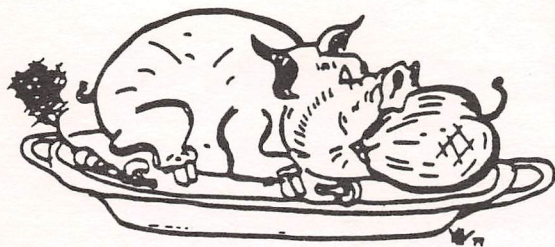


H.A.A.U.G.



HOUSTON AREA APPLE USERS GROUP

THE APPLE BARREL

Price \$2.00

VOLUME 6, NO. 4, 1983

PRESIDENT, Steve Knouse

EDITOR, Mike Kramer

VICE PRES., Clark Johnson

Circulation 1150

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HAAUG APPLE BARREL

CLUB NOTES

MEETING SCHEDULE

The HOUSTON AREA APPLE USERS GROUP holds a general business meeting the second Thursday of each month in the rear chapel of Memorial Lutheran Church, 5800 Westheimer beginning at 6:30 P.M. A meeting featuring tutorials, access to the HAAUG software library, and special interest group sessions is held beginning at noon the third Saturday of each month at the UT School of Public Health in the Med Center at 6905 Bertner at Holcomb.

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The APPLE HOTLINE provides an easy means for the general public to learn of meeting topics, news, etc., and can also be used by members to obtain answers to Apple - related questions. Leave your name, member number (see Apple Barrel label), date, and time. You should get a return call within 48 hours.

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It's a good magazine so don't delay.

MEMBERSHIP INFORMATION

New memberships are \$30 and include the HAAUG starter kit. Renewals are \$20 per year. Make checks payable to Houston Area Apple Users Group and mail to the HAAUG Post Office box, attention Membership Chairman.

CALL FOR ARTICLES

Articles and program listings should be submitted in draft hardcopy form and on disk in Applewriter II or ///, Apple DOS or SOS text, Wordstar, Palantir II OR ///, or Pascal files, or via modem (358-6687). Files should not contain imbedded escape sequences or control characters and should be printed to disk fill justified if possible. Articles must be free of typing or spelling errors and should be grammatically correct as they cannot be retyped. Diskettes will be returned to the author provided his name and address are on them. Text should be printed 45 columns wide, listings 40 columns wide. Authors of published articles will receive two blank diskettes per printed page as compensation. The Apple Barrel reserves the sole right to choose which articles to use.

APPLE BARREL SCHEDULE

The following schedule will be followed for preparation and mailing of the Apple Barrel.
Ads and articles due by 1st of month
Paste ups to printer by the 5th
Mailed by 20th
Received in Houston by 25th
Received in outlying areas by 1st

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Full	Half	Qrtr
Page	Page	Page
1.00	0.60	0.35

Ads should be submitted in camera ready form to H.A.A.U.G. by the 1ST of the month. Charges will be billed and a copy of the Apple Barrel containing the ad will be sent.

EDITOR'S CORNER

Depending on when you receive this issue, I may or may not owe you apologies for getting the Apple Barrel out late. Once in a while it becomes necessary to choose between one's own needs and those of HAAUG. For some time now I have been working on Grade Master, a teacher grade maintenance and reporting package. Faced with final testing, manual preparation, and copying and booting 60 copies in time for wife to take it to Dallas last week to show it at the National Science Teachers' Convention, I took a weeks' vacation and still spent a couple of evenings working until 5 AM to get it done. Needless to say, little time was available to do the Apple Barrel. My apologies to those who stayed up late to get their articles in by the first of the month.

In conjunction with the convention, I attended the monthly meeting of the Dallas Apple Corps and demo'd Grade Master to their Education SIG. The most notable differences between their operation and ours is the emphasis on selling. A number of vendors, including Bob Sander-Cederlof of S-C Software and Mike Lloyd of Wildcat Computing (one of our advertisers), offered a wide range of hardware and software products at reasonable prices. Their software library is also handled quite differently, with David Hurley selling premade disks at a profit and giving the club \$1 per disk. It appeared to work well. Although the Apple Corps pays \$600 a month to use the Jesuit High School facilities, the club takes in about \$400 in disk sales and \$500 or so in vendor table rentals. The other difference was that the exchange newsletters were made available to the members at the meeting. Since our collection still is not at the library, maybe we should try doing the same.

This month we have another good collection of articles. Leading off is a discussion of how to use the Apple's graphics capabilities by a new contributor, Ed Fitchard. Apple /// Peelings discusses a single topic... the generation and configuration of peripheral drivers. Rick Oshlo is back with another offering entitled THE ENVELOPE ADDRESSER which should prove to be quite useful. Bill Muhlhausen continues his series with reviews of DOGFIGHT II, NAPOLEON'S CAMPAIGNS:1813 & 1815, PURSUIT OF THE GRAF SPEE, and CARTELS & CUTTHROATS. Steve Knouse's Apple Slices discusses some of the problems he's been having with the Videx Videoterm I sold him (it was new...honest) and what you should do if you do not get adequate dealer service. Brian Whaley reviews the new word processor, Bank Street Writer, giving it high marks. Last, but hardly least is the second installment of Clark Johnson's discussion of the currently available fast DOS's. His conclusions are quite interesting.

I appreciate the response I received to appeal for advertising and circulation managers for the Apple Barrel. Brian Whaley has been selected to handle ads, whereas Keith McSorley will coordinate matters concerning circulation. With their help, I will be able to concentrate on making further improvements to the Apple Barrel. The others who volunteered will surely be asked to help, so see Brian and Keith.

Finally, my apologies for the typographical error in last issue's Editor's Corner. I'll never criticize anyone's spelling again!

Til next time...Keep those cards and letters coming in.

Mike Kramer

WANT/DON'T ADS

For Sale: BPI General Ledger v1.8, \$225.
Call Ed Carroll at 251-2746.

For Sale: Lobo Dual 8 inch double sided drives with SVA controller for Apple II. Works with CP/M., \$1850, Videx 80 Column and Softswitch \$210, 16K RAM card \$60, Mtn. Computer Romplus with Keyboard filter \$50, Apple Disk II \$310, NEC 8023A Printer with Prometheus Interface \$450.
Call Robin Cox on the HOTLINE.

For Sale: Apple Pascal 1.1 with manuals \$150, Dakin 5 Bookkeeping System \$175, latest PFS & PFS Report \$100, Nibbles Away II \$35, Lisa Educational System \$50, Special Effects \$20, Zoom Grafix \$15, Starcross \$15, MCI Ramplus 32K board \$125, Mathemagic \$20.
Call Ernie Ondrias at 535-5669.

Wanted: Apple II+ and disk drives.
Call Sam Jackson at 437-9340.

For Sale: HeathKit Printer, serial 80 cps, \$200.
Keyboard Co. Numeric Keypad, \$50.
Call Jim Fowler at 462-7096.

For Sale: Videx Enhancer II, Apple Writer II, Videx Preboot Disk. \$???.
Apple Serial Interface, \$50.
Prometheus 128K Ram Card, \$350.
Call Bob Britton at 464-8938.

For Sale: IDS Paper Tiger 440 Printer, \$550
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Vista Vision 80 Column Card, \$250.
Call Ernest Klein at 783-1588.

For Sale: Microsoft 16K RAM Card, \$55.
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For Sale: Apple Writer...make offer.
Call Barbara Nicholson at 965-9220

For Sale: Format II, hardly used, \$100.
Mtn. Computer Introl X/10, \$75.
Epson APL Card, needs ROM, \$25.
Call Mike Kramer at 358-6687.

ANNOUNCEMENTS

SPECIAL INTEREST GROUPS

Members who share interests are encouraged to join or form Special Interest Groups (SIGs). Although some of these groups meet separately from the regular meetings, most meet at the regular Saturday session at the times listed below. If you would like to become involved in a SIG, show up at the appropriate meeting room at the Saturday session or call the HOTLINE for meeting time and location if the SIG is not listed on the schedule.

HAAUG SATURDAY SESSION
SIG ROOM ASSIGNMENTS

TIME	AUDIT	MAIN	RM204	RM208	RM228
NOON	_____	BASIC	CP/M	_____	EDUC
1230	_____	BASIC	CP/M	_____	EDUC
1:00	_____	BASIC	CP/M	STOCK	EDUC
1:30	NEW MEM	BASIC	CP/M	STOCK	EDUC
2:00	GEN MTG	_____	_____	_____	_____
2:30	SPECIAL	SOFTWARE	_____	PASCAL	BUSINESS
3:00	SPECIAL	SOFTWARE	ADVANCED	PASCAL	BUSINESS
3:30	SPECIAL	SOFTWARE	ADVANCED	PASCAL	BUSINESS
4:00	_____	SOFTWARE	ADVANCED	GAMES	APPL///
4:30	_____	SOFTWARE	ASSEMBLER	GAMES	APPL///
5:00	_____	SOFTWARE	ASSEMBLER	GAMES	FORTH
5:30	_____	SOFTWARE	ASSEMBLER	_____	FORTH

SIG CHAIRMEN: CALL GUS AT 481-5329 THE WEEK BEFORE MEETING TO CONFIRM NEED FOR ROOM OR FOR TEMPORARY ROOM ASSIGNMENT.

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Stocks	George Marsden
FORTH	Steve Knouse
BASIC	Glenna Payne
Games	Bill Muhlhausen
Apple ///	Mike Kramer

*
* BUSINESS SIG TOPICS *
* *
* April *
* Word Processing on Apple /// *
* Word Juggler and Palantir. *
* *
* May *
* BPI Accounting Package *
* on the Apple II. *
* *
* June *
* SOURCE - description of the *
* system and use of its *
* database. *
* *

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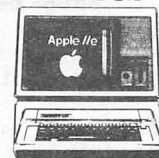
I regret that the advertisement I placed in the last Apple Barrel was worded a little too strongly relative to the capabilities of computer store sales people. The remarks referred to the disturbingly large percentage of the store personnel who indeed know little about what they sell. My mistake was putting it into print. My apologies to those who are capable and helpful to their customers.

Mike Kramer

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LEARNING APPLE GRAPHICS

by E. E. Fitchard

If you want to burst upon the Apple home entertainment software market you have to know something about 6502 graphics. To learn this subject on your own the best approach is to find a good graphics book and devour it. The book I selected is "Apple Graphics and Arcade Game Design", by Jeffrey Stanton. It is published in paperback by The Book Company and sells for \$19.95. The publisher also provide a disk titled "Arcade Graphics Routines W/Bit-Mapping Utility DOS 3.3", priced at \$25.00 containing the programs listed in the book. In his book, Jeffrey Stanton provides a wealth of graphics information ranging from plotting shapes using BASIC programs to bit-mapping using assembly language programs. Along with a brief description of several of the graphics methods which the book explains in detail, I have taken the liberty of providing a few short listings to illustrate a couple of the simpler points. It never hurts to have a few more concrete examples to go along with the technical explanations.

The book begins with a discussion of the Apple screen layout and soft switches. (A soft switch is one which can be turned off or on under program control and is usually activated by one of the commands CALL, POKE, or PEEK).. For example the command HGR actually does five things: 1)It clears the page 1 screen to black. 2)It sets mixed graphics and text mode (which gives you four lines of text at the bottom of the screen). 3)It displays graphics page 1 on the monitor or TV screen. 4)It sets graphic (as opposed to text) mode. 5)It sets the plotting screen to page 1. It is quite useful to be able to do these things independently. In the page flipping example to follow, the program draws on one screen while displaying the other. Neither HGR nor HGR2 will satisfy these requirements, so soft switches must be used. A thorough understanding of this chapter requires only a good foundation in Applesoft and a vague notion of peeks and pokes. The chapter features a program to create shape tables. The idea of page flipping is also introduced and illustrated with a simple BASIC program. However, there is no example combining page flipping with shape tables to show the reduction in flicker. This will be rectified posthaste.

First we need a shape table. This is generated by Listing 1 which appears to be a mess, but it's not as bad as it looks. It puts a rabbit shape into your computer's memory starting at address location 24576 which in hexadecimal is \$6000 ($24576 = 6X16X16X16 + 0X16X16 + 0X16 + 0$). A quick check of the diagram on page 141 of "The DOS Manual" shows that \$6000 is the first address location above page 2 of high-resolution graphics. Therefore, anything we put there will not interfere with the graphics pictures for either page 1 or 2. These numbers can be generated by Jeffrey Stanton's shape table program or by one of several other similar programs commercially available. If you use

a shape table program, Listing 1 can be replaced with a single BLOAD command. If your programs tend to contain a large number of shapes, it is well worth the money to invest in one of these shape drawing programs. If you don't have a shape table generator, you will have to type in Listing 1. One hint for decreasing errors while typing in this program is to note that the first number after the word poke is the address that the second number is poked into. Therefore the first number increases by one each time.

After entering Listing 1, RUN it. Nothing much happens which is as it should be. You have to enter and RUN Listing 3 before the excitement begins. However, first enter Listing 2, which is a short machine language routine for getting tones out of your Apple. Looking again at pages 140-141 of "The DOS Manual" reveals that this program, which starts at 768 decimal or \$300 ($768 = 3X16X16 + 0X16 + 0$), is in a region of memory which is only needed while DOS is booting. This area of available memory is rather small, 208 decimal or \$D0 ($208 = 13X16 + 0$) memory locations, but our machine language program is only 14 bytes long (one byte takes one memory location) so we have plenty of room. This program is adapted from one in the 1978 "Apple Reference Manual", which run in Integer BASIC. My modified version runs in Applesoft.

Listing 3 is a very short program which displays and moves the rabbit shape we either Bloaded or poked into memory using Listing 1. Lines 6 and 7 initialize the step size and delay between hops. Line 10 tells the computer where the shape table is stored. Before we can move the rabbit, we have to put it on the screen. This is done by lines 20 and 22. Line 20 sets the position size and orientation of the rabbit and line 22 draws it. Next line 30 erases the rabbit and redraws it at a new location determined by the step size. In this case we are only moving it horizontally. It would be easy to change the way the rabbit moves by altering XH and YH in this line. Also, note the three pokes and two CALL 768s. These calls are to the sound routine we poked in via Listing 2. By changing the values poked, the sound used to punctuate the hopping can be changed. Try it! Line 35 checks the rabbit's position to determine if it is at the right side of the screen. If it is, the THEN part of this statement erases the rabbit and sets the x-coordinate back to the left side of the screen. When you make changes to the way the rabbit moves, you may need additional checks to keep the rabbit on the screen. Don't worry about it though. If the rabbit gets off the screen, the computer will tell you with a "parameter out of bounds" error message. Finally, line 36 tells the computer to move the rabbit back to the left edge again. This process goes on ad infinitum. To stop the program type a control-C as usual.

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So there you are - a short graphics program that draws and animates a shape. The flash each time the rabbit hops is quite apparent and eventually becomes annoying. Try decreasing the step size (line 6) to see that this flicker becomes more noticeable. If the shape were bigger, the flicker would be correspondingly exaggerated. This flicker detracts from the quality of the graphics, so a way to avoid it is desirable. The method suggested in the book is to use page flipping. Listing 4 is an example of this technique. It uses the same shape table as Listing 3, but it plots on both graphics pages 1 and 2. The way it works is to plot the rabbit on both pages and then show page 2. This is done in lines 20 to 28. While you are looking at page 2 line 43 makes a sound, erases the rabbit on page 1, redraws it moved to the right one hop, flips from viewing page 2 to viewing page 1, and finally makes a second sound. The page flipping is done by extremely fast machine language subroutines in the Apple monitor. Since the rabbit has already been drawn on page 1, you don't see the flash caused by erasing and redrawing it before your eyes. In line 46 the program goes through the same steps as line 43 with the page numbers reversed. This process is continued indefinitely by the GOTO 43 in line 50. Line 44 checks to see if the rabbit is at the right side of the screen. If it is, the THEN part of this line erases both rabbits and starts again at the left edge of the screen.

After the shape table, page flipping, and other elementary techniques are discussed, the book goes immediately into assembly language programming. Chapter two presents a well written introduction to assembly language programming with examples in low-resolution graphics. Although this is only an introduction, it is easy to understand and you will see the graphical results of your efforts almost immediately. The chapter ends with an assembly language program that contains the essence of the breakout game which almost everyone is familiar with. Following this, the book moves on to Hi-Res graphics in chapter 3. The finale for this chapter is an assembly language program which animates a shape table shape. Then, in chapter 4 the author explores the details of producing Hi-Res colored shapes. By this time the assembly language programs are becoming both numerous and lengthy. Unless you don't mind doing a lot of code entering or unless you only intend to casually thumb through the book, the graphics disk becomes extremely valuable.

Chapter 5 introduces the very important technique of bit-mapping. This is a method of producing and animating shape made up of more than one color. A detailed explanation of this advanced technique is given. The author delves into the complicated problem of odd and even horizontal offsets. (For example, if you simply move a colored shape one pixel or one byte, i.e. an odd number of pixels, horizontally, the colors will change). This difficulty can be demonstrated

using our shape table and animation program. In Listing 3 set the SCALE to 2 and RUN the program. Now the rabbit is not only twice as large, but it is changing color with each hop. If you make the step size an even number, the rabbit will remain one color. Chapter 5 is by far the most difficult in the book, but it is also one of the most useful. However, it is not necessary to understand it completely to use the bit-mapping utility contained on the disk. The program is menu driven so one can produce shapes with no knowledge of how bit-mapping works. The output is a set of tables which must be stored in memory along with an assembly language routine to map the table numbers onto the graphics memory area. One of the programs given in the book can be used or modified to produce the graphics effect you are interested in. The bit-mapping program works excellently, but it has one major drawback. The tables it outputs (there can be as many as seven tables for one shape depending on how small the step size is) is sent to the monitor screen or the printer but not to the computer memory or disk. I have looked high and low for a way to put these tables directly on the disk, but have been unable to find one. It seems you are forced to type the tables into the computer and then load them onto the disk. This can be a very tedious task for only one shape using one odd and one even table and would be very time consuming if you wanted to have, say, ten shapes in your program. I called Jeffrey Stanton to ask about this problem. He said that it is introduced by the compiler (which by the way made the program run nine times faster). Perhaps if there is enough interest someone will rectify this difficulty.

The remainder of the book, chapters 6, 7, and 8, uses the techniques discussed earlier in the book to produce some of the graphics effects used in arcade games. Again a number of assembly language examples are presented and the explanations are very good.

In conclusion the book "Apple Graphics & Arcade Game Design" and the disk "Arcade Graphics Routines W/Bit-Mapping Utility DOS 3.3" are well written and contain a plethora of information. I highly recommend both of them to anyone interested in learning about graphics techniques on the Apple computer. The book covers the difficult topic of Apple 6502 graphics thoroughly and is surprisingly free of errors for such a technical subject. If you expect to gain much from it, you will have to invest a considerable amount of time studying the programs and techniques. It's a good idea to try modifying the programs to see if you really understand them. Although the book is a good beginning it is not going to make you a professional graphics programmer, nor is the disk a complete solution to all your animation problems. However, if you study this material, you will certainly be able to impress your friends and yourself with your knowledge of page flipping, bit-mapping, color offset problems, etc., and you will have taken a major step in becoming a serious Apple animated graphics programmer.

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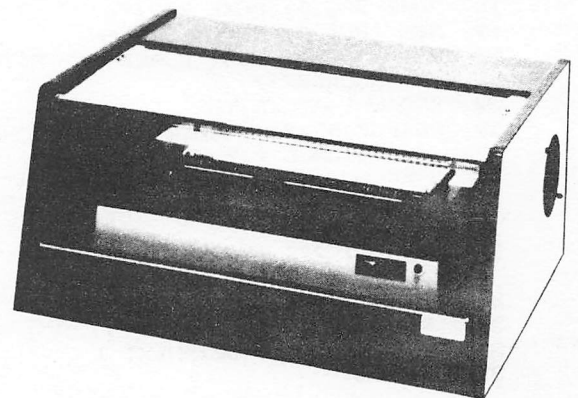
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99 REM POKE IN RABBIT SHAPE
100 POKE 24576,1: POKE 24577,0: POKE
    24578,4: POKE 24579,0: POKE
    24580,15: POKE 24581,24: POKE
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    24625,54
150 POKE 24626,54: POKE 24627,54
    : POKE 24628,62: POKE 24629,
    36: POKE 24630,36: POKE 2463
    1,36: POKE 24632,188: POKE 2
    4633,62: POKE 24634,36: POKE
    24635,00
160 END

200 REM POKE IN SOUND
210 POKE 768,166: POKE 769,7: POKE
    770,164: POKE 771,6: POKE 77
    2,173: POKE 773,48: POKE 774
    ,192: POKE 775,136: POKE 776
    ,208
220 POKE 777,253: POKE 778,202: POKE
    779,208: POKE 780,245: POKE
    781,96
230 END

1 REM SHAPE DRAWING PROGRAM
5 HGR
6 ST = 3
7 DE = 20
9 REM SHAPE TABLE AT $6000
10 POKE 232,0: POKE 233,96
19 REM PUT SHAPE ON SCREEN
20 XH = 25:YH = 133: SCALE= 1: ROT=
    0: HCOLOR= 7
22 XDRAW 1 AT XH,YH
30 POKE 7,50:X1 = XH:Y1 = YH: POKE
    6,90: CALL 768:XH = XH + ST:
    XDRAW 1 AT X1,Y1: XDRAW 1 AT
    XH,YH: POKE 6,70: CALL 768: GOSUB
    300
35 IF XH > 273 THEN XDRAW 1 AT
    XH,YH: XH = 15: GOTO 22
36 GOTO 30
300 REM DELAY SUB
310 FOR I = 1 TO DE: NEXT I
320 RETURN
    
```

```

5 HGR : HGR2
10 POKE 232,0: POKE 233,96
18 DE = 5
19 ST = 6
20 XH = 15:YH = 133: SCALE= 1: ROT=
    0: HCOLOR= 7
21 XI = 15 + ST / 2:YI = YH
22 POKE 230,32: REM DRAW ON PAG
    E 1
23 XDRAW 1 AT XH,YH
24 POKE - 16300,0: POKE - 1630
    2,0: REM SEE PAGE 1/FULL
25 POKE 230,64: REM DRAW ON PAG
    E 2
27 XDRAW 1 AT XI,YI
28 POKE - 16299,0: REM SEE PAG
    E 2
40 REM ITERATE
43 POKE 7,50:X1 = XH:Y1 = YH: POKE
    6,90: CALL 768:XH = XH + ST:
    POKE 230,32: XDRAW 1 AT X1,
    Y1: XDRAW 1 AT XH,YH: POKE -
    16300,0: POKE - 16302,0: POKE
    6,70: CALL 768: GOSUB 300
44 IF XH > 273 THEN XDRAW 1 AT
    XH,YH: POKE 230,64: XDRAW 1 AT
    XI,YI: GOTO 20
46 POKE 7,50:X2 = XI:Y2 = YI: POKE
    6,90: CALL 768:XI = XI + ST:
    POKE 230,64: XDRAW 1 AT X2,
    Y2: XDRAW 1 AT XI,YI: POKE -
    16299,0: POKE 6,70: CALL 768
    : GOSUB 300
50 GOTO 43
99 END
300 FOR I = 1 TO DE: NEXT I: RETURN
    
```

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By Mike Kramer

GENERATING A NEW DRIVER INTO THE SYSTEM**THE INITIAL SHOCK**

When my office Apple /// arrived a little over a year ago, everyone was anxious to see what it could do. This naturally included seeing it print something. After impressing everyone with being to enter a simple Visicalc spreadsheet without reading the manual, I lost all credibility when it wouldn't print anything on the Epson printer. After they left, I got out the owner's manual and discovered that Apple /// software normally comes configured for serial printers connected to the builtin serial port. For me to print on the Epson printer connected to the Universal Parallel Interface Card (commonly called a UPIC) in Slot 1 I needed to install and configure a parallel driver. What's more, I needed to do this with every boot disk I had or would ever have. What I didn't realize at that point is that the source of my difficulty was one of the outstanding features of the Apple ///. That feature is the ability to write programs with little regard to what kind of output device would be used (also known as device independent I/O). Without the programmer knowing ahead of time where program output will go, output from Apple /// programs can be directed to a printer, the screen, a named disk file, etc., at run time. The price we pay is having to generate appropriately configured drivers into any new software we get. Not much of a price when you know how, and you should know how to install drivers if you intend to use an Apple ///. This is particularly so since generating drivers for the Apple /// is not something the typical store person knows very much about (there are exceptions, however). So after this rambling introduction, get out your Standard Device Drivers Manual and, if you have one, the UPIC Parallel Interface Installation and Operating Manual, and let's find out how to do it.

WHAT IS A DRIVER?

First, let's review what a driver does. The Standard Device Drivers Manual describes peripheral devices such as the keyboard, video display, speaker, and input/out (I/O) ports as the senses of the computer, i.e., the eyes, ears, etc. These senses are connected to the Sophisticated Operating System (SOS) by device drivers which perform four functions:

- Process data generated by programs and send it to the devices as output.
- Processes data generated by the device and send it to programs as input.
- Permits programs and SOS to control the device and the driver itself.
- Permits programs and SOS to read the status of the device and the driver

Most of you don't need to be concerned with the specifics of what the drivers do, but it should help your understanding if you are generally aware of what they do and why they are there.

SYSTEM CONFIGURATION PROGRAM

One of the disks provided with the Apple /// is the System Utilities Disk, which includes the System Configuration Program (SCP). This is the tool for adding or removing device drivers, or changing the parameters that control their operation. You may have noticed when cataloging disks that every bootable disk has three special files named SOS.KERNEL, SOS.DRIVER, and SOS.INTERP. SOS.KERNEL is SOS itself. SOS.INTERP is the machine language "interpreter" which runs on bootup. This can be Business BASIC, Pascal, Apple Writer ///, Visicalc, etc. Unless you become very, very good with the Apple /// you will never create your own SOS.INTERP. SOS.DRIVER contains the system configuration, including the drivers and their control parameters, the number of disk drives connected, the video display character set, the ASCII character codes assigned to each key on the keyboard, and the slot assignments for any interface cards plugged into the connectors inside the Apple.

READING A DRIVER FILE

Place the Utilities diskette in the builtin drive and boot it. Next run the SCP by moving the cursor to the third line and pressing RETURN. To look at and possibly change any of the information defining how your Apple /// operates, tell the SCP to READ in the SOS.DRIVER file from the diskette of interest by placing the "cursor" over "Read a Driver File" and pressing RETURN. Why not read in the SOS.DRIVER file from the Utilities diskette itself and configure it (you are using a copy, aren't you?) so that you can list directories on your printer rather than always listing on the screen. The SCP defaults to .D1/SOS.DRIVER, so all you have to do is press RETURN. To read from a disk in the external drive, change .D1 to .D2 before pressing RETURN.

After a few seconds, the current driver configuration will be displayed on the screen as shown on Page 12 of the Standard Device Drivers Manual. Note that each driver has a unique name beginning with a period. A driver can have any name as long as it begins with a period followed by a letter, is not more than 15 characters long, and contains only letters, numbers, and periods. Also note that an asterisk in front of a driver name means that driver is included in the driver file but is inactive. When flagged as inactive the driver is not loaded into memory on bootup and cannot be accessed during program execution. The benefit of doing this is that you don't use up memory with drivers you are not currently using.

When you have finished reading the driver names press ESC to return to the SCP menu.

EDITING DRIVER PARAMETERS

Next select the "Edit Driver Parameters" option on the SCP menu. The driver file you read into memory earlier probably had a driver named .PRINTER. On a new boot disk this is most likely a serial driver. You can find out what it is by moving the cursor to highlight .PRINTER and pressing RETURN. You will then see a display which lists the device name, the type, the subtype, the activity status, comments, and driver configuration block information. At this point you are interested in whether the device is serial or not. You can usually assume .PRINTER is serial if the slot is indicated as "n/a", which indicates .PRINTER has been assigned to the builtin port. Unfortunately, few people bother to use the comments line to document in English how the drivers were configured.

If you are installing a parallel driver, you will probably name it .PRINTER, since this is generally accepted as the name of the most commonly used driver. Rather than delete the serial driver, give it another name such as .SPRINTER and deactivate it. You may want to use it later when you get your serial letter quality printer. While you're at it, use the comments line to indicate that this is a serial driver.

ADDING A DRIVER FILE

Assuming you are adding a parallel driver, insert the disk included with the UPIC card in one of the drives (we'll assume Drive 2). Press ESC twice to exit the Edit Driver Parameters display and return to the SCP menu. Once again select the "Read a Driver File" option. This time, when asked for the pathname of the driver file, type ".D2/PRINTER.DRIVER". This will cause the parallel printer driver file to be read from the UPIC disk. PARALLEL.DRIVER is intended for communication between computers using a parallel interface and should not be used. Note that the new driver's name has been added to the end of the list of drivers and that you may have two drivers with the same name. Press ESC to return to the SCP menu.

CONFIGURING THE NEW DRIVER

The next step in this adventure is to configure the parallel driver for your particular printer and tell SOS in which slot your parallel interface card has been installed. To configure the driver, once again select "Edit Driver Parameters". The driver name will be .PRINTER, so you will probably have no need to change it. It will also be active. You should make an entry in the comments line to indicate what printer you are using. Now for the hard part, tailoring the values in the Configuration Block for your printer. The Configuration Block can contain up to 255 values arranged

in up to 16 rows of 16 values (the last row has 15). These values are used with serial drivers to specify baud rates, with the Silentype to control heating of the dots in the print head, etc. With the parallel driver, five values are used to tell the driver (1) what control signals in the cable are to be monitored, (2) what the normal values are, (3) whether the printer generates its own line feeds, (4) the polarity of the printer handshake signals, and (5) the printer response timeout. To find out what these values should be for your printer, look on Page 19 of the UPIC manual. Enter these values into the Configuration Block. If you do not see your printer listed, try using "00 00 00 00 0A". Press ESC to return to the parameter list. When you are satisfied that they are all correct press ESC to return to the SCP menu.

CHANGING SYSTEM PARAMETERS

All that remains is to tell the system where the parallel card is installed. This is done by selecting the "Change System Parameters" option. You will be shown a list of the current system parameters. Select the "Peripheral Slot Assignment" option to list the slot assignments. Most assignments will say "n/a", indicating builtin slots. To change a slot assignment, enter the number of the driver as shown on the display. When asked for the slot assignment, type it in. If you are unsure of the slot assignment, look at the openings in the back of the Apple and see which one has a filler plate labelled "Universal Parallel Printer Interface". From the rear, Slot 1 is on the right.

Note that it is possible to have two or more drivers assigned to the same slot. This would be done, for example, if you wanted to use both a dot matrix printer as a draft printer and a letter quality printer from the same program using the same interface and a switch box.

Press ESC to return to the listing of the Current System Parameters. Press ESC to return to the SCP menu.

GENERATING A NEW SYSTEM

The final step is to generate a new system that incorporates the new configuration information and install it on the disk. Select "Generate New System". There are two functions performed in system generation, validation of the configuration and storing of the new configuration on the disk. When validation is successfully completed, you will be asked for the name of the file where the new configuration is to be saved. You do not have to name the file SOS.DRIVER at this point. In fact, you can create a disk containing nothing but system configurations for different applications and transfer these to your boot disks as needed. They do have to be named SOS.DRIVER to be loaded on bootup and used. If you decide to store the driver file on your disk under the name SOS.DRIVER and a file exists under that name, the SCP

will ask if you want to replace it. If you answer yes, the old SOS.DRIVER will be lost. You might want to name it NEW.DRIVER at this point and preserve the original SOS.DRIVER file. When System Generation is complete, select the "Quit" option. If you have not performed a generation, a warning will be given and you will have to indicate that this is what you want to do.

If you preserved the original SOS.DRIVER but want to try the new configuration, enter the Filer section of the Systems Utility and rename SOS.DRIVER something like OLD.DRIVER. Then change the name of NEW.DRIVER to SOS.DRIVER. If all went well, you should be able to print on your parallel printer when you reboot using the modified boot disk. If the printer doesn't work, start over and pay close attention to which parallel driver is read in, what slot is specified, and what Configuration Block information is entered. If the printer prints, but does strange things, the Configuration Block is likely the problem.

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THE ENVELOPE ADDRESSER

An Elementary Programming Exercise
by Rick Oshlo

This little program was written to solve a basic problem I had with word processors. I could prepare and print out a professional looking letter trying to convince someone to do something nice for me. But then I would find myself scrawling the address on the outside with an old fashioned pen! Being the proud owner of a printer that would handle both friction feed and mailing labels, I figured that there had to be a better way. Of course you can address envelopes using the word processor; however, I found this to be cumbersome from a formatting standpoint. Thus the evolution of this little routine.

The program will put three or four address lines on either an envelope or a label. When using envelopes, you have the option of including or omitting a return address. A return address label can be prepared by simply typing "FROM" as the first address line. It uses a machine language Input routine that accepts commas, colons, and most of those other things that cause the standard INPUT command to choke out an "Extra Ignored" message. The routine is NOT intended to demonstrate elegant programming or to impress Steve Knouse's "Wireheads". But it does serve a practical purpose for me and will provide those trying to develop their Basic programming skills something to tinker with since each user's specific printer codes and return address must be inserted into the code.

The program was written to run on an Apple II+ equipped with a Videx Keyboard Enhancer II for lower case entry and display. It supports an NEC 8023A printer with a parallel interface card in Slot 1. If you have the same hardware then punch it in as it is except for inserting your own return address in lines 195 and 320 - 330. Be sure that the Enhancer file "KEYFILTER" is on the same disk. For the majority with different hardware, here are some comments on the listing:

Listing format:

1. The listing has multiple statement lines broken at the colons and each statement on a separate line.
2. An asterisk indicates that the statement on that line follows an "IF" statement on a previous line and will be executed only when the "IF" condition is met.

If you do not have a Keyboard Enhancer then:

1. Delete line 60 - This line installs the Enhancer routine that skirts around the Monitor upper case conversion routine.
2. Delete the "Call 1013" in line 450. This call reconnects Keyfilter. It gets "disconnected" when the printer slot is accessed.

3. If you do not have an Apple IIE or some other method of entering lower case then you can delete the lower case portion of the conditional statements in lines 90, 110, 130, 150, 160, 195, 240, 241, 280, 290, 300, 310, 432, 435, 442 & 450. Each of these lines tests for both upper case and lower case responses from the keyboard. Since upper and lower case letters have separate ASCII codes, the Apple does not recognize a "Y" and a "y" as being the same thing.

Printer Codes:

1. The NEC printer will support a variety of print styles. The program is set up to accommodate Pica and Elite print in both Enhanced and Normal modes. Once you decide what print options you want to use, you will have to set them up in the program. Your printer manual should provide you with both the options and the control codes necessary to turn them on and off.
2. Change the print statements lines 90 and 110 to ask the right questions.
3. Line 270 turns on the printer with a ctrl-D PR#1 (assuming that your printer card is in slot 1). The "CHR\$ (9) "J" [ctrl-I J] tells my interface card to not print to the screen. Many interface cards use ctrl-I 80N [CHR\$ (9) "80N"]. The CHR\$ (27) CHR\$ (78) [ESC N] and CHR\$ (27) CHR\$ (34) [ESC "] puts the NEC into normal pica print (its default conditions). This done just in case some previous printing job left the printer in a non standard condition. This is done again in line 420 prior to turning the printer off with a ctrl-D "PR#0" to make sure the printer ends up in its default mode.
4. Line 280 issues an ESC E to turn on the Elite print style if it was requested in line 90.
5. Line 290 issues an ESC ! to turn on Enhanced print if it was requested in line 110.
6. Notice that the PRINT statements in lines 270 - 290 end with a semicolon to prevent a carriage return and line feed from being sent to the printer.

Miscellaneous Comments:

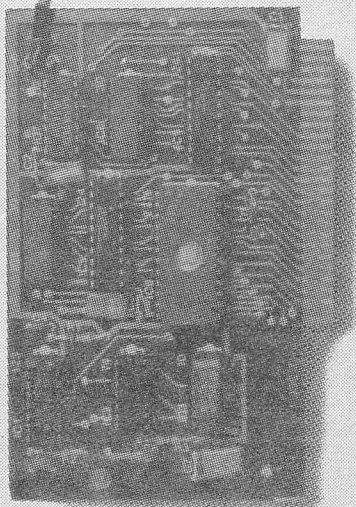
1. Line 35 is a reminder to me to turn off the "Paper Empty" switch that I installed in my printer. Many printers have a Paper Empty function to stop printing in case you run out of paper. The problem with most of them is that you cannot print closer to the bottom of the last page than 1 1/2 inches before the sensor is triggered. This presents a problem with small envelopes etc.
2. A "GET" is used in several lines rather than an "INPUT". It is handy when a single keystroke response expected since the function does not wait for a RETURN. It has the advantage of

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speeding up entry but the disadvantage of not giving you an opportunity to change your response. Wherever you see it, you can replace it and the preceding PRINT statement with an INPUT command if you prefer.

3. Lines 500 - 510 poke the machine language INPUT routine into memory. It is utilized by a CALL IN command (where IN = 745) in lines 190 - 230. If you try to use it in other programs, be sure to include the MID\$ (IN\$,1) command also.
4. The CHR\$ command is an easy way to send any ASCII character from within a program. I like it since many control codes are non printing and I much prefer something like D\$ = CHR\$ (4) in a program to D\$ = "": REM CTRL D.

HAVE FUN COMPUTING!

NEC ENVELOPE & LABEL ADDRESSER

```

10 REM XXENVELOPE ADDRESS PRINTER
15 GOSUB 500
20 HOME
30 VTAB 2
: INVERSE
: PRINT " ENVELOPE & LABEL ADDRE
  SSING ROUTINE "
: NORMAL
35 PRINT " (Need to turn off printe
  r PE switch?)"
40 D$ = CHR$ (4)
50 POKE 216,0
: POKE 23104,128
60 PRINT D$"BRUN KEYFILTER"
70 VTAB 7
: FL = 0
80 S% = 25
90 PRINT " PICA OR ELITE PRINT?..
  .....";
: GET P$
: IF P$ < > "P" AND P$ < > "p"
  AND P$ < > "E" AND P$ < > "e
  " THEN PRINT CHR$ (7)
* : VTAB 7
* : GOTO 90
100 PRINT P$
110 PRINT " ENHANCE THE PRINT?....
  .....";
: GET E$
: IF E$ < > "Y" AND E$ < > "N"
  AND E$ < > "y" AND E$ < > "n
  " THEN PRINT CHR$ (7)
* : VTAB 8
* : GOTO 110
120 PRINT E$
130 PRINT " USING ENVELOPE OR LABE
  L?.....";
: GET X$
: IF X$ < > "L" AND X$ < > "E"
  AND X$ < > "1" AND X$ < > "e
  " THEN PRINT CHR$ (7)
* : VTAB 9
* : GOTO 130
140 PRINT X$
150 IF X$ = "L" OR X$ = "1" THEN S%
  = 2
* : GOTO 180
  
```

```

160 PRINT " WANT RETURN ADDRESS PR
  INTED ?...";
: GET R$
: IF R$ < > "Y" AND R$ < > "N"
  AND R$ < > "y" AND R$ < > "n
  " THEN PRINT CHR$ (7)
* : VTAB 10
* : GOTO 160
170 PRINT R$
180 VTAB 12
190 PRINT "1.Addressee: ";
: CALL IN
: N$ = MID$ (IN$,1)
: IF FL = 1 THEN 240
195 IF LEFT$ (N$,4) = "FROM" OR
  LEFT$ (N$,4) = "From" THEN N
  2$ = "E.L. Oshlo"
* : A$ = "20603 Denford Court"
* : C$ = "Katy"
* : S$ = "Texas 77450"
* : GOTO 249
200 VTAB 13
: PRINT "2.2nd Line.: ";
: CALL IN
: N2$ = MID$ (IN$,1)
: IF FL = 1 THEN 240
210 VTAB 14
: PRINT "3.Address...: ";
: CALL IN
: A$ = MID$ (IN$,1)
: IF FL = 1 THEN 240
220 VTAB 15
: PRINT "4.City.....: ";
: CALL IN
: C$ = MID$ (IN$,1)
: IF FL = 1 THEN 240
230 VTAB 16
: PRINT "5.State-Zip: ";
: CALL IN
: S$ = MID$ (IN$,1)
: IF FL = 1 THEN 240
240 VTAB 20
: CALL - 868
: PRINT " ALL OK? ";
: GET AN$
: PRINT
: IF AN$ = "Y" OR AN$ = "y" THEN
  250
241 IF AN$ < > "N" AND AN$ < > "n"
  THEN 240
242 VTAB 20
: CALL - 868
: PRINT " CHANGE WHICH LINE? ";
: GET AN$
: PRINT AN$
: AN = VAL (AN$)
: IF AN < 1 AND AN > 5 THEN 242
243 FL = 1
: ON AN GOTO 180,200,210,220,230
249 VTAB 16
: PRINT "RETURN ADDRESS LABEL PRI
  NTER"
250 VTAB 20
: CALL - 868
: PRINT "XXINSERT ENVELOPE OR LAB
  EL & PRESS PXX";
260 GET PP$
: PRINT
270 PRINT CHR$ (4);"PR#1"
  
```


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```

: PRINT CHR$(9)"J"; CHR$(27)
  CHR$(78) CHR$(27) CHR$(34
  );
280 IF P$ = "E" OR P$ = "e" THEN
  PRINT CHR$(27) CHR$(69);
290 IF E$ = "Y" OR E$ = "y" THEN
  PRINT CHR$(27) CHR$(33);
300 IF X$ = "L" OR X$ = "l" THEN 370
310 IF R$ < > "Y" AND R$ < > "y"
  THEN 350
320 PRINT "20603 Denford Court"
330 PRINT "Katy, Texas 77450"
340 GOTO 360
350 PRINT
: PRINT
: PRINT
360 FOR I = 1 TO 6
: PRINT
: NEXT
370 PRINT SPC(S%);N$
380 IF N2$ < > "" THEN PRINT SPC(S%
  );N2$
390 PRINT SPC(S%);A$
400 PRINT SPC(S%);C$;";";S$
410 PRINT
420 PRINT CHR$(27) CHR$(78) CHR$(
  27) CHR$(34)
425 PRINT CHR$(4)"PR#0"
430 VTAB 20
: CALL - 958
432 PRINT SPC(3)"PRINT THE SAME ADD
  \RESS AGAIN? ";
: GET AN$
: IF AN$ < > "Y" AND AN$ < > "N"
  AND AN$ < > "y" AND AN$ < >
  "n" THEN PRINT CHR$(7)
* : GOTO 432
433 PRINT
435 IF AN$ = "Y" OR AN$ = "y" THEN
  CALL 1013
* : GOTO 240
440 VTAB 20
: CALL - 868
442 PRINT SPC(3)"PRINT A DIFFERENT
  ONE? ";
: GET AN$
: IF AN$ < > "Y" AND AN$ < > "N"
  AND AN$ < > "y" AND AN$ < >
  "n" THEN PRINT CHR$(7)
* : GOTO 442
445 PRINT
450 IF AN$ = "Y" OR AN$ = "y" THEN
  VTAB 3
* : CALL - 958
* : CALL 1013
* : GOTO 70
460 HOME
470 END
499 REM MACHINE LANGUAGE "INPUT ANY
  THING" ROUTINE POKER
500 IN$ = "X"
: FOR I = 745 TO 767
: READ J
: POKE I,J
: NEXT
: IN = 745
: RETURN
510 DATA 162,0,32,117,253,160,2,13
  8,145,105,200,169,0,145,105,
  200,169,2,145,105,76,57,213

```

GAME REVIEWS

by Bill Muhlhausen

DOGFIGHT II
PRODUCT OF MICRO LAB

This game has several options but it is basically a human against the computer type shoot them up. The options are one or two humans against the computer either on the same or different sides, antiaircraft fire, or your own game set up. There are both jets and helicopters available for use and you may set the speed of play. You have the option of selectively removing the sounds the program makes. This game may be run with keyboard only, one or two joysticks or paddles.

Though the program seems to have a lot going for it the color graphics are at best crude. Simple figures such as those in the early Startrek arcade game are the order of the day in this program. The controls do not have a very fast response time and are difficult to handle. Getting multiple players at the computer at the same time becomes tedious. I personally would not want this game in my own library because I like better graphics and ease of play. I am sure that there are those members who prefer a real challenge in computer gaming no matter how the graphics look.

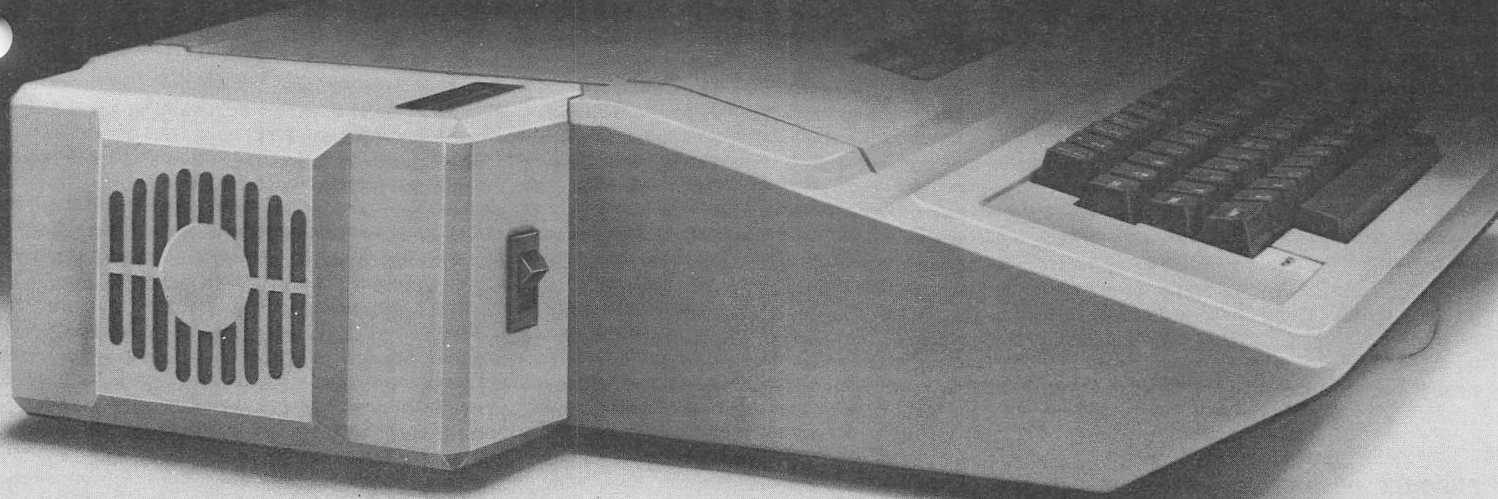
NAPOLEON'S CAMPAIGNS:1813 & 1815
PRODUCT OF STRATEGIC SIMULATIONS INC.

This product makes a attempt to simulate actual battle conditions and movement that prevailed at the time of occurrence. Weather, terrain, intelligence, fatigue, casualties, and commander's leadership ability are all factors that influence combat and movement. The rules take about 30 minutes to read. The color maps, counters, and graphics are all of good quality.

SSI has accomplished realism at the cost of playability. You are required to make up orders for many turns in advance. These orders may be changed but if the unit containing the commander in chief is not rather close by it is not likely that the orders will get acted on in time to accomplish anything useful. In fact the game allows the possibility of your orders being disobeyed. Another problem I found was useless difficulty in calculating the relative strength and weakness of the contending armies. A complicated formula is included to permit this to be done. Personally I thought the computer could do this in much shorter time or relative strengths could be furnished by the authors. In my opinion using the formula was not worth the effort. In this game you move whole corps instead of individual units of the corps. Because of this you may not move artillery unless you also move cavalry and infantry. This forces whole armies to battle. You may

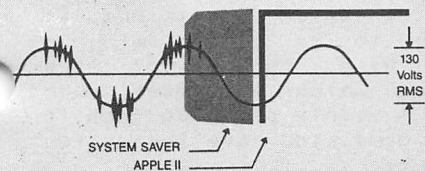
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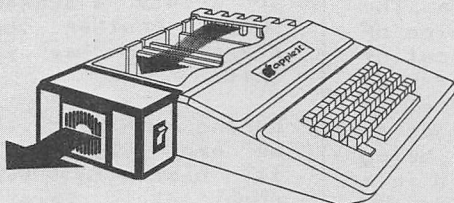


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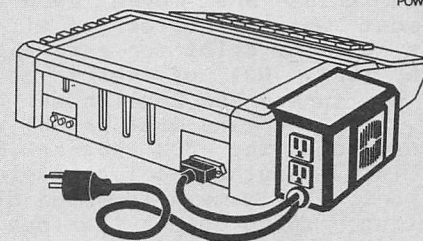
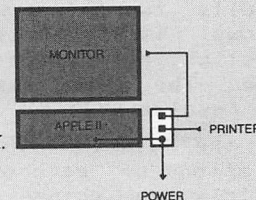
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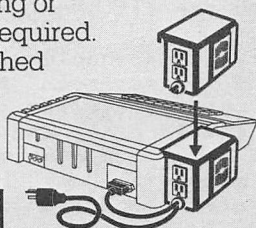
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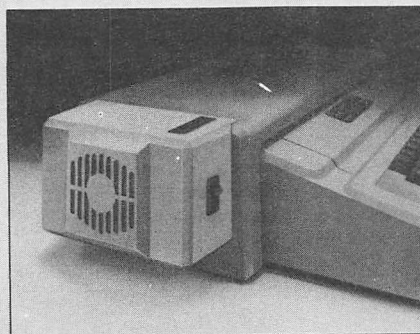
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not detach a part of a corps and try to outflank a opponent. This eliminates strategy such as might be used in another SSI game, THE BATTLE OF WATERLOO, which is very well balanced and to some extent simulates chess. You are not allowed to watch the battle resolutions as you are in the previously mentioned game. You may save a game for future play.

In conclusion I found that unless you enjoy watching the computer play itself or are a big fan of Napoleonic miniatures which may be used with this program then this package is a big \$60 dud. For those of you who do enjoy vicarious gaming or are miniatures fans the program would possibly be appealing.

PURSUIT OF THE GRAF SPEE
Product of Strategic Simulations

This is a realistic recreation of the early World War II hunt by the English Navy for a German pocket battleship. It has good color graphics and allows for solitaire or two player games. There are four levels of difficulty available. A game may be saved and finished later. Players may allow the computer to resolve the combat or use any other resolution method and plug in the results to the computer. The second option allows for use of naval miniatures. No joystick or paddles are needed to play the game. The game can be ended at any time and the results will be totaled up at that point

At the start of the game both sides know the location of each others forces. This changes rapidly as ships are moved each turn. The English must watch the fuel of all ships or forfeit a victory point for each ship out of fuel each turn. Out of fuel ships may move only on day turns. The English may refuel in any port. The Germans must refuel at sea to avoid chancing the 50% chance of being scuttled in a neutral port or captured in a English port. The game allows for difficulty in spotting ships under various weather conditions. It also allows for the chance of English ships to shadow the German ships. Ships move only one space at a turn no matter what speed they are at. Speed does not affect fuel consumption. Speed does however affect combat effectiveness. The Graf Spee has about double the fuel load of any English ship. It is really frustrating to have a good search pattern and have to return to port to refuel. Both sides receive reports of sinking of unarmed enemy ships. Some of these reports include the ships position. The game takes two to four hours to play. It is best to take 30 minutes to read the instructions before booting the disk. You can however boot the disk and learn only the movement commands and be playing in five or 10 minutes. Should you choose to do this you could easily run out of gas or into a fight you are not ready for.

This game would appeal to those board gamers who enjoy keeping the location of both sides' forces hidden from one another during play.

After one play through you can easily understand the frustration of the English in their efforts to locate the enemy. The game may be a little dull and slow moving for those who look for frequent action almost every round. There are many rounds in which all both sides do is move ships and no action takes place. Those gamers wanting fast action will probably not enjoy this game very much.

The first 500 copies of this games had an error which bombed the program after the last English ship was sunk. The game I had also bombed when the command C used to check status of friendly ships during combat was used. SSI has been cooperative about replacing any faulty disks at no charge.

The price of this game is \$59.95.

CARTELS & CUTTHROATS
PRODUCT OF SPI

This game is for up to 6 players or may be played solitaire with single or multiple computer opponents. The time required to play a 2 year game is about two to three hours. The recommended game of 5 years takes around five to eight hours depending on the number of human players playing. The game does offer a game save feature which works fine and allows a game to be played in sessions. It also allows a game to be played with a printer producing hard copies of the necessary reports on which you base your business decisions. A yearly planning form is furnished with the game. You have the option of allowing the computer to create a scenario or creating one of your own. Another option is allowing all players to see your data or not permitting this.

During our play testing we found the game to be very playable. As with most SPI games it is best to first read the rule book completely. This takes about 30 minutes. This game may be played however by just booting the disk and running it since you are prompted as to the inputs needed. The game makes you president of a corporation. You and your competitors all make the same type of product. The product choices are luxury goods, mixed goods, and necessities. It is up to you to decide on how much to spend on R & D, advertising, and other expenses as well as what price to sell your product at. The game allows for equipment breakdowns, labor troubles, and raw material supply problems. From time to time you will receive proposals for charity donations and other work by outsiders. You can accept or decline these proposals as you see fit.

In playing the various scenarios we found that the selling of necessities to be the hardest to win while luxuries was the easiest. All were challenging and fun to play. We found if six players were not available that it made the game better to have one or more computer companies in play.

The drawbacks to the game are that if computer companies are in play in a open game you never get to see their quarterly data and the computer does not declare who won the game. It does give a ending report of all players net worth. On the positive side the program is very user friendly. It provides for two chances to correct errors in data entry. It is an excellent business simulation and should be of interest to those who don't usually play computer games but enjoy the challenge that the operation of a business presents. It will also be enjoyed by other confirmed computer games players. It could also be used as a teaching tool at the high school and college level to show how the various parts of a business contribute to the success of the whole firm. Overall I feel that this is a fine program that is well worth the \$60.

Software reviewed was provided by the SOFTWARE CENTER OF HOUSTON at 2200 Southwest Freeway.

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APPLE SLICES

By Steve Knouse

Monitor /// and the Videx Videoterm or Cursors, the Bottom Dropped Out

The Monitor /// is a monochrome video monitor capable of displaying 80 columns of text. It has been a part of Apple][+ and the Apple ///e package deals for the past six or seven months. The Videoterm, manufactured by Videx, is a peripheral card which allows an Apple][or][+ to display 80 columns of text. (It can be used in an Apple ///e but Apple's 80 column card costs less and is included in the current \$1995 package.)

There is a problem when using the two together. For some unknown reason (to both Videx and Apple) the 80 column screen display is shifted down and to the left; the last few lines fall off the bottom of the tube. There are two solutions.

One solution is to turn down the vertical gain on the Monitor ///. To do this enable the card with a PR#3, press RETURN enough times to get the cursor on the last line of the display (it won't be visible), then turn the knob labeled V.Size on the back of the monitor down (counterclockwise) until the cursor becomes visible at the bottom of the screen. This scrunches down the screen but doesn't look too bad in the 80 column mode; in the 40 column mode it makes the characters look a bit squashed.

The second solution is to call Videx and ask them to send you version 601 of the Videoterm firmware (the chip that contains the board's machine language instructions). They will send you the chip on your promise to send your old one back after installing the new one. Be aware that if you are using the Videoterm with firmware version 2.3 or earlier, in other than slot 3 you will have a problem; with later versions of the firmware (2.4, 600 and 601) the Videoterm must be used in slot 3.

If you are not comfortable messing around inside your Apple and you bought the Videoterm from a local dealer, ask the store technician to install the chip for you. He should do this for free (this is a personal opinion, not a store policy, and presupposes you bought the Videoterm from that store.)

You can also ask a more technically inclined friend to install it for you or you can bring the chip and the Videoterm board to the Apple Answers desk at the Saturday meeting and ask someone there to help.

To install the chip yourself:

- o Be sure the power is off and the power cord is plugged in.
- o Remove the top of your Apple by grasping the lid and popping it upward and then sliding it toward the back.

- o Touch the case of the power supply to rid yourself of static electricity. (This is why you made sure the power cord was plugged in; to provide a ground path from the case of the power supply.)

- o Remove cable or softswitch cord from the Videoterm.

- o Remove the Videoterm from its slot.

- o The chip to change is on the bottom row of the board, to the right of center and is oriented vertically with the notch toward the top of the board (see chip U3 in the picture on page A-4 of your manual). Remove it by using a small screwdriver to pry up one side and then the other until it comes out. Do not use a chip puller as you will probably pull one side out first, bending some of the pins.

- o Insert the new chip in the socket with the notch toward the top of the board. Be very careful to get all the pins in before pressing the chip into the socket. This can be difficult because a brand new chip will usually have its two rows of pins spread slightly apart. I use a pair of long nose pliers to bend in all the pins in a row at once. You can also grasp the chip at either end and gently press the pins

on the table.

- o Insert the Videoterm back in its slot and attach the cord you removed earlier.

- o Replace the Apple cover.

The Videoterm Softswitch and Pascal Programs
(Specifically PFS: file and Visischedule)
or Where Oh Where Did My Menu Go

The Softswitch is an electronic switch which "automatically" switches between 40 and 80 column display modes. This saves you the trouble of having to swap cables. I put automatically in quotes because it works most of the time (which is to say sometimes it doesn't). An alternative is to get a hardswitch. This takes inputs from the Apple's video-out jack and from the Videoterm or the Softswitch and has an output to the monitor. A single pole, double throw switch selects between inputs. Videx sold this as the Switchplate Assembly or it can be made from parts from your local Radio Shack.

The Pascal language system on the Apple will turn on an 80 column display card in slot 3 if it finds one there. There are Pascal programs (e.g. the PFS series and Visischedule) which run in the 40 column mode on an Apple][and][+. It is the responsibility of the Pascal program to turn



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off the 80 column mode and to turn on the 40 column mode. How they can do this automatically in every case, given the number of different 80 column boards on the market, is beyond me.

When using the PFS series (File, Report and Graph) with a Videoterm and a Softswitch it works; that is except with PFS: File, version B:00. After booting this version I was left with a screen full of small dashed lines - like all the dots that make up the cursor were scattered about the screen - I thought my Videoterm had just croaked. I swapped my monitor cable from the output of the softswitch to the normal video output of the Apple and there was the main menu! If this is a problem for you contact Software Publishing and see if they will swap you for version B:01.

Visischedule acts similarly but the cursor is whole. Once again you must swap cables or flip the hardswitch to see the output.

The moral to this story is if you have a hardswitch, keep it; if you find you need one because of Pascal programs you are running, buy or make one.

On Visischedule and Milestones or Walking the Critical Path

Speaking of Visischedule there is another critical path program on the market called Milestones. Milestones is written to run under CP/M by the same people that wrote Visischedule, Organic Software. I don't know who markets Milestones but Visischedule is marketed by Visicorp.

Organic Software told me that Milestones is a subset of Visischedule. In other words there are things you can do with Visischedule that you can't do with Milestones (e.g. manpower leveling). They said if you have a choice buy Visischedule.

Apple //e's and Microsoft's Softcard or Those Oldies but Goodies

I have heard from more than one person that "newer" Microsoft Softcard's will not work in the Apple //e. (The Softcard is a Z-80 processor card that allows the Apple to run the CP/M operating system.) I don't know what "newer" means but it does not mean all Softcards; I know at least one person (Mike Kramer) who is running an "older" one in his //e.

If you have a //e Softcard combination that doesn't work, check with your dealer to see if he has any more information about the problem or possible solutions. If this doesn't solve the problem then contact Microsoft.

This points out the something I've said before - Be sure to check out new purchases with existing software and hardware.

On Dealer Support and Service or
I'm Mad as H--- and
I'm NOT Gonna Take This Anymore!

There is a publication entitled "Your Guide To Apple Service and Support" available at your dealer. It spells out the steps you should take to get help with service problems and technical questions and what to do if the dealer can't (or won't) help you to your satisfaction.

For service problems take your system to any Authorized Service Center (preferably the dealer from whom you bought it). He should repair or replace any Apple manufactured product which is defective. During the warranty period or during the term of a service agreement this will be done at no charge.

For technical questions first consult your manuals and then your dealer. If he can't answer the question, request he refer it to Apple Technical Support. Note that every dealer has a set of "Technical Notes" which answer many common questions. He also has access to technical support specialists via the telephone.

If your dealer doesn't help you to your satisfaction then you can contact the Regional Service Manager by mail. The address is:

Service Manager
Apple Computer Regional Service Center
1050 Venture Court
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He will need the following information:

1. Model of your Apple system
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7. Your name and phone number
8. The nature of the problem

If Regional Service doesn't solve the problem contact Apple's Corporate Service Department. Send the same information as above to:

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BANK STREET WRITER

A Review

by Brian Whaley

Name a word processor that can be used by both a six year old and a lawyer. Name one that is completely useable in five minutes by a 'computer expert' and in thirty minutes by a 10 year old. Give up? The name of the software is the Bank Street Writer and I am using it to prepare this review.

I thought the new Apple LISA computer was fun to use. Now I have found out the old Apple II can be fun to use as well. You don't need to use reference manuals or remember many terse commands. Using the Bank Street Writer can be as much fun as using the LISA. The designers of the Bank Street Writer (BSW) have achieved their marvelous goal; a word processor that can be used by effectively by all age groups.

The researchers at New York City's progressive Bank Street College of Education decided that in order to find out if word processors would help children write better, they would have to write the word processor themselves. Anyone who has pored through the reams of paper accompanying many microcomputer word processors realizes that much of the ease of using a word processor is offset by the tedium of searching for the correct symbol or instruction to make it perform correctly.

The Bank Street team has succeeded with the BSW. I was using it within five minutes of loading the disk and in another five my six year old was sitting on my lap writing a letter to his grandparents. Although the manual is only 28 pages long, it thoroughly covers everything that the user needs to know. However the manual is nearly superfluous as a five part tutorial is provided on the flip side of the program disk. The manual explains commands for the disk drive, printing, and the utility program. The utility program, which is menu driven as is everything else, sets up certain device dependent parameters.

Having presented the finer aspects of the program, let's examine some of the shortcomings. Unlike most microprocessor word processors, the BSW does not provide extensive formatting commands. There are only two embedded commands; the center and indent commands. As is obvious from this text, the BSW cannot right justify. You cannot create columns of figures, footnote, underline, or send printer control commands. However you can page number, print more than one file and select right, left, top and

bottom margins. One of the nicer features is the provision for printing only a portion of the text. This is convenient for correcting only a portion of a long text that was previously printed.

The commands used will be considered normal to anyone used to working with the Apple computer. For instance the I-J-K-M diamond is used for cursor movement. All of the available commands are visible to the user in the top margin of the screen. This naturally limits the number that can be provided without creating screenfulls of commands. I can understand that the creators of the BSW might have considered some of the functions mentioned above unnecessary as this software was created with children's writing habits and needs in mind.

I have found the BSW to provide for the most current hardware improvements. It is fully compatible with the Apple IIe. For Apple II or II+ users there are also provisions for using a Key Board Enhancer or a shift key modification with a Lower Case Adapter, a 16k RAM card for additional working space and two disk drives. The two graphics screens are used to present upper and lower case letters with descenders, and show the command menus. Inverse video is used to show the selected command or the body of text to be moved, deleted, found, or replaced.

I have found the Bank Street Writer to be a truly user friendly software package. Whether it will help children to be more creative and productive writers (I believe it will) will be determined by the uses to which it is put in the home and in the school. As with the computer, the BSW is merely a tool. With the proper tools in the hands of a craftsman and his apprentices, masterpieces can be created.

Product Name: Bank Street Writer
Created by: Intentional Educations Inc. (licensed to Broderbund Software)
Requirements: Apple II+, Apple II with Applesoft, Apple IIe, disk drive, printer
Cost: \$69.95

For more information on word processors in the home and school -

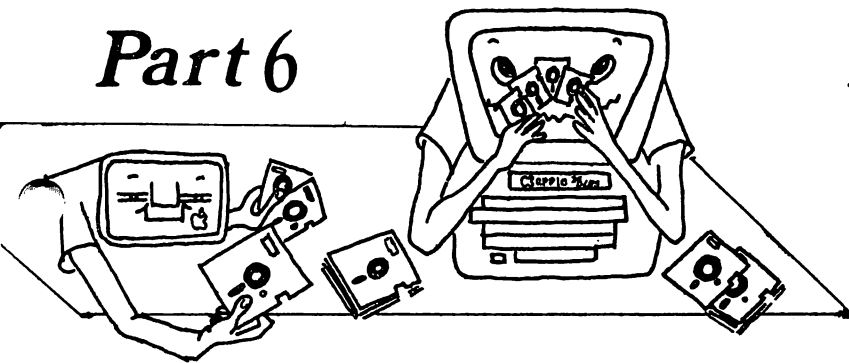
Seymour Papert, "Mindstorms - Computers, Children and Powerful Ideas", (New York: Basic Books)

"Educational Computer Magazine", Cupertino, Ca. 408-252-3224

Brian Whaley, "Logo Locus" (articles 1 thru 4), "Apple Barrel" published by the Houston Area Apple Users Group

By

Clark Johnson



This month's article will complete the review of the "fast-DOS's" which began last month. The groundwork was laid in that article with a general discussion of the operation of a fast DOS, criteria for selecting the "best" one, and a list of those to be reviewed.

The following table gives the results of a series of speed tests for the DOS packages. You will note that all seven fast DOS's are included as well as two results for normal Apple DOS 3.3. The heading entitled "RESECTORED DOS 3.3" is for a disk that has been re-initialized with an improved numerical order of the sectors. This was discussed last month as a possible alternative to using a modified, faster DOS.

Ratings for compatability are somewhat more subjective and are based on my running a series of programs on each DOS. All fast DOS's reviewed gave absolutely no problem on any Applesoft program that didn't load binary subroutines into memory either close to the Applesoft program or up close to DOS. As previously mentioned, the type of program that is most prone to incompatibility is a utility program that connects directly into some part of DOS. I used a catalog selection program (written in machine language), called BMENU, as one indicator of incompatibility. Three DOS's (TURBODOS, FASTDOS, and ULTRA FAST LOADER) were not able to run this program. To be fair to them, though, I must emphasize that general purpose programs will likely run under any well-written commercial

DOS COMPARISON TESTS

----- SPEED TESTS IN SECONDS -----

	<u>120-SECTOR BASIC PROGRAM</u>		<u>100 SECTOR BINARY PROGRAM</u>		<u>51 SECTOR SEQUENTIAL FILE</u>	
	<u>LOAD</u>	<u>SAVE</u>	<u>BLOAD</u>	<u>BSAVE</u>	<u>READ</u>	<u>WRITE</u>
1) NORMAL DOS 3.3	29.5	39.7	24.5	33.7	64	56
2) RESECTORED DOS 3.3	16.6	34.3	14.0	29.0	*	*
3) DAVID DOS	7.1	39.7	6.6	33.7	*	56
4) DIVERSIDOS	6.3	8.3	5.7	7.4	26	31
5) FASTDOS	5.7	11.2	5.7	10.0	*	*
6) PRONTODOS	6.3	17.0 (1)	5.7	15.1 (2)	*	56
7) SPEEDDOS	6.3	39.7	6.5	33.7	*	*
8) TURBOCHARGER	6.3	39.7	5.7	33.7	*	*
9) ULTRA FAST LOAD	6.3	39.7	6.5	33.7	*	*

1) 12.0 SECONDS W/O VERIFY

2) 11.0 SECONDS W/O VERIFY

* -- NOT TESTED BUT NO CHANGE EXPECTED FROM STANDARD DOS 3.3

All DOS packages gave practically the same results for the loads, with just a slight edge for FAST DOS. DAVID-DOS was slightly slower for the loads. However, only three (DIVERSIDOS, PRONTODOS, and FAST DOS) improved on the time for a SAVE or BSAVE, with DIVERSIDOS the clear winner.

Only DIVERSIDOS was able to speed up the reading and writing of Text files. It is the only one that actually claims to do so. The time required for Text file handling under DIVERSIDOS was about 50% of the time required under normal DOS. I believe this to be a substantial improvement, because Text file manipulation is really limited more by Applesoft than by the DOS.

fast DOS. There is one exception - that of ULTRA FAST LOADER by CAI. This program has a major defect in its fast load routine, which will be discussed in the section devoted to it.

Compatibility with commercial copy - protected programs is really sort of an unexpected bonus in itself. It does take a combination of special factors to make the protected commercial program work with another DOS. The typical program that will work is a business program that uses most of a standard DOS's command list. Usually, it uses standard DOS Text files for storage of data.

In somewhat limited research, I was able to find four popular copy-protected programs that ran without problems under a well written fast DOS.

These were:

- 1) SCREENWRITER II
- 2) HOME ACCOUNTANT
- 3) BPI GENERAL LEDGER (and other BPI)
- 4) VISIPILOT/VISITREND

SCREENWRITER II and VISIPILOT/VISITREND would run with absolutely no special procedures required. Simply boot up the fast DOS, insert the commercial program disk and type "BRUN START" for SCREENWRITER or "RUN INIT" for VISIPILOT/VISITREND. HOME ACCOUNTANT is slightly more complex because its copy-protection system uses non-standard end marks. Don't worry about what that means. Simply type in these two lines after booting up on the fast DOS disk -

POKE 47497,24
POKE 47498,96

and then type "RUN HELLO".

It is fairly complicated for an average computer user to set up BPI to run under a DOS different from its own, because the new versions of BPI use a non-standard DOS command list. Someone familiar with the structure of DOS could set up a BPI pre-boot disk that would boot up the fast DOS, overlay the BPI non-standard DOS command list on top of the standard list, and then run the BPI hello program "BOOTMSG" after the BPI disk is installed. I won't include it in this article, but I will share with any licensed owner of the newer version of BPI the procedure of making it run under a fast DOS.

The improvement on performance of these four commercial programs under a fast DOS is truly astonishing. Not only can LOAD and BLOAD times be drastically reduced, but if the DOS can speed up Text file manipulation, then this bottleneck can be improved.

SCREENWRITER ran under all DOS's except ULTRA FAST LOADER. HOME ACCOUNTANT ran equally well under all DOS's. BPI would not run under ULTRA FAST LOADER. Also, VISIPILOT/VISITREND would not run under ULTRA FAST LOADER. It appears that a clear trend on the incompatibility of ULTRA FAST LOADER is emerging. The reason for this will be explained subsequently.

The next criteria considered the flexibility of transferring the DOS to your disk. In this category, DIVERSIDOS and PRONTO-DOS have to rate the highest, because they keep the INIT function "alive" in addition to being able to transfer the DOS from the master disk. DAVID-DOS did not allow the INIT function, but its master disk had several good options for creating the modified DOS, including a disk formatting option. FAST DOS, SPEDDOS, and ULTRA FAST

LOADER all required the master disk for placing the modified DOS on your disk. TURBOCHARGER was the only DOS enhancement package that used a file to overlay the DOS modifications (by BRUNNING TURBO) on top of a standard DOS after bootup.

SPECIFIC COMMENTS ON THE PACKAGES

DAVID-DOS

This is a fairly new DOS enhancement package that offers several features not included in the other packages. From a speed standpoint, it has to rank fairly low. It does have basically the same speed for loading of program files as the rest of the DOS's, but it does not improve on the time required for saving of files. Also, it does not speed up the normal manipulation of Text files. Compatibility proved to be no problem, basically because of the different versions of DAVID-DOS available. The INIT function was removed, therefore requiring the master disk to create any fast DOS disks.

I evidently mis-interpreted the advertisements for DAVID-DOS. The ads stated that a new DOS command TLOAD allows rapid loading of Text files. After receiving the DAVID-DOS disk, I realized that this command would not help the normal reading and writing of data Text files. Instead, the TLOAD command is very useful for reading (in the visual sense) the contents of all types of Text files, like word processor files, EXEC files, and data files. To load in the Text file, you use the new DOS command TLOAD. This will place the entire contents (or a specified portion) of a designated file into memory. The TLIST command is then used to display the file's contents to the screen. One important function of DAVID-DOS that makes the TLIST command so handy are the built-in scroll options. At any time while you are reading the file using TLIST, you may stop, re-start, or abort the listing. You may also change the speed of the listing by pressing specific keys.

There are actually six other new DOS commands in addition to TLOAD and TLIST. Two of these allow hex/ASCII dumping of memory in any specified range and disassembly in any range. Again, the thing that makes these commands so valuable is the scrolling control as explained before. One new command gives the length and address of the last BLOAD. Another relocates DOS to the ram card. One other command is used to locate any sequence of hex codes in memory. The last command is used to date files, in conjunction with a Mountain Hardware clock.

The master disk gives you three versions of DAVID-DOS to choose from, in case the more complicated versions are not compatible with some particular program. Also, you may format new disks from within the options menu of the master disk.

One final nice touch of this DOS is that the "/" key will catalog the disk, as well as the normal command CATALOG.

DIVERSIDOS

DIVERSIDOS has very outstanding speed capabilities. As shown in the previous table, it has the usual good speed improvement for loads. It is one of only three DOS's that improved on the "save" times and was the fastest of the three. It was the only DOS that improved on the reading and writing of Text files - a major advancement. I was not able to find any program with which DIVERSIDOS was not compatible. And it does not remove the INIT function, which simplifies the ease of transferring the DOS to another disk.

Some people may be annoyed with the sacrifice you make in the DOS error messages. To make room for the programming required for the fast DOS coding, the author took over the section that contained the DOS error messages. For example, instead of getting the error message "FILE NOT FOUND", you will instead get the message "DOS ERR #6". Therefore, you either have to remember the error numbers or else have a printed listing handy. DIVERSIDOS does have a command on the master disk that will print the error message descriptions to either the screen or a printer.

In addition to the previously mentioned capabilities, DIVERSIDOS has several enhancements available. One of these is a print buffer controlled by software. If you have a 16K or larger ram card, it can be used as a print buffer if you select that option. The option is included in a file that can be loaded into memory from any program. Also, in a similar manner, DIVERSIDOS has a binary file that will cause the ram card to act as a keyboard input buffer. There is another file that is used to relocate DIVERSIDOS onto the ram card.

Another nice feature of DIVERSIDOS is its option to allow running of protected disks. You first boot up on the DIVERSIDOS master, choose this option, and then insert the protected disk. DIVERSIDOS will find the name of the protected disk's hello program and then attempt to RUN (or BRUN) that program. Obviously, the protected disk must have the characteristics mentioned earlier in this column.

DSR employs a unique marketing strategy. Instead of marketing through the normal distribution outlets, DSR encourages everyone holding a copy of the disk to freely distribute copies. The party receiving the copy is advised in the disk's documentation that in order to legally keep the copy, he will need to send the \$25 license fee to the author within two weeks. The author believes this distribution method will keep the cost of the product down. Alternatively, one can order a copy directly from DSR for \$30.

FASTDOS

This was one of the original commercial fast DOS's available. It is a good basic fast DOS but does not have many of the bonus enhancements that some of the newer packages have. FASTDOS was one of only three that improved on the time for a SAVE or BSAVE.

One disadvantage of FASTDOS is that the disks created by it are not copyable by ordinary copy programs. Tracks 0, 1, and 2 have an altered structure that the normal copy programs cannot recognize. The rest of the tracks are not protected, so it is possible to FID over all of the programs to another disk. Apparently, this mechanism was used to prevent the FASTDOS itself from being copied, to give a means of protection to the authors of FASTDOS.

PRONTODOS

PRONTODOS offers the basic fast DOS options. It has the standard speed improvement that all fast DOS's have. It is one of three that improved the time required for a SAVE or BSAVE. It does not have any effect on Text files. Its compatibility is very good, giving no problems with any of the programs tested, whether protected or not. PRONTODOS preserves the INIT function.

PRONTODOS does not offer any bonus utilities, but it does have good options for specifying the fast DOS to be loaded onto a disk. For example, when transferring the DOS to a previously initialized disk, the Pronto Create program will check the old DOS to make sure that it is compatible with the modifications to be inserted for PRONTODOS.

One interesting feature of PRONTODOS is that 15 extra sectors on the disk are freed up and by compacting and freeing up unused portions of Tracks 0,1, and 2 where DOS is stored. This action changes the DOS locations on a disk, so if you are the type of computer user who modifies DOS directly on the disk, you will have to learn the new locations.

SPEEDDOS

SPEEDDOS 2.0 is a basic fast DOS utility. It does not offer any DOS enhancements in addition to the usual speed improvement for loading of BASIC and binary files. It does offer one option that the other fast DOS's do not. That is the option to place the fast DOS code in one of two places. The usual spot to put the code is in the area normally occupied by the INIT command. However, if you wish, you may preserve INIT by placing the the fast DOS code just below the normal beginning of DOS. This placement does run the danger of being incompatible with programs that load just below DOS.

One other feature of SPEEDDOS that may be of benefit is that the source code for the fast DOS is included on the disk, for both the S C Macroassembler and the Big Mac Assembler.

ULTRA-FAST LOADER by CAI

It is with mixed emotions that I review this package. The intended scope of this system is probably the best of all reviewed. Not only does it have the usual fast DOS capability, but it also offers a very comprehensive fast boot option.

The fast - boot option allows you to configure a disk that will boot, load Integer basic if you wish, and execute a specified program(s) - all in under 5 seconds. You can fast load, on the boot, as many binary programs as you wish, provided they don't overlap in memory. You may also additionally fast-load one Applesoft or Integer program into memory on the boot-up. I don't think you can ask for any more flexibility for a fast-boot system.

Unfortunately, ULTRA FAST LOADER (hereafter called UFL) has three major bugs. The first bug is an improper fast-DOS procedure. As stated in last month's column, the typical mechanism of a fast DOS is to read in all complete sectors from a disk until the last sector is reached. At that point, the last sector should be read in byte - by - byte. If the last sector were to loaded in completely, then it could carry "garbage data" with it. This would not be a problem unless the garbage data over-lapped good data in memory.

This is precisely the problem with UFL. It loads the last sector in as a complete unit, and consequently runs the risk of overlapping bad data on top of good data. This shortcoming is recognized by CAI; they offer one completely unsatisfactory mechanism of avoiding this problem.

This is obviously the reason that UFL has many compatibility problems with existing programs that depend on machine language subroutines that load close to other programs.

I really don't the reasons for UFL's second problem, which is the failure to load their fast DOS into memory when using the fast boot option. The DOS that is loaded is not the UFL fast DOS, but a standard "slow" DOS. Therefore, if your hello program needs to load other programs after the boot-up, you are back to the typical slow procedure for doing so. I can think of no logical reason for this deficiency, because the fast DOS will work equally as well (or equally as not well) after the fast boot.

The third bug occurs when the disk is being formatted for the fast boot. For some unknown reason, the VTOC will say that Track 36 (\$23) is available for use. (Normally,

only 35 tracks are used.) But that Track \$23 will not have been formatted, so a later "SAVE" may try to place a file on Track \$23 only to get a SYNTAX ERROR. The problem can be fixed by using a disk zap program like DISKFIXER to change the VTOC to close off Track \$23, but why should you have to bother?

CONCLUSIONS & RECOMMENDATIONS

As usual, when reviewing a series of programs that all supposedly do the same thing, one finds something in every package that he likes. And no one package stands out heads and shoulders above the rest.

However, I believe that there are some general recommendations that can be made. First, if you are interested in a DOS that will do everything fast, that you can place on your disks and then basically forget that it is there, I would unhesitatingly recommend DIVERSIDOS. It is very fast on all types of files (the only one to improve Text files) and is very compatible with existing software. Its only drawback is that the error codes are numbered instead of being in English phrases - a small price to pay for so good a package. (And at a reasonable price.) PRONTODOS is probably the next choice in this category. It's disadvantage is it does not affect Text files; its advantage is that the error codes are given in English.

If you want a DOS package that has many outstanding utilities, then DAVID-DOS may be the package for you. Its eight new DOS commands offer capabilities not found in any other DOS enhancements. The disadvantage of DAVID-DOS is that its overall speed effectiveness is not that great.

What if you're shopping price? Then SPEEDDOS may be the best bet. Not only is it the cheapest of all the packages, but it also can be put into any commercial software applications without any additional liscensing fees.

Because of its overall scope, I still like ULTRA FAST LOAD, despite its bugs. If you are handy with manipulating DOS, you can correct many of the bugs it has. Maybe Computer Advanced Ideas will correct the bugs.

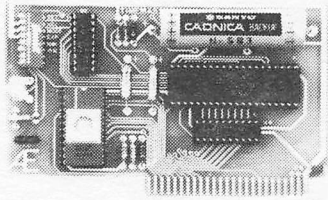
If your particular application requires that you overlay (using a file) a DOS modification on top of standard DOS, then TURBOCHARGER is the only one that will satisfy that requirement. Also, TURBOCHARGER will date-stamp all of your files on the disk.

I think that the most emphatic statement that can be made about fast DOS's is that anyone who spends more than 15 minutes a day at his APPLE definitely needs the speed increase. If you haven't used one of these before, you will be extremely surprised and pleased at the benefits you receive.

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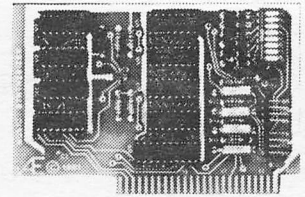
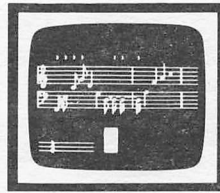
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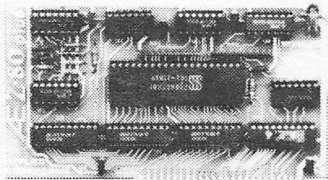
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