages. Applications that were written to run in CP/M will more than likely be made compatible with new operating systems. Expandable machines like the Apple are able to keep up with developing technology.

REFERENCES

The best way to learn about CP/M is by talking to people who have used it and by attending user group meetings. However there are some well recommended reading materials:

The CP/M Handbook - Hogan
The CP/M Primer - Osborne

Numerous journals also carry articles on CP/M:

Byte
Creative Computing
Softalk
InfoWorld

And please don't forget our own WAP CP/M Special Interest Group chaired by Dave Neumann.

Washington Apple Pi met on July 24, 1982 at 10:00 AM at USUHS. Approximately 250 people attended. A request was made for volunteer help, especially for the Hotline. There will be a Group Purchase of MicroSci drives for APPLE III's. Upcoming tutorials include personal finance, assembly language, Pascal, and LOGO if a teacher is found. Copies of the budget are available upon request. Thanks to volunteers who helped the 4H. A letter from WAP is being sent to area school boards offering our help. Thanks to Betsy Harriman as interim editor, and a request for columnists. There is a problem with some of the MicroSci drives but the company is helping to solve it. Washington Apple Pi now has 3 volunteer consumer advocates. The presentation on Control Program for Microcomputers (CP/M) was given by Adrian Garcia.

Anderson Jacobson, Inc. is looking for dealer or distributors to handle the AJ831 refurbished daisy wheel printer (see advertisement, back page). For dealer prices and information call (301) 840-5700, Gaithersburg, Maryland.

SIGAMES

by **Donn Hoffman**

Sigames is the Washington Apple Pi special interest group concerned with two of the most popular applications of personal computers: games and graphics. We meet every month following the regular WAP meeting in building C, lecture room D of USUHS. All are welcome. The agenda is flexible; the meeting usually starts with a discussion session where attendees trade tips and field queries. This is followed by the main presentation (if there is one) after which newly released games are reviewed.

PARTICIPATION NEEDED!!!

Sigames needs volunteers to assist in the presentation of the monthly meeting. There exist several opportunities in this area.

1) If you possess expertise in (or just enthusiasm for) a particular game, here is your chance to show off; volunteers are needed to demonstrate games, old and new. It doesn't take lots of preparation, all you must do is play the game and explain what is happening and what you are doing as you go.

2) The area of greatest need is the main presentation. We encourage anyone to prepare a lecture or demonstration. Topic and format are without restrictions. Past presentations have ranged in length from twenty minutes to two hours. The topic need not be restricted to games and gaming; graphics and animation, programming and debugging techniques (in any language), and practically anything you can think of is fair game.

LAST MONTH

The July meeting was brief, a result of the lecturer shortage (qv). The first episode of the monthly adventure was played. Aside from the usual Q & A, the only other activity was the demonstration of several newly released aquatic arcade-style games, most notably, Neptune.

THIS MONTH

Sigames will be honored this month by a visit from representatives of Avalon Hill, publishers of wargames and entertainment software. They have promised to demonstrate several of their new games, including some yet-to-be-released arcade-type games. Among those that will be shown: VC - a Vietnam simulation, Telengard - a fifty level dungeon adventure, Under Southern Skies - naval simulation, and Legionaire - ancient Caesar versus the barbarian hordes.

NEWS & COMING ATTRACTIONS

Coming this fall: the September meeting will see the first installment of Sigames chairman Jim Eatherly's series on graphics and animation techniques. Also congratulations to Jim for his appointment as CALL-APPLE's technical assistant for games. The TIPS section of Sigames Reports will be back next month with Wizardry Cheats. &

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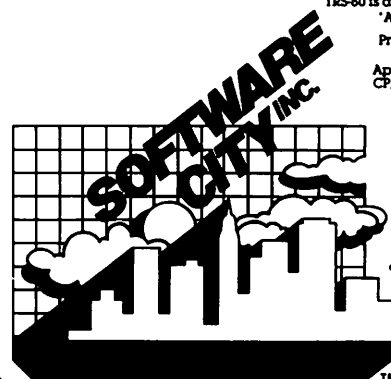
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MIXED TEXT AND GRAPHICS WORD PROCESSING

The Apple is used regularly for word processing and graphics. However, these two capabilities tend to be used separately. A page of printed output is normally devoted to words, or to pictures, but not both. If we wanted to insert Hopalong Cassidy at this point, the usual way to do this would be



FIG 1 - HOPALONG CASSIDY (& HORSE'S EAR)

cumbersome at best. One approach is to print the text first with blank space left for the picture. The picture is added next by running a second program. (Don't forget to back up the paper and realign it.) This might be tolerable for a single page, but not for anything much longer. So what's a poor user to do?

The solution is fairly simple. You teach your text output formatting module to understand graphics commands. The graphics commands call your HIRES screen dump module. `↑RUTTER 10 RIGHT Figure 2 5.5" WIDE BUTTERFLIES` is what a

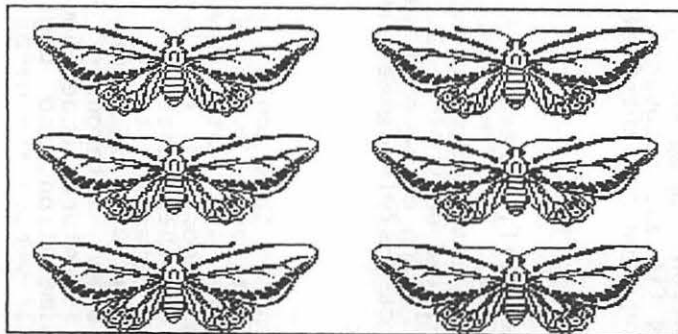


Figure 2 5.5" WIDE BUTTERFLIES

command might look like. Figure 2 is what would result. The `↑` identifies this as a graphics command. BUTTER is the disk file name of the picture to be

printed. The number, 10, specifies the picture width and RIGHT specifies the horizontal page placement. The remainder of the command is the title. Easy so far, but what if there isn't room left on the page for the picture? If there wasn't room for figure 3 here, where would it be placed? At the top

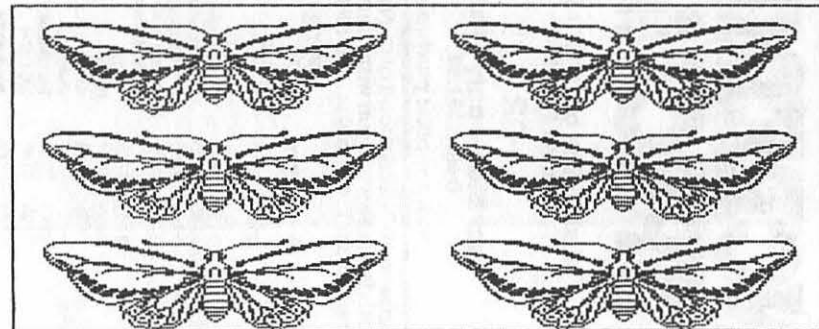


Figure 3 - 6.5" BUTTERFLIES (GYPSY MOTHS?)

of the next page. That's why you used your text output formatting module. It already knows about page lengths, page breaks, margins and spacings. When it sees a graphics command, just lie to it about how much room is left. For example, a Paper Tizer uses 16 print lines of space for a HIRES picture. If less than 16 lines are left, save the graphics command and continue to print the text that follows. Whenever there is room for a picture, the queue of unprocessed graphics commands is checked. All done automatically.

The command structure should allow options and defaults. Useful options include picture size, horizontal placement, and butting pictures together vertically to form a larger picture. The latter implies making the use of a title optional. Defaults can be whatever you want. In my case, I chose a 4.5" picture width, centered in the page, with no title. If `↑FILENAME` is entered for the graphics command then the default results (see figure 1).

So there's the general idea. Modify your text output program to intercept, interpret and execute HIRES screen dump commands. Depend on the smarts already built into the text formatter to handle page breaks and the like. Add a little trickery to fool the formatter at key times. Depend on the graphics routine to do its thing.

What? You don't have a HIRES screen dump package? Sure you do. The WAP newsletter has contained several articles and listings on the subject. Oh, you don't have the source code for a text output formatter? Lots of those around, too. You use DOS & BASIC, and modularized tools are not easy? Now, that's a fact. Try Pascal - much easier. What I'm trying to say, really, is that the listings for this program isn't here for several reasons. First, the pieces are all readily available. Second, my version is very dependent on the configuration of my system and is fairly long. The number of members who could use it versus the many pages of the newsletter it would cover doesn't seem worth it. For me, the true value of articles in the literature is not a listing ready for copying. It's the ideas for new things to try.

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Please feel free to let us know if there are topics you would like to see included in the tutorials that would help you be able to get more use from your Apple, or use it in more creative ways.

A REVIEW OF GRAFORTH - A GRAPHICS LANGUAGE

by Bruce F. FIELD

GraForth by Paul Lutus is a specialized version of the Forth language designed to allow fast and easy drawing of 2 and 3 dimensional graphics on the Apple. It is not a collection of graphics subroutines that can be included in another program but is a complete language. Just as it is impractical to include an Applesoft program as part of a Pascal program, so it is also impractical (almost impossible) to include a GraForth routine as part of a program written in another language. Thus to obtain maximum benefit of GraForth the user must be, or become, reasonably proficient in Forth.

There are four major capabilities of GraForth:

Two-dimensional graphics to plot points, draw lines, and fill rectangular areas on the screen, in color,

character graphics to create new character sets, display text with different sizes and colors, and define new shapes in terms of character sets,

three dimensional graphics to create and display three-dimensional color images at high speed for animated effects, and

a music synthesizer to play single-note-at-a-time melodies in one of nine different "voices".

Two-dimensional graphics:

Commands to plot points, draw lines, and select colors are available. They are similar to the Applesoft commands with the exceptions that they execute much faster and that colored lines are drawn as continuous lines with no breaks. In addition commands UNPLOT and UNLINE are available to erase points and lines. Rectangular areas may be filled with any hi-res color and erased with single commands. GraForth also has an EXMODE drawing mode which erases existing points on the screen with new erasing points where they coincide. A primitive set of Turtle graphics commands are also included. Low resolution graphics are not available.

Character graphics:

In general the character graphics capabilities of GraForth parallel the abilities of the Hi-Res Character Generator included in DOS Toolkit. All normal screen output in GraForth is to the hi-res screen using a standard character set with upper and lower case. To change to a different previously defined set requires only one command. Five character sets are included on the system diskette. After loading any or all of them into memory they may be swapped freely and mixed with the graphics pictures with no special preparation. Simply declare the desired character set and use the standard printing routines.

Some features included in GraForth but not Toolkit are the ability to reverse scroll i.e. scroll text down on the screen, make characters from 2 to 8 times larger, and display the enlarged characters in color. As with Toolkit a character editor is included to allow you to design your own character sets or graphics characters. One improvement over Toolkit is that it is possible to define a character that occupies more than one character block and print that block to the screen as one character. This is a much better arrangement than printing multiple characters arranged to assemble a complex shape as required by Toolkit. However I feel that the Toolkit character editor is somewhat easier to use than the one included with GraForth.

Three-dimensional graphics:

Three-dimensional (3-D) graphics is the major reason for GraForth's existence. Up to 16 previously defined three-dimensional objects may be displayed on the screen simultaneously. The objects may individually be moved on the screen, translated in 3-D space, rotated, or scaled. In addition the perspective of the space (viewing angle) and colors of the objects may be changed. The publishers claim these movements can be accomplished with astonishing speed because of the system of matrices used to represent the images.

To define objects two programs are provided, IMAGEDITOR for general purpose objects where the endpoints of each line are defined in 3-D space and the coordinates are entered and converted to an object definition in memory. This object definition can then be saved to disk for later use. The second program, PROFILE, is used for easier definition of cylindrical objects. It operates analogously to a lathe. The diameter of the object at each point along the axis (its profile) is entered into the program. This is converted and stored in memory as a cylindrical object. For the PROFILE program it is possible to develop the coordinates external to GraForth. Using a standard DOS text file load the object coordinates into the object definition program instead of typing them in from the keyboard. It does not appear possible to do this with IMAGEDITOR. One is forced to tediously type in three or six numbers for each line of the image.

Music synthesizer:

The music synthesizer allows playing of notes one at a time over a range of 4 octaves. Nine different voices or tone qualities are provided. The operation of the synthesizer is primitive: first a voice is specified; then a note or series of notes is played by specifying a pitch (a number between 16 and 248) and a duration (a number between 2 and 255) and invoking the word "NOTE." No facilities are provided for translating music. The user is responsible for coding the music in terms of the pitch and duration values.

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EASE OF USE:

In general I had no difficulty in using the system; everything operated as described in the manual. However, that is not to say that it is particularly easy to use. Images can be defined, manipulated, and displayed simply by following the tutorial in the manual. To obtain maximum benefit, or for that matter any useful result, the user must learn this implementation of the Forth language. GraForth is not a Fig--Forth implementation and is obviously skewed towards making it more familiar to Basic programmers. The standard Forth fetch and store commands (@ ! C@ and C!) have been replaced by PEEKW, POKEW, PEEK, and POKE. Other random liberties have been taken requiring the veteran Forth programmer to proceed cautiously. Not unexpectedly GraForth closely follows the Forth implementation of TransForth (also written by Paul Lutus) except TransForth uses floating point numbers exclusively and GraForth uses 16-bit integers.

One chapter of the ten chapters total, describes programming in the GraForth implementation of Forth. Although each command is described and a simple example given, I feel that this may not be adequate for the novice programmer. More sophisticated examples that demonstrate the power of the language would help.

Animation with the system is easy to implement as GraForth uses both hi-res screens, automatically drawing to the one hidden from the user and switching screens when the image is complete. The screen switching is transparent to the user and is accomplished without the usual annoying flicker.

GraForth is a compiled language, requiring source programs to be created using an editor and then compiled either from memory or a disk text file into the system. A primitive editor is provided and is clearly useful for debugging programs. It may be co-resident in memory with the GraForth system if not too many program elements have been added to the system and the file being edited is small. Lack of memory is the most serious problem with the system. For any serious program development a Language (RAM) card is required. GraForth will automatically load the DOS into the card freeing about 10K of memory for program expansion or text file editing. For long files any editor that generates standard text files may be used.

GraForth uses a modified DOS and can be run only from a diskette containing the modified DOS. However the supplied diskette is NOT copy protected and may be copied using any standard copy program. In fact the manual insists that you make several backup copies.

DOCUMENTATION:

The manual is excellent, a hundred-fold improvement over the TransForth manual. It is a spiral bound book of 220 pages (a la the Apple manuals). The manual is mostly written as a tutorial that moves you

through the system with hands on demonstrations of the various features. There are five appendices which include a complete listing of all the GraForth words with partial description and a page number where the word is discussed in the tutorial, a complete memory map of the system, an explanation of the image data and the 3-D mathematical method, a listing of the files on the diskette supplied, and a table of ASCII characters and their values in hexadecimal and decimal. The last appendix is a much desired index. I would like to have also seen a listing of all the error messages and a complete description of them.

PIDDLING LITTLE THINGS:

GraForth has its own way of putting images on the hi-res screen. Unfortunately shape tables are not supported. For a test of the speed of the system I wrote a shape drawing routine in GraForth and compared the speed with the machine language routine in Applesoft. Sorry, no contest; for a shape 370 bytes long Applesoft took 0.6 seconds, GraForth 3.7 seconds. But this is really not too shabby. An equivalent routine written entirely in Applesoft took 45 seconds.

In order to increase the speed of the graphics, the screen size has been decreased to 256 by 192 points. Limiting the horizontal component to a one byte number significantly simplifies the computations required. The "missing" edge of the screen is usually not noticeable. This was a good compromise by the author.

To compile code created by the editor in the text buffer, the user is required to type "34817 MEMRD". Why should the user have to remember the buffer starts at memory address 34817, why can't the system?

CONCLUSIONS

GraForth does well in putting and manipulating 3-D images on the screen. However, when a lot of complex images are drawn the speed of the system slows; it is not suitable for animation. This is a limitation imposed by the computational abilities of the Apple. The two-dimensional capabilities of the system offer increased speed and improved line plotting in color when compared to Applesoft. The music synthesizer is little more

than a toy to add beeps and boops to programs. A RAM card is required to allow room for additional program development or expansion.

Editor's Note: The GraForth developers would like potential purchasers of their product to know that its use is aimed primarily at Applesoft-level programmers who are seeking to develop faster graphics capabilities and are willing to try alternatives to the Applesoft Basic language. Those familiar with Forth probably will have little use for their product, especially since there are distinct differences between GraForth and standard Forth. &

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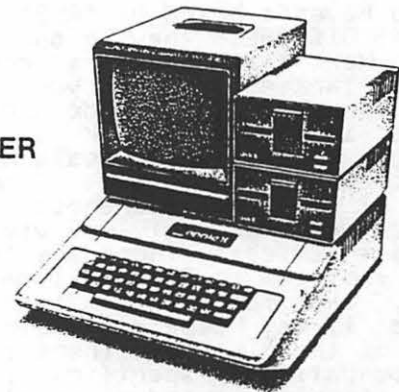
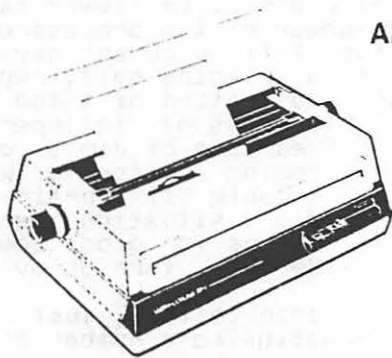
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"AN APPLE A DAY..."

by Bruce & Jim Baird

Whether or not "Poor Richard" first said it or just programmed it into the ROM of our collective unconscious doesn't matter. What is important is that the affordable microcomputer has spawned a world-wide, grass-roots movement which is helping the maimed and the dying in ways unparalleled by humanitarian endeavors of the past. My brother, Jim, is totally paralyzed and cannot speak. His only means of effectively communicating is with an Apple II.

I'm fortunate to be the system coordinator for what I believe to be a "high watermark" project in aiding the handicapped and was delighted to share the experience with members of the Washington Apple Pi. Hopefully, this article is the first in a series. I'll outline the problem and scope the solution from an overall system perspective; more technical articles to follow will expand on some of the details; my brother Jim will present the "users' point of view; and we'll all conclude in a joint article presenting our "lessons learned." This is only one of many hundreds of such stories, but there are many thousands to go, so prepare to get hooked on what I believe is the most rewarding path of the microcomputer revolution.

For some medical conditions (with or without your Apple II) you just don't have to worry about keeping the doctors away; if they can't cure you, they leave. Amyotrophic lateral sclerosis (or ALS) is a case in point. I hadn't heard of it either until Jim received his final diagnosis about 5 years ago. ALS is a progressive degenerative disease of the motor neurons. Paralysis typically begins in the lower extremities; then it gradually invades and destroys your entire network of motor nerves. The longterm effects of the paralysis can be rather complete. Some victims can't even blink their eyes! The disease is particularly cruel because neither the sensory nerves nor the emotional nervous system are affected in the slightest, although the muscles rapidly atrophy through disuse.

If you haven't heard of "ALS" type in "LOU GEHRIG'S DISEASE," they're one and the same thing. Next time there's a rerun of "Pride of the Yankees", switch your system over from "Channel 3" to TV mode and tune it in, because in a way I think you're already reading a sequel, which deals with the same kind of courageous stuff. From the standpoint of public awareness, (translate, research and funding), ALS victims suffer at least twice: There are "only" about 55,000 families in America immediately concerned, and most victims lead rather reclusive lives, especially in the final stages of the disease. There are presently two foundations specifically orienting their efforts toward stimulating medical research to find a cure, but when it comes to helping the patients, their resources

really can't be brought to bear in a major way. The strategy is research, and it costs money to raise money.

The prognosis for ALS is "terminal" although death always occurs from some secondary systems' failure rather than from the disease itself. With the advent of modern technology a new "pitch" has been added, which even Lou Gehrig didn't have to face. After about 3 to 5 years of living with an incurable disease, the family gets to make "the choice" of whether to use an artificial respirator or not. This is made necessary by the impending paralysis of the respiratory nervous system. The choice is obviously a very personal thing--family situation, economics, quality of life, faith in God, all playing their proper role in the set of cosmic tradeoffs for those who are called upon to make them. The payoff for electing to use a respirator is to gain a few more years of life to see how the medical research unfolds. You also have time for prayer.

"Iron lungs" aren't used much anymore. Modern respirators are truly remarkable machines--about the size of an overnight case, AC/DC spinoffs of moonwalk technology with plenty of backup redundancy--they deliver filtered, humidified air to the lungs through a serrated polyethylene hose hooked to your throat by a permanent tracheotomy. Some of the more advanced models even have a programmed "sigh" to relieve the monotony of mechanical breathing. And would you believe, you can lease or buy?!

Take it from my brother, Jim, being permanently paralyzed and hooked up to a breathing machine really isn't so bad; that is, if you're interested in comparative measures of effectiveness! But things really begin to get grim when the nerves to your voice box let go and lack of control over your facial muscles makes lipreading a less than reliable proposition. Almost all such persons revert to an excruciatingly slow-data-rate system of eye blink communication; that is, unless they are fortunate enough to own an Apple II! Dying is hard enough, but without means for reasonably reliable and effective communication with your loved ones, it's an unbearable proposition. As Jim's voice slowly failed, the awesome grandeur of the process of reconciliation--the letting go and saying au revoir--came to a grinding halt, replaced by the rage and frustration of a too slow and too unreliable means of interpersonal communication. Even some of Jim's oldest friends stopped coming by for a while, until we got the Apple II on-line and operational. In Jim's situation there are also practical reasons for good communication, phrases like "Hey, turn up my air!"

When Jim's voice began to fail, just over a year ago, we investigated a number of com-

mercially available "augmentative communication" systems. Some were quite elaborate, employing the latest in microprocessor technology. A few had voice synthesis and limited word or phrase storage capability. Almost all of the devices, however, were inappropriate from a system standpoint for meeting the very special needs brought about by Jim's physical condition. For example, a fairly good voice synthesizer system employing a number of factory-stored phrases, couldn't be operated by a user with Jim's near total paralysis. A fairly good and practical single-switch actuated scanner display system just didn't have the capacity for much information and was not user programmable. These were definite practical and social limitations for a guy who just got his PhD. All of these commercially available devices shared at least two characteristics. They were expensive, typically in the low thousands. And all of them (to put it in Jim's words) were, well... "inelegant!" Jim had a good 19-inch color TV positioned above the foot of his bed for "recreational" purposes, since in that condition there's really not too much else that's exciting to do. Then we started the system development ball rolling when someone suggested, "Hey, why not get a computer?"

"Necessity," Poor Richard teaches--well, you know the rest. And by now you too have conceived our system solution--a pieoelectric-switched, microcomputer-driven, programmable-speed, video-scanned, interactive communication system for the gravely handicapped. We currently operate with video and hard copy output, but voice synthesis is under development together with a higher data rate color graphics display, which will use the full power of the Apple II.

Here's an early system "hardcopy output" example, one of the first produced by my brother, Jim.

Not bad for a guy who has to be on the home stretch of life. But notice his penchant for the pursuit of "elegance" in overall system design! This keeps our team busy. It's a highly challenging, non-trivial endeavor. All computer-based handicapped system designs must be tailored and adapted to meet user needs, must continually evolve to incorporate user experience, and should be flexibly designed to embody new technology as it becomes available at an affordable cost. As such, our system will never be "done."

Among our family's great blessings are some superbly talented friends who make all this all possible: Captain Rich Armour, an Air Force computer scientist, who among other things used to have the watch on the F-111 software support; and Dr. Craig Linebaugh, a George Washington University professor of speech and audiology, who is also a physiologist by profession.

All of these projects in support of the handicapped can only be accomplished with a classical multi-disciplined team, and a fair amount of money and time, which is why I'm writing to you. You can reach me at 683-6420. The maimed and the dying need your special time and talent. We know of at least two persons in the Washington D.C. area who share the same kind of condition as my brother, Jim. Our project team's consulting biostatistician, Dr. Ted Woolsey, ran a mini-study for us and has estimated that there are at least three-thousand persons nationally who need this kind of system, and there are many more throughout the world.

I've spoken to a few foundations about this. Of course there's always the government. I had heard of "computer illiteracy" before, but they don't yet know what a microcomputer is! They don't seem to know what a "system" is either, but they seem to think it's something that's "done." Perhaps this might make a good project of the Washington Apple Pi since I understand you have a special interest group on handicapped computer technology. If we could find a way to get some of these things done, perhaps through the national "network" of Apple computer clubs, I think Ben Franklin would approve!

```

SUMMARY OF COMPUTER ITEMS
SUMMARY OF COMPUTER ITEMS
SUMMARY OF COMPUTER ITEMS

- THE SYSTEM SO FAR IS TERRIFIC!!
- THE ABILITY TO COMBINE ITEMS FROM DIFFERENT FILES INTO A SINGLE MESSAGE IS JUST GREAT!!
- THE CONCEPT OF A LARGE NUMBER OF SHORT FILES TO REDUCE SCANNING TIME IS VERY VERY USEFUL.

- THERE ARE ONLY TWO MAJOR PROBLEMS AT THIS POINT IN DEVELOPMENT:

  ITEM ONE: THE TYPE SIZE OF THE FILES. I JUST CANT READ MANY OF THEM! CAN THESE BE EASILY PROGRAMMED FOR LARGER TYPE?

  IN ADDITION, TO HELP WITH THIS PROBLEM, HOW WOULD YOU FEEL ABOUT AN ELEGANT, 21 INCH MONITOR TO REPLACE THE TV? THIS MAY DO THE FOLLOWING:

    1. LARGER TYPE
    2. FINER TUNING OF CHANNEL & THUS CLEARER LETTERS
    3. LEAVE IT ON ALL THE TIME. THIS IS MORE IMPORTANT IF I CANNOT CONTROL SWITCHING FROM TV TO COMPUTER & BACK.

  ITEM TWO: THE LOCATION OF THE ENG SWITCH IS A REAL PROBLEM. IT IS VERY HELPFUL FOR ME TO SEE LIGHTS, BUT I AM CONCERNED THAT NURSES MAY PULL IT OFF & BREAK IT.

  DO YOU THINK THAT CHARLEY COULD RUN LEADS FROM ENG BESIDE TV TO JACKS IN WALL BEHIND MY HEAD?

  ALTERNATIVELY, COULD WE MOUNT ENG ON WALL BEHIND MY HEAD AND HAVE CHARLEY DUPLICATE ENG LIGHT PANEL ABOVE TV.

THE OTHER ITEMS ARE LESS URGENT

ITEM A. THE EXTREME SENSITIVITY OF THE GAIN KNOB IS FRUSTRATING. WHAT DO YOU THINK ABOUT HAVING CHARLEY GEAR IT DOWN ** SAY 10 TO 1?

ITEM B. NEED LONGER LEADS FOR SITUP & TURNOVER IN BED

ITEM C. PLEASE WRITE INSTRUCTIONS TO ADVANCE PAPER TO READ LAST LINE OF OUTPUT

ITEM D. DITTO TO SUPPRESS & REACTIVATE BEEP.

END COMPTER ITEMS *** THANKS A MILLION!!!
7.7.81
END COMPTER ITEMS *** THANKS A MILLION!!!

```

THE IAC RESPONDS

Editor, Washington Apple Pi

I am writing this letter in response to David Morganstein's article "The IAC and Thee". I am the treasurer of the IAC and have some insight into the areas that David touches upon in his remarks. I am also an active member of the Northern Illinois Apple Users Group, as well as President of Omega Microware, Inc., sponsoring member of the IAC. I am simply going to browse through David's article and respond to each item as I come across them.

First, David discusses the distance between the IAC and its member clubs. The first cause of this as expressed in the article is the suggestion of competition between the IAC and Softalk. What competition exists is only in a commercial manner. The fact that the IAC publishes a commercial magazine and that it competes with Softalk for a share of the advertising dollar available is the ONLY way the officers of the IAC view themselves in competition with Softalk. I am sure the publishers of Softalk are not competing for our member clubs to join them. I am sure they are competing for the advertising dollar, however. The Apple Orchard is, in fact, in competition with every publication that sells advertising. It is the profit from the Orchard that keeps the IAC going.

I do not know who the "IAC staffer" is who said "he preferred to see a higher caliber article in the Orchard" in response to the question of why the Orchard did not have more member club newsletter articles. I do know that there is relatively little that is submitted to the Orchard by the member clubs. Just because it is submitted does not make it printable either. I, for one, would not want to see the editor required to publish a certain mix of articles (60% from clubs and 40% from other sources, for example). I wouldn't want to be the editor that has to abide by that type of requirement. I believe the editor is paid to publish the very best material he has.

While the "unification of club efforts around the country" is a sound idea, I believe that many, if not most, are having enough trouble unifying their own internals. The distance between user groups is vast from one area of the country to another. Having attempted to organize an exchange of newsletters between user groups (two years ago), I can tell you that organizing 400 groups is almost impossible. One of the major problems is not the IAC itself but the internal communication within the member groups themselves. MOST OF THE CORRESPONDENCE FROM THE IAC TO THE USERS GROUP DOES NOT GET TO THE CLUB LEVEL BECAUSE THE CONTACT FOR THE CLUB DOES NOT REPORT THE RECEIPT OF THE CORRESPONDENCE TO THE CLUB. We are finding more and more that some clubs say they are not receiving many of the mailings. Yet, there is no return of mail from the post office. So the stuff is getting to someone! While the IAC has

asked all clubs to fill out a questionnaire, only a small percent have responded. One of the most important things a club can do is establish who in that club is to receive the mail from the IAC and who will be responsible for making sure it gets to the officers and membership.

I find it hard to believe that the Apple Orchard is draining off talent from local club magazines as implied in the article. With hundreds of clubs, each with its own writers to contribute to the local newsletter, the effect of the Orchard paying a fee for articles is NOT going to cause the demise of any local newsletter. The Orchard uses only a few articles each issue. This should not cause any great hardship on member clubs. The very personal effect of two of the members from WAP contributing to the Orchard, even for pay, certainly has not hurt the quality of the WAP newsletter. (Even Bernie's vacation should not diminish the quality of the Newsletter. And I see that as much more threatening than the AO draining off your talent.)

I agree that authors have the right, and that the AO editor has the responsibility to print the User Group name along with the author's name. I examined the July-August issue of AO and discovered that, in most cases, this was done. And the editor has assured me that all by-lines will be given in future issues.

While the IAC is in "possession" of 800, not 80, not even 8, public domain software disks, I fully understand the difficulty of distributing this software. First, let me point out that until January of this year, the IAC had only ONE paid employee. That employee was the editor of the Orchard. In January of this year, a business office was established in Santa Clara, CA, and Ken Silverman was hired full time. He hired one secretary. Until recently all the work, including publication of the Orchard has been done by those three. Their duties also included generation and mailing the disk of the month to all member clubs, publication of other IAC material, the daily operation of the office and more. From my experience, I see these people as highly overworked. As the finances of the IAC become more stabilized, more employees will be hired. Somewhere along the line more of this software will become available.

However, I think there is a misunderstanding of the software in the IAC library. While I earlier referenced these 800 disks, it should be pointed out that these disks originally came from the Denver User Group and were not "assembled to be available to member clubs" as suggested in the article. They were assembled to maintain a library of public domain software but nobody expected that they would be readily available to member clubs until the financial ability existed to distribute the software. Incidentally, this library has been main-

tained by Terry Taylor. Terry has volunteered to maintain these disks for the IAC as well as a paper library that must be over a garage full. I think the most thankless job of all of us volunteers is Terry's. As to the ability of having member clubs administer this library, the sheer volume of disks multiplied by the potential demand (800 disks x 400 clubs = 320,000 disks), as well as the great problem of finding 'volunteers' to do ALL this work make any thought of giving this job to volunteer distribution people out of the question. I know that most clubs would not want all 800. But who would even have the time to sort out 20 for each club from the 800? That's 8000 disks. So the IAC is doing its best to send out one disk each month. And, by and large, that monthly disk contains something worthwhile.

At this time I should talk a little about volunteers. Volunteers have only a certain amount of free time. Most volunteers have a living to make, a family to visit with, and perhaps some other interests. In my own club, I see serious problems with getting volunteers. I also read many different user group newsletters and I find the central theme is an appeal for help, for volunteers to share the work load. If the draining of two writers for the WAP newsletter is a serious blow to the WAP, can you imagine the blow to any club that volunteers to attempt any project such as the distribution of this much software. The IAC could literally destroy a club by having it do all this work. Besides, who

could afford the actual costs; the volunteers or those who would benefit from such an undertaking?

David mentioned that very few clubs participated in the election of Directors. This is certainly a fact that must be remedied. However, as I mentioned before, the IAC is not getting a good response from the clubs to its requests for a return of the survey we sent out. How are we to know to whom to send material if the clubs do not tell us? At the officers meeting, before we saw the article in the WAP newsletter, it was decided to take certain steps to contact those clubs that have not responded to the survey. Several suggestions were made and will be implemented to find out who the contact within every member club is. An article in the next Orchard will ask each club member to request of their club that a representative be appointed, if this has not been done already, and that this representative be responsible to his or her membership to report on IAC activities. That person will receive all IAC correspondence. Then each club member will only have to look toward that person to find out what is happening and what new materials have been received.

I believe the general direction of the IAC is forward and correct. Given time to sort out its budget (after all, it is a new operation), and given time to establish a modus operandi, the IAC will serve its members even more than it already does.

David M. Alpert

Dear Mr. Morganstein:

Thank you for your comments on the International Apple Core (IAC) in the July issue of Washington Apple Pi. Several of your concerns reflect the consequences of economic realities which we are beginning to address. Others reflect administrative and procedural problems which we shall attempt to correct. Your club is not alone with these concerns.

The IAC exists to fill two functions. First, to unify and support club efforts around the world. Second, to support Apple users in general. Out of 400,000 Apple users, less than 15 percent belong to clubs. The remaining 340,000 cannot be ignored. The Apple Orchard (TM) serves as our vehicle for providing information and support to the entire world of Apple users.

The Apple Orchard also provides almost all the economic support for the IAC. Club dues cover less than three percent of the IAC's annual expenses. At the moment the Apple Orchard provides the rest. For the magazine, and the IAC, to survive, the Apple Orchard must meet the interests of the majority of Apple Users.

As you have already observed, this results in a magazine which ignores many of the information needs of user groups. Missing most prominently from the magazine's editorial content are numerous reprints from club newsletters. Some reprints do appear; there is no policy against it. To remedy the paucity of reprints, the IAC just began publishing them separately. We expect the volume to increase over time. These reprints are provided to our member clubs at no charge; net income from the Apple Orchard is paying the bill.

You mentioned that the IAC has a collection of 800 disks of public domain software. The disk collection actually belongs to Major Terry Taylor, who has been collecting and swapping public domain software since before the IAC, or even the Washington Apple Pi, existed. Terry has made his collection available to the IAC for editing and distribution. As we do so, programs from his collection appear on the disks we send to clubs monthly. In the meantime, anyone who wishes details on the contents of Terry's collection and how to obtain copies, should contact Terry directly - (213) 372-4134.

Communication between member clubs and the IAC continues to be a problem. In the past several months we have increased the frequency and scope of our mailing to clubs. Procedural changes which incorporate many of your suggestions to insure that "the mail gets through" will be discussed in the IAC club mailing. The greatest remaining problem is communication from clubs to the IAC. Your own editorial was sent to the Washington Apple Pi, not to the IAC. Clearly, you feel uncomfortable addressing us directly. Why? What steps can the IAC take to improve input from our member clubs?

The IAC seeks to become a professional organization representing and serving Apple user groups and users. We seek professionalism solely to fulfill our function in the best manner possible. Suggestions for the improvement of the IAC will be well received from any quarter.

Ken Silverman, President
International Apple Core

THE SENSIBLE SPELLER: A Review

by Jack Warner

I can tell you that you can spell relief a new way: THE SENSIBLE SPELLER. The performance is so accurate I had to look up words that I had been misspelling for years! I used the Random House Dictionary, provided as part of the documentation, to check the words! Yep, SENSIBLE SPELLER was correct.

The review of APPLE SPELLER, in Washington Apple Pi earlier this year, convinced me that the time I spend on the Apple word processing could be improved by having an almost automatic way of correcting my spelling. This software first issued as the Apple Speller, later as the Sensible Speller is now enhanced to include all 74,000 words in the Random House Concise Edition Dictionary. (Now if only someone will invent a syntax corrector and text generator I could retire!).

I immediately inserted the program disk without reading the documentation, and proceeded to use the program. The screen instruction default values allow use without documentation. The 47 pages of documentation are clear and concise, if you prefer initial hand holding.

Obviously, from these comments you can conclude that the program is easy to use. And it is. Later after the thrill wore off I did read about such finer touches as adding words to the dictionary and how to list. While not as thrilling as Agatha Christie it does give you the complete picture.

SENSIBLE SPELLER boots up rapidly and with a one disk system requires the following disk change sequence to check and correct a file: program disk-your file disk-dictionary disk-your file disk. A two disk system simplifies this. Another drawback to a one drive system is that you cannot add to or delete words from the dictionary disks.

A nice feature, and a humbling one, is watching the word count as your file is analyzed and then along side, watching the number of unique words count. I began to suspect my vocabulary doesn't begin to utilize the primary dictionary disk containing 45,000 most commonly used words let alone the second dictionary disk containing the remaining 29,000 words.

The SENSIBLE SPELLER is programmed in five versions, DOS 3.3 (This supports most of the word processors), DOS 3.2 for old timers, CP/M for Z-80 card programs, Pascal, for Pascal wp's, and a Super-Text version for Muse software. Did Sensible miss anybody!!

A nice feature is the fact that two program disks are included--none of this sending \$5.00 for a second disk. To see how things are at Sensible vis-a-vis customers, I cal-

led with a question. I was courteously directed to the person who answered the question. While this is not a rarity among computer vendors, it occurs seldom enough to give Sensible a three star rating in my book. Coupled with the rest of the package, I can certainly recommend this program to those who want their spelling to be as good or better than their writing! (Price \$125.00 from Sensible Software, 6319 Perham Drive, West Bloomfield MI 48033, 313 399-8877.)

LETTER TO THE EDITOR: Apple Pascal

16 Rockland Street
Wellesley Hills, MA 02181

August 2, 1982

Dear Bernie:

Here is a short tip for Apple Pascal Programmers who have the Sup'R'Term 80-column card, with the "true shift key" wire installed. (There must be a few others of us out there!) The Sup'R'Term card comes up with the shift key disabled and the shift lock on. In theory, pressing control-A and control-V in succession will get in the configuration that I prefer: shift key enabled and shift lock off, so the default text entry is lower case. However, for some curious reason, it seems to take several tries before those keys will "take" in Pascal (especially if, like me, you tend to go into the E(ditor before you remember that you want lower case).

Fortunately, there's a very easy fix that can be incorporated into a short SYSTEM.STARTUP program, to get the Sup'R'Term to your preferred default configuration. For my combination, it involves poking the value 64 in memory at address 1403 (that's \$57B in hexadecimal). The Sup'R'Term card uses that location (one of the unused locations in screen memory) to keep a "flag" byte which controls the shifting.

Bit 7 (the most significant bit) of the byte indicates whether the card is processing input or output from its BASIC or its Pascal entry points. A zero in the bit signals Pascal. Bit 6 covers the shift key enable: 1 means the shift key will be recognized (if the wire to the button(2) input is installed); 0 means the shift key is disabled. A 1 in bit 5 is the "soft" shift flag: the current input character will be kept in upper case. A 1 in bit 4 signifies "shift lock on." If both bit 5 and bit 4 contain 0, alpha characters input will be converted to lower case (unless the shift key is pressed).

The Sup'R/Term firmware initialization routine stores the value \$10 (16 in decimal) in \$57B, so the shift key is disabled and the shift lock is on. That's fine for use with BASIC, but not necessarily the best for Pascal. A value of \$40 (64 in decimal) would enable the shift key and clear the shift lock (the way I like it). If you don't have the shift wire installed, a value of \$00 (0 in decimal) will clear the shift lock without enabling the shift key.

To poke the desired value from a Pascal program, the "free union" record is handy. Here's a sample program to show how.

```

program SET_CARD;

type union = record case of boolean of
    true: (Addr : integer);
    false: (Data : integer);
end;

var F : integer;
    Flag : union;

begin
    Flag.Addr := 1403; { $57b }
    F := 64; { for shift key enabled,
              shift lock off }
    moveleft (F, Flag.Data, 1); { want
                                  one byte only }
end

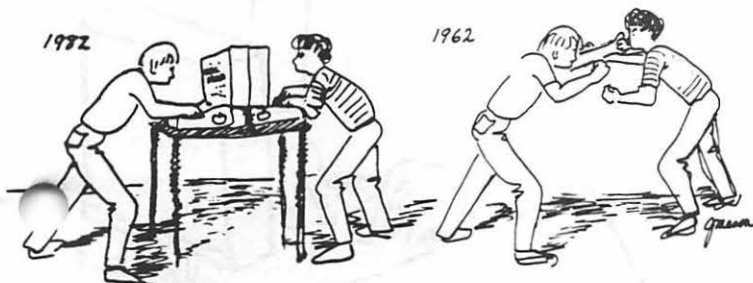
```

Rather than using moveleft, I could simply have assigned the value 64 to Flag.Data; but, since the integer constant 64 has two bytes, the high byte (0) would then have been poked into address \$57C. That would probably do no harm; but using moveleft avoids any risk. (Note, that, because Apple Pascal stores integers low byte first, the first byte of the variable F is the one we want. We have to use a variable, rather than simply typing "64" as the source parameter, because moveleft can't find the address of a constant.)

Of course, this routine could be inserted into a startup program that does something else, too. I have it as part of a program that reads my Thunderclock card and inserts the current date into the boot disk directory and into the copy maintained in the heap, so the Filer is updated automatically. I borrowed that idea from a program in the WAP PIG library.

Sincerely,
David W. Walker

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A new computer bulletin board, dubbed "microEncounters", is creating a lot of computer talk about town. Although the D.C. area already boasts seven computer bulletin boards, microEncounters is one board which is definitely different. It is the first "singles network" in the nation, providing an electronic medium for meeting people, finding a roommate or a bridge partner or a soulmate. Since the latest census data on the D.C. area indicate that the percentage of singles in the population has nearly doubled in the past twenty years, there is a growing demand for services to help people "connect" with others.

microEncounters operates like a private club, by membership only. It carries personals, ads similar to those you might find in the Washingtonian Magazine. Thanks to the electronics of the system, you can place an ad at 10 a.m. and have a "micro-Encounter" with another member the same day. Although the system is designed for singles, it can be used for a variety of personal messages. People who are new in the D. C. area may find it particularly useful in responding to small, everyday "emergencies." For example, if you need a

babysitter in Bethesda tomorrow night, this system provides a good alternative for finding someone suitable. On other boards which emphasize computer-related messages, an ad for a babysitter would not get much attention. Besides, it might not be advisable to broadcast your real name and phone number over an ordinary board.

Messages and ads are confidential and can be password-protected. Therefore, if you want a particular person to have your telephone number, the message can be password-protected so that only one person can receive it. The board also features a menu-driven approach which assists the novice with useful "help" commands and enables the experienced user to search, retrieve and post messages quickly. There are automatic sign-ons for subscribers as well as automatic searches by name and subject. Periodic systems bulletins concerning events of interest to singles in Washington are posted regularly.

This week's advertisers include a 27 year old female systems analyst who would like to meet a man who shares her interest in old movies, a divorced attorney living in Georgetown, and a woman from Annandale who claims to be a good cook.

To subscribe to microEncounters, connect with their computer at 703-560-9555 or write microEncounters, P.O. Box 2078, Falls Church, VA 22042.

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APPLES GO TOPLESS

by Jack Warner

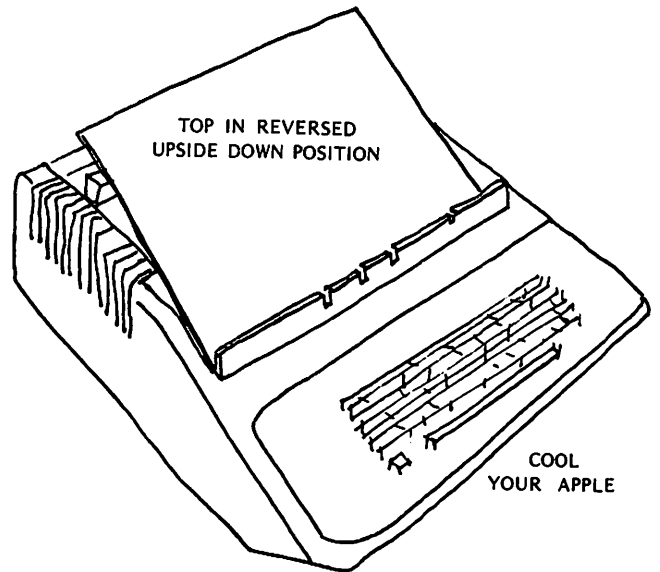
I was pleased to read how to cool a hot Apple in the August Pi issue. I do not have small children and would not recommend this cure if you have them or tend to fall face front on your Apple after forgetting to save that program you just typed in for the past three hours! Quite simply, to cool your Apple remove the top while running!

If this is too much, then an alternate solution will provide two things: a cooler Apple and a tray to hold your word processing work, provided you don't have equipment on the Apple lid. To achieve this, place a small stick (I use a 1" x 1" piece of wood--15" spans the case) across the top of the case (lid removed) near the back edge. Take the case lid, turn it over and put the former back edge as the front edge. Adjust the stick forward to raise the lid to become your handy-dandy word processing/magazine holder.

I have noted the following temperature reduction: temperature measured on the 6502, lid on: 110 degrees F; lid off: 100 degrees F; lid in holder fashion: 105 degrees F. Room ambient 75 degrees F. I measured the

temperature with a Kodak Photo thermometer laying front to back on the 6502 and up to row D of the rams. I would like to hear what the temperatures are with a fan and with the power supply removed, with and without a fan.

The partial top solution looks like this:



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IAC CORNER

I am pleased to learn that communication between the IAC and member clubs is working well (at least in the IAC to the member clubs direction). David Morganstein got several responses to his "The IAC and Three" article which appeared in the July issue of WAP. Two of the responses, which are from Ken Silverman and Dave Alpert, appear elsewhere in this issue. Now if we can only get more inputs from the member clubs...

A major problem that IAC has run into concerns how IAC information and material is passed from club recipients to club members. Too often it seems to stop shy of the individual members. We discussed this problem at the July business meeting and agreed to implement several procedural changes. One of these is to identify the most recent submissions and diskette releases in each issue of the Apple Orchard.

Here are two excerpts from Ken Silverman's recent memo to IAC Directors and Officers:

"The 'Apple Tech Notes' are now being printed, the tabs and binders are being set up and we have a full color brochure to be sent to all Apple Computer Dealers. If you require any discount coupons let us know..."

"The office has now added more phones and lines to handle the increased amount of questions being directed to the IAC. Standard reply letters have been written and printed to handle the majority of problems and questions that arrive each day in the mail."

There will be a special meeting of the Board of Directors starting September 30 in Santa Clara. All Eastern Region clubs are requested to pass on agenda items, etc. to either Bob Ramsdell or to me. Other readers can of course pass on their inputs to their respective regional directors. &

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WAP TUTORIAL REGISTRATION

A WAP tutorial on Personal Finance Programs will be taught by Ms Robin O. Oegerle. She is President of Financial Strategies Incorporated.. It will be held on Saturday, September 11, 1982, 9:00 A.M. to 12:30 PM, in room 2017A at USUHS on Jones Bridge Road (on the campus of the Bethesda Naval Medical Center) in Bethesda, MD. Check the club phone and ABBS for any change in details.

The fee is \$15 if you bring your APPLE; \$30 if you do not.

Please add \$5 to the fee if you are not a WAP member.

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I will bring an Apple, etc. (fee \$15, WAP Membership Number _____) Non-member + \$5. _____
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Please return application and check made out to "Washington Apple Pi" to:

Joe Silverman
14405 Tarbon Terrace
Silver Spring, MD 20904

A WAP tutorial on Assembly Language will be taught by Tom Warrick, who is our ABBS. It will be held on Saturday, October 16, 1982, 9:00 AM to 12:30 PM, in room 2017A at USUHS on Jones Bridge Road (on the campus of the Bethesda Naval Medical Center) in Bethesda, MD. Check the club phone and ABBS for any change in details.

The fee is \$15 if you bring your APPLE; \$30 if you do not.

Please add \$5 to the fee if you are not a WAP member.

Name _____

Daytime Phone _____ Evening Phone _____

Check one;

I will bring an Apple, etc. (fee \$15, WAP Membership Number _____) Non-member + \$5. _____
I will not bring an Apple (fee \$30, WAP Membership Number _____) Non-member + \$5. _____

Please return application and check made out to "Washington Apple Pi" to:

Steve Stern
6921 Old Stage Road
Rockville, MD 20852

Tom Woteki has agreed to teach a four-session tutorial in November. We are interested in whether members want a basic level tutorial or an advanced level which would be a follow-on to his tutorial on Pascal last Spring. Please call Dr. Woteki at 547-0984.

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introduced
the apple to
Adam**



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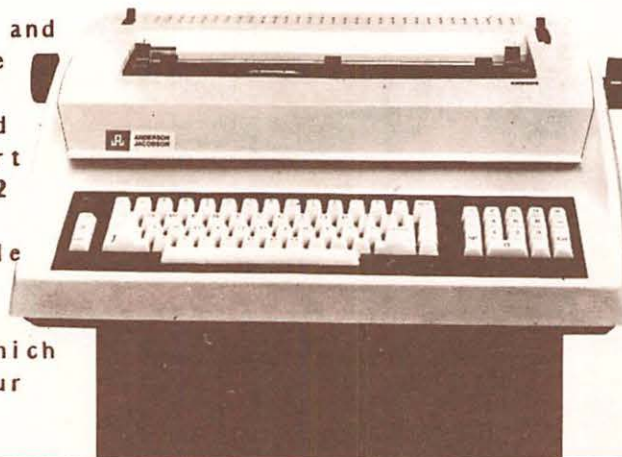
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