

Applications

AUGUST - HIGHLIGHTS - 1986

More Sophisticated Writing

Macintosh Hints

ANNUAL GENERAL MEETING
Monday August 18th. 6.30 p.m.
Prizes and surprises

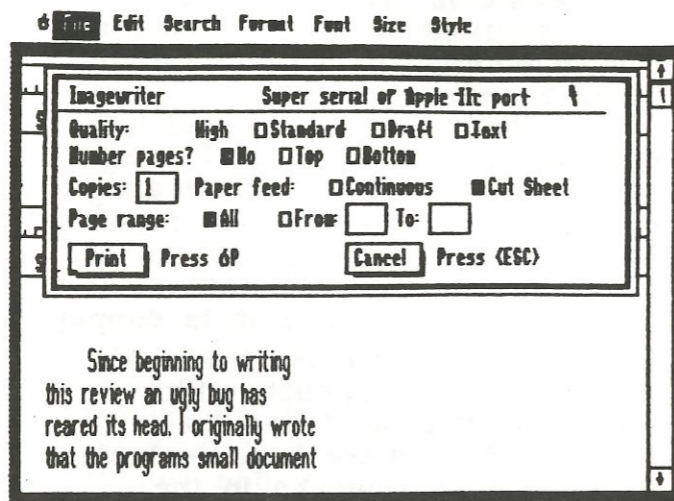


THE PUBLICATION OF THE
APPLE USERS GROUP (SYDNEY)
AUSTRALIA

similar problem with early versions of MacWrite. The similarities continue.

The reason I ran out of memory was that I decided to put the article into column format and this effectively doubled the amount of pages and therein lies the problem. I originally typed in the article in full page format and changed the format after I had finished. Consequently the problem didn't arise until too late. You can safely type 8 full pages and still have room to manipulate text. This shows why the program has a print merge capability. Some problems are to be expected I suppose but it still doesn't dampen my enthusiasm for the program as a whole. For the price it is a very good package that gives the best printed output I have seen of any word processor currently available for the Apple // series of computers. Maybe it's not for the professional but with the advances being made in Apple // software then its only a matter of time before a more advanced version is available which takes advantage of memory expansion boards.

THE PRINT DIALOG BOX



----- CARD GAME ----- ----- CONSTRUCTION SET -----

This disk contains programs; PLAYING CARDS, SEVENS, SOLITAIRE, POKER, EXAMPLES, and RE.ASSEMBLER. All programs run on the Apple 2+, //c, and //e.

The playing cards can be used to write your own games. All program games are written in Basic, and can be inspected. Example lines are supplied.

Available from AUG BulkPurchase for \$16.

Apple UniDisk

Comments by Philip Marston

Recently, a need has become apparent among AppleWorks Users, for greater storage space for their AppleWorks files. Such space is available by using the newer, smaller 3.5 inch disk.

A normal SSDD 5.25 inch floppy disk provides 136Kb storage. A DSDD 3.5 inch disk, when formatted under AppleWorks, has 798Kb of storage space for your AppleWorks files. That's nearly six times greater than that of a normal 5.25 inch floppy.

Program and data on the same disk

The AppleWorks program resided in 171Kb of the disk space. This exceeds the capacity of a normal Apple disk, and therefore usually resides on two disks - or - BOTH sides of a 5.25 inch floppy disk.

Alternatively, a 3.5 inch disk containing the AppleWorks program leaves 625Kb available for data storage. Therefore the entire AppleWorks program can reside within a small part of the 3.5 inch disk and leave available a massive 625Kb of free storage space. This is equivalent to the space available on more than four ordinary floppy disks.

It is therefore possible to engage in a full AppleWorks session with ONE 3.5 inch disk - ONE 3.5 unidrive and NO disk swapping.

Multiple Programs on one disk

The AppleWorks program occupies 171Kb of disk space. The DSDD 3.5 inch provides 796Kb of disk space.

If all ProDOS programs were as big as AppleWorks, and we know they are not, it would be possible to include at the very least, five entire programs on the one 3.5 inch UniDisk. This suggests the possibility of storing all your related programs, e.g. Graphics programs on the one disk.

AppleWorks, ReportWorks and Pinpoint represent a group of related programs which could reside together on the same disk, and still leave storage space for data files. Many other examples within your own applications probably come to mind.

Control of different programs on one disk

How do you control more than one program on one disk? Naturally you would like to switch from one program to another, and back again! It would also be desirable to nominate which program was to startup on booting the disk. How do we keep track of a single data file when it is stored with so many others?

These questions suggest some sort of program management, and whether you are interested in managing the files on a hard disk or the 3.5 inch disk, one of the three following suggestions may provide the solution.

1. Menu

A small menu can be written to display a list of choices on the screen when the disk is booted. Each of the choices could represent one of the programs resident on the disk, and upon entering the appropriate response, the program, of your choice could then be accessed.

To write such a program, however, requires a knowledge of ProDOS and ProDOS pathnames, particularly if smooth changes from one program another are to be achieved.

2. Mousedesk

A product of International Solutions, the Mousedesk is a disk and file management program with Macintosh appearance. Pull-down menus, icons, and double-clicks allow you to copy, delete, identify and run programs. used in conjunction with the Apple (1 Megabyte) memory Expansion card. MouseDesk will automatically load your programs into the extra RAM for faster than Hard disk operation. The Mousedesk program has been packaged free with the 3.5 UniDisk as a promotion by many distributors, but of course you have to supply your own mouse. It is possible to use MouseDesk with the keyboard using the Arrow keys and the Apple keys, but this method bears no comparison with the smooth operation of the mouse for which the program was designed.

3. Catalyst

If you do not have a mouse connected to your Apple computer, then Catalyst II is what you need to manage your mass storage disk.

Quark Incorporated, the producers of Catalyst, offer as their solution a 5.25 inch startup disk, which will identify the 3.5 inch disk loaded, and represent an on-screen menu of programs that can be run from that disk, at the selection of a number. Using the program, it is possible to customise the appearance of the menu that is displayed to suit your own tastes. Catalyst II can achieve equally successful results when applied to hard disk management, the only requirement is that the disk being addressed must be set up using the Catalyst Installation program.

The concept of a separate Startup disk offers security to your hard disk or 3.5 inch disk, they cannot be accessed by anyone who does not have your startup disk with its own unique serial number.

Apple Apple Apple Apple AUG Software Library Apple Apple Apple Apple

Apple AUG Disk #45

Side One:- Eamon adventure 101
Harrogate Hotel

The first of a new series, it has a large vocabulary and the ability to understand full english sentences. Rumour has it that the hotel is haunted, and that cheating program listers will be cursed.

The Eamon master disk (No. 19) must be booted first, before running individual adventures.

Side Two:- AppleWriter //e Utilities

Enhancements to your AppleWriter //e disk (DOS 3.3 Version). It adds to and improves functions of the wordprocessor; Copy multiple files, Delete Useless files, Convert files, Count the Words/Characters in a text file, Print a document outline, and many more.

Apple AUG Disk #46

Side One:- DEFENDER

A High-Resolution game for an Apple with 64K RAM, and Apple II+ with 16K RAM card, and Apple //c, or //e, and a Joystick.

The object of Defender is to rescue men from attacking aliens before they are captured and turned into mutants.

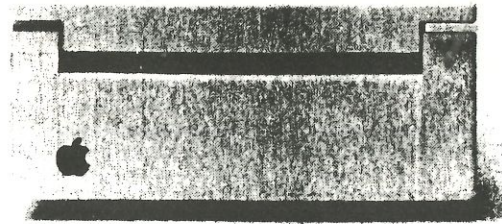
Side Two:- BINARY LINKING UTILITY

Allows a user to link and use a number of machine language routines. These can be used from an Applesoft program by CALLing, or BRUNing. Libraries can be made on disk. Demonstration programs are included on the disk.



UniDisk 3.5

High-Density Data Storage
for Your Apple II



The UniDisk™ 3.5-inch floppy-disk subsystem opens up a new world of information storage for your Apple® II personal computer.

Each compact, rugged 3.5-inch disk provides 800 kilobytes of data-storage capability: more than five times that of conventional Apple floppy disks. And UniDisk 3.5 lets you access your files faster than ever before.

You can easily use UniDisk 3.5 in conjunction

with your current Apple II drives, giving you the flexibility of running programs from (and storing your data on) either the 3.5-inch or 5¼-inch format, whichever best suits your needs.

No matter where you use your Apple II—in the office, at school, at home, or in the laboratory—UniDisk 3.5 is your best value for power and flexibility in information handling.

Benefits

UniDisk 3.5 . . .

- Gives your Apple system more than five times the storage capability of 5¼-inch disks.
- Loads and saves data at speeds up to 50 percent faster than the standard Apple II drive.
- Is compatible with the entire Apple II family of computers, from the original Apple II and Apple II Plus to the Apple IIe and IIc.

- Lets you combine 5¼-inch and 3.5-inch drives in the same system for maximum information-handling flexibility.
- Uses rugged, compact, 3.5-inch plastic-encased disks.
- Lets you add additional drives easily.
- Takes up a minimal amount of desk space.

UniDisk 3.5— A Closer Look

UniDisk 3.5 uses the latest personal-computer disk technology: plastic-encased floppy disks that are small enough to fit in a pocket—and rugged enough to survive there.

Each double-sided disk has a storage capability of 800 kilobytes, minimizing the need for disk swapping. For instance, many programs that require separate 5¼-inch program and startup disks can be transferred to a single 3.5-inch disk for easier booting. And each 3.5-inch disk holds about 600 pages of information, so even lengthy documents can be stored in one convenient location.

UniDisk 3.5 also lets you access your information faster—up to 50 percent faster than a

standard Apple II drive—so you spend less time waiting for files to load and save.

You can use UniDisk 3.5 subsystems in conjunction with your present Apple II drives, giving you all the benefits of 3.5-inch disk technology without obsoleting your existing hardware and software. The computer can boot from either type of drive.

UniDisk 3.5 connects easily into the back of your Apple IIc, or into an interface card for the Apple II, II Plus, or IIe. An additional drive can be plugged right into the first one. (On the Apple IIc, you can end the chain with a Disk IIc instead.) These additional disk drives give you even more information-handling power, and further reduce disk swapping.

System Configuration

To use UniDisk 3.5, you will need one of the following systems:

- An Apple IIc personal computer.

- An Apple II, II Plus, or IIe personal computer with the UniDisk 3.5 Apple IIe Accessory Kit.

Technical Specifications

Recording media

Disk diameter: 3.5 in.
Recording surfaces: 2*
Tracks per surface: 80

Capacities

Formatted data capacity: 800 kilobytes
Unformatted data capacity: 1,246 kilobytes

Characteristics

Seek time (track to track): 6 milliseconds maximum
Settle time: 30 milliseconds maximum
Drive-motor start time: 600 milliseconds maximum

*Disks used in UniDisk 3.5 should contain certified double-sided media.

Power consumption

- + 12 volts
- Standby: 10 microamps
- Typical: 120 milliamps
- Peak: 600 milliamps (during eject; 2-second maximum duration)

- + 5 volts
- Standby: 170 milliamps
- Typical: 360 milliamps

Head position accuracy
± 0.035 mm

Dimensions (Drive)

Length: 7.87 in. (200 mm)
Width: 4.72 in. (120 mm)
Height: 2.01 in. (51 mm)

UniDisk 3.5 Order No. A2M2053

With your UniDisk 3.5 order, you'll receive:

- UniDisk 3.5 floppy-disk drive
- Owner's manual
- Limited warranty statement

To use UniDisk 3.5 with an Apple II, II Plus, or IIe personal computer, you must also obtain: UniDisk 3.5 Apple IIe Accessory Kit

Order No. A2C2002

The kit contains:

- UniDisk 3.5 interface card
- Installation wrench and bolts

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Apple // bits and pieces

Multilingual Word Processor for Apple IIc

A word-processing system for the Apple IIc that supports two Arabic fonts plus English, French, and German fonts, has been created by two English companies. They are DIWAN Science and Information Technology and Attar Computers Limited.

The system comes with a bilingual notepad program, an address program and ImageWriter bilingual drive routines.

It uses the IIc's bit-mapped display to show Arabic and English text in 40 or 80 columns using two separate windows, each of which has independent scrolling.

For more information, contact:

DIWAN Science and
Information Technology
London House
271 King Street
London W6 9LZ
England
(01) 741-8011

PPM

PPM does work under Pascal 1.3, what you have to do is replace the following files with the 1.3 equivalent: SYSTEM.APPLE, SYSTEM.PASCAL & SYSTEM.ATTACH. Using the 1.3 SYSTEM.LIBRARY is a good idea since CHAINSTUFF 1.2 doesn't work with Pascal 1.3.

The only problem with PPM and 1.3 is not being able to use the X)tended filer, although its functions can be duplicated by using the F)iler for normal stuff and then X)ecuting PPM.CODE for the extra functions.

ProFile: Formatting Compatibility

ProFiles can be formatted for two main types of operating systems:

1. the Lisa Operating System
2. ProDOS (Apple II), and SOS (Apple III).

ProFiles are formatted at the factory with the Apple /// SOS format and contain the Apple /// System Utilities program. This format is completely compatible with the Apple // ProDOS format, and so can be used on either the Apple II or Apple III; additionally, these ProFiles can be used without difficulty on the Macintosh XL (running Lisa or Macintosh software). Once a ProFile has been formatted by Lisa software, it may not be able to work any longer on an Apple II or III.

ProFiles don't need any special software to function with these systems other than the respective system formatters which accompany each system's operating system utilities, regardless of what system it was used on previously.

NOTES:

1. The Pascal ProFile Manager will not format a ProFile; the ProFile must already be formatted with ProDOS.

2. If you're unable to initialize a Profile for use with an Apple // or Apple /// after it's been used with a Macintosh XL, replace the HDA. The HDA will have to be formatted at the factory.

3287 Emulation

ImageWriters make good replacements for the IBM 3287 dot matrix printers that are commonly used with the IBM 3270 family of terminal devices. As you may know, DCA currently replace IBM 3278 terminals with an AppleLine-Mac-Macterminal combination. You can replace the IBM 3287 printers as well. The solution is simple and cost effective.

Here is the solution:

IRMAprint (from DCA) \$US1,295.00, ImageWriter II Printer (from Apple) \$A1145.00 (inc tax) and an Apple II Printer 8 cable \$A35.00

IBM 3274/6 → Coax cable → IRMAprint → Printer 8 cable → ImageWriter

This solution proves to be a good value because it saves the customer \$3000+ per printer and provides better print quality and speed than the IBM 3287 or clones such as Telex. A typical 3287 printer costs between \$US5,530 to \$US7,793 depending on features, and a Telex clone configured with like features runs about \$5,000.

DCA is a registered trademark of Digital Communications Association, Inc.

LaserWriter color cartridges

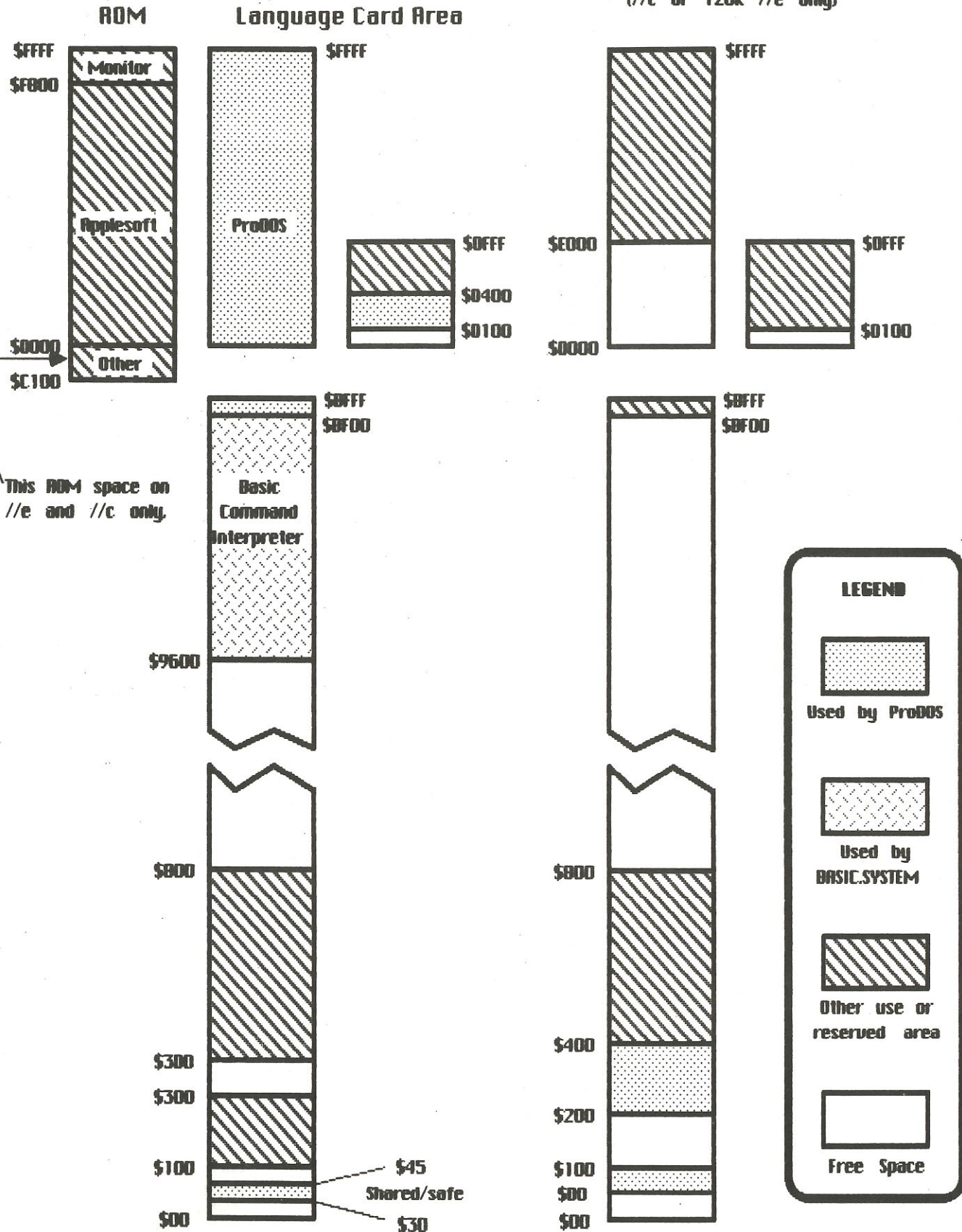
Toner Distributors in Carlsbad Ca. (619) 931-9968 will refill toner cartridges with Black, Blue, or Brown toner. A call will get all the pertinent info from an answering machine.

ProDOS Memory Map

Main Memory

Auxiliary Memory

(//c or 128k //e only)



The PRINT SHOP Companion



Reviewed by Trevor Drover.

If you have an Apple computer and a printer then there is a strong possibility that you use the "Print Shop". This great programme has been made even better with the release of THE PRINT SHOP COMPANION.

Broderbund consistently produce high quality software and this is no exception. When I first played with the Companion on the Apple stand at PC86, I was immediately sold on the 12 extra fonts and 50 extra borders that I could use with Print Shop. After using the Companion for a few weeks, I was even more impressed with the utilities that the disk contains. These are :
Graphic Editor+; Border Editor; Font Editor; Tile Magic; Creature Maker; and Calender.

When you first arrive home with your Companion, you need to set up the original Print Shop disk so that it can look for borders and fonts 'FROM OTHER DISK'. This is accomplished by the Companion writing to the Print Shop disk. As the Companion has no printer drivers of its own, it gets this information from Print Shop and stores it on disk. Is this what is meant by a mutual assistance programme?

The Graphic Editor+ is a very much enhanced version of the utility of the same name that comes on Print Shop. Building or modifying graphics is now a pleasure rather than a challenge. Lines, boxes, rays and ovals can be simply drawn using keyboard commands, then areas can be flood-filled with a choice of 17 patterns. Made a mistake? - Press U to undo it and try again! It's so simple.

Including alphanumeric on your graphics is also a dream, press T and type them in. With all the enhancements this programme provides, it seems rather unfortunate that there is only one size font to use in the Graphics Editor. I guess we've been spoilt a bit.

The other commands allow you to insert and delete rows or columns; flip your graphic vertically or horizontally; make a negative; draw a mirror image as you make a freehand drawing; and scroll the graphic around its tile. There's even a graphic 'grabber' that lets you take a bit of a picture from screen memory.

When we had a choice of 9 borders you came to your decision fairly quickly; now we have 59 so a lot of Umming and Ahhing goes on. Throw in a Border Editor that lets you easily modify an existing border or build one for a specific job, and time seems immaterial.

Borders are constructed on three tiles, to allow for corners, sides, top and bottom. While you build the segments on the tiles, a representation of the final article is displayed around the screen. This assists you in deciding if any portions need to be 'flipped' about to make a harmonious fit. When it is finished you save the border to a data disk for recall at a later date.

We've built our graphic, modified a border, now what's left to change? Why a Font of course. Fancy a bit of comic relief, put eyes in the letter 'O' for use in the word 'LOOK'; or create monograms by modifying those initials of your name, and using on a letterhead. Maybe you think Lower Case 'a' and 'g' should be changed to reflect the way we teach children to write in our schools - then change them!

To change a few letters from an existing font, or build a new font up for the Greek alphabet requires use of the Font Editor. This can be a long process as there are not many short-cuts, and there are after all, 57 letters, numerals and symbols to work on. As with all three editors, progress is made by turning 'on' or 'off' each small block until you have created the desired effect, which can then be saved for future use.

Tile Magic and Creature Maker allow you to create original graphics by using The Companion's in-built features, and then modifying them even further by carrying them into the Graphic Editor+.

Tile Magic gives you 11 moving patterns like the kaleidoscopes in Print Shop's ScreenMagic mode. You watch the patterns change until you see a design you like, then freeze it, and hey presto!, - another graphic for your data disk.

Creature Maker is another fast way of creating graphics. There are 10 creatures, from which you select the head, body, and legs. Have a normal monkey, or give it some 'lucky' rabbits feet! There are hundreds of possibilities.

With Calendar you select the month and year and then as expected, The Companion does the figuring and comes up with the correct days and dates. You can choose the font for the month and year and also choose a graphic for the top if you so desire. There are two ways of printing calenders; by the month and by the week, that is, seven days. Ok you've seen similar before; I had just typed a programme into my machine and was putting some polish on it when I purchased The Companion. Now my programme is gathering dust or electrons or whatever unused disks tend to gather.

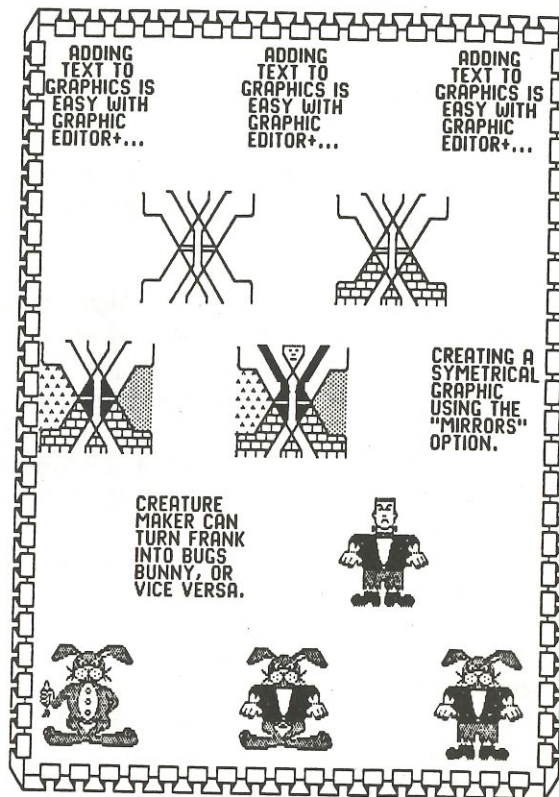
Calendar gives you the facility to enter notes for any day (eg birthdays, holidays, meetings) save it to disk, then you candrag it back next year, edit where necessary then print it out again. And oh boy, the printout is really good.

The Print Shop, The Print Shop Companion and the Library disks are one of our most frequently used suite of programmes. This accounts for the heavy toll of printer ribbons! The Companion is a very worthwhile addition to anyone who currently has a copy of Print Shop. If you don't have them, go out and buy them both!



SUN	MON	TUE	WED	THU	FRI	SAT
	1	2	3 MONTIST 1230 HRS START LOOKING FOR PRESENT FOR BOB	4 PAYDAY	5	6
7	8 CAR SERVICE	9	10 BLOOD-SOME 1030	11	12 BOOK BABYSITTER FOR SATURDAY	13 PARTY AT BOB'S & CHARLIE'S
14	15	16 DAD'S BIRTHDAY	17	18 PAYDAY	19	20
21	22	23	24 HOUSE PAYMENT DUE	25	26	27
28	29	30				

CALENDAR FROM COMPANION DISK.



Stardisk

A Starcard CP/M Information disk. Almost all you ever wanted to know about the Starcard.

How Starcard and Apple talk to each other. A full description with lots of programming examples you can build on.

Many new drivers: Use the Epson APL (printer) card; use the SATURN 128K RAMcard as a RAMdisk; use Apple memory as RAMdisk instead of printer buffer.

This disk (one side StarCard CP/M, the other DOS 3.3) is \$8.00 (plus postage if necessary). Ring me, Ferg Brand, at 427-2358.

P.S. The DOS 3.3/ProDOS disk and DOS/Pascal disk described in Jan/Feb 1986 Applications Page 17 are still available - free.



Apple News

Good Profits

----- During 1985 IBM still topped the sales list, but little Apple was the second-largest seller of business oriented computers with sales of US\$ 1.2 million.

● SuperCalc 3 for enhanced

----- Apple //c, and //e
By Computer Associates International, and distributed by Arcom Pacific, the product has all the features and functions of the IBM. It provides a spreadsheet with integrated graphics and data management. Providing 50 functions, file conversion, send/receive utilities, ProDOS filepath support and full use of the 65C02 processor.

Hardware: 128K RAM, and one disk drive.
Information: Arcom Pacific, 252 Abbotsford Rd., Mayne, QLD 4006



PINPOINT SPELLING CHECKER

Review By Mike Nagle.

If you had read my review on the "Pinpoint" - Desk Top Accessories program you would have seen that I mentioned that Pinpoint were about to release a Spelling Checker for Appleworks that would fit into the desk top accessories program - well it has been released and I have had a chance to look at and see how it works.

After spending a few evenings using it, I must say that it is of the usual high standard Pinpoint set and is a very good buy at the price the A.U.G. is selling it for.

To use it you must have course own the desk top accessories program and have two drives for the spelling checker to work within Appleworks. The package consists of two sides - one being the program disk, the other the dictionary disk. To install the spelling checker into the desk top accessories, you update you installation disk with the Spelling Checker program, then your update your Appleworks start-up disk with the installation disk and you are ready to go.

When you have completed an Appleworks word processor document and you want it check for correct spelling, all you do - without leaving your document - is press the Solid-Apple-P keys and you are presented with the Desktop Accessories menu from which you select the now-installed Spelling Checker. You put your Spelling Checker program in drive 2 and your Dictionary disk in drive 1. The spelling checker gives you several options as to how you want your document checked. To see the options you press the Solid-Apple-M keys:

- 1.WORD CHECKING (single words only)
- 2.PARAGRAPH CHECKING
3. DOCUMENT CHECKING

Once you have selected an option, all you have do is place the cursor at the position you want to start having the document checked, and press the Solid-Apple-P keys and the program will start checking for spelling. When it detects an unknown word it will stop and search the dictionary for alternative spelling and will display up to ten different words that you may have meant to use. If there is the correct spelling among the list - all you do is select that word and it will automatically replace the incorrect word in your document. If in fact the word you used is correct, but not contained in the dictionary, you have two choices - you can ignore-the spelling

by hitting the Escape key, or if it is a word you regularly use, you can add it to the Pinpoint dictionary by using the add the word option from the menu.

The program may seem slow in scanning a document, but when you consider that with other spelling checker programs, you have to leave your word processor program and then load the spelling checker program. With Pinpoint's Spelling Checker you never have to leave Appleworks itself. This I feel more than compensates for the slow document scan.

The manual that comes with the program, is easy to follow, but after you run the spelling checker once you really do not have to refer to the manual again.

SUMMARY:

On a scale of ten, for ease of use and performance, I would award it an eight and so I thoroughly recommended it to all owners of the Pinpoint Desktop Accessories package. As both these are now available through the users group at a very reasonable cost you should consider adding them to your library.

AUG Bulk Purchase Price: \$99

MULTISCRIBE - Word Processor -

Review By Mike Nagle.

Now your //c and //e can offer you the type of creativity that you might have thought was available only with a Macintosh with the release of a word processor program called Multiscribe.

With Multiscribe there are no complicated commands to learn. It has easy to pull down menus providing you with a range of type styles, character sizes and text formatting options. You can select the typeface thats right for your text or even create your own custom font with the font editor. Multiscribe offers you any style, from Bold and Underline, to Italic, Shadow and Outline, making it very much like MacWrite.

Multiscribe requires 128K RAM to run, can be used with a mouse or keyboard and is also available on a 3.5 disk for use with the Apple UniDisk. It works with most dot-matrix printers, including Imagewriter, Epson and Okidata and you can even customise files created by other word processors.

What sets Multiscribe apart from other word processors is that, once you have selected the font, style and size you see on the screen how actual the file will be printed so as it makes formatting that much easier. The only setting it will not show is when you select the text centering format.

The formatting is all done on a ruler that appears on the screen and you select tabs, spacing and text justifying from the boxes on the ruler. This format remains in force until you insert a new ruler.

You can search for any word, or any part of a word, in a document and, if you want to, replace it with a different word. You can also delete, copy, move and replace text quickly and easily with a mouse or the keyboard.

The manual that comes with Multiscribe is very comprehensive, but I feel its size could be reduced, as it tend to repeat many instructions more than once throughout the manual.

There are other word processors on the market that are more powerful than Multiscribe, but it offers many features for designing creative text that would make it a worthy acquisition to your software library.

The one thing I found a bit off-putting about the program is that there is a delay from when you enter a keystroke and it appearing on the screen. This took me a while to adjust to.

SUMMARY:

On scale of ten I would rate it a seven for performance and ease of use.

AUG BulkPurchase Price \$ 100



MACROWORKS

By Beagle Bros

Review By Mike Nagle.

Beagle Bros have just released a package called Macroworks. It is an Appleworks enhancement disk containing many macros which can be automatically built into your Appleworks program.

As with all Beagle Bros products it has many things going for it, but one disadvantage is that you cannot use Macroworks and the Pinpoint desktop accessories together. The manual recommends that you have one Appleworks disk for each system.

What Macroworks allows you to do within Appleworks is extensive and it streamlines

Appleworks word processing with added commands that replace many of the Appleworks edit commands that take longer in their execution.

To use Macroworks within Appleworks, you update your Appleworks start-up disk with Macroworks, (remember - do not use your start-up disk containing Pinpoint) and you are ready to use many of the built in macros that are installed.

For those of you who do not know what a macro is here is a brief explanation.

Macros are instructions that are written into your program that enable you to take short cuts when you want your word processor to carry out a function which normally requires a string of instructions to be entered for the task to be carried out. Also - every time you want the same function you have to repeat the procedure, whereas with built in macros you have only to perform one keystroke for the function to be executed.

There are too many of these macros to list in this column but here are a few of them that will enable you to judge its usefulness for yourself.

Once in a word processor document, you can activate the following macros by these keystrokes:-

- Solid-Apple-RETURN: forces a Page Break
- Solid-Apple-Tab: Go to right margin
- Solid-Apple-Space: Inserts a space
- Solid-Apple-D: Deletes word at cursor
- Solid-Apple-S: Saves and removes the current file from the desktop.
- Solid-Apple-C: Centers the text
- Solid-Apple-P: Prints the current file using the current printer
- Solid-Apple-U: Undoes last delete

There are many more, that make editing and printing Appleworks documents much faster than the normal Appleworks commands, and by so doing reduces the time in producing the final product.

Macroworks does not end there, as you can design your own macros that suite you personal requirements.

One example of such a macro is by writing one using the Solid-Apple-N you can have your name an address printed automatically anytime without having to type in that information. The manual that comes with the package gives you hints on writing your own personal macros that enable you reduce the number of keystrokes dramatically.

And that's not all - as there are several more utilities that can be used such as, Analyst, Alpha-cat and Galley. Here is a short outline of how they work:

Analyst: Looks at your Appleworks word processor files and lets you analyse your writing style and lists the words you used, and shows all unique words (you may find a misspelled word or two).

Galley: Prints word processor documents in 2 or 3 columns for a newsletter format and is very handy for producing a school or club newspaper - giving it that professional look.

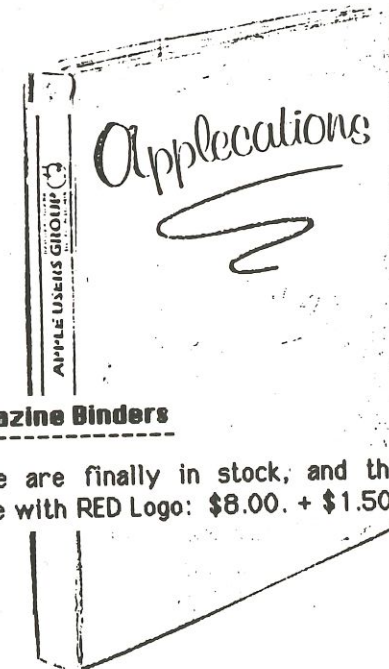
Alpha-cat: Will make a two column printout of your unprotected ProDos disk catalogs, alphabetized or not. The two column printout will fold up and fit nicely into your floppy disk sleeve as a record of your files.

The instruction manual that comes with the package is well written as easy to understand which we have come to expect with Beagle Bros products.

SUMMARY:

On a scale of ten I would give Macroworks an eight for its performance and usefulness to Appleworks users. The users group are selling this program, so any member, who uses Appleworks should snap it up as I am sure they will not be disappointed with this economically priced package.

AUG BulkPurchase Price \$ 45



Magazine Binders

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VERILIST - FILE LISTER

By R.Bennett

If you have Pronto-DOS or DAVID DOS, you will be familiar with the TYPE or TLIST commands. Well these commands are great if you want to list text files, but what if you want to list an Applesoft file. If you have ten different versions of a program on a disk, you don't want to have to load each one in to find which one you are looking for, especially if they're all very long. Or what if you are copying a routine from one program into another, you don't want to have to keep saving the new program and reloading the old one just to copy the routine. What you need is a TYPE command that will list Applesoft files without altering any memory.

My first idea was to intercept a DOS command from the keyboard, open the file, and use the ROM's LIST routine to list the file to the screen. So first, I needed a DOS command. The VERIFY command is perfect, because a VERIFY is done automatically after ever SAVE or BSAVE anyway.

The next step was to open the file, which was fairly simple. A routine at \$A3D5 will open the file and test that it is of the filetype passed in the Accumulator. (Line 67)

Now the hard part, trying to list the file. The only way I figured I could do this, was to write my own list routine and put it with the VERILIST program in memory, which I did. (Actually, I disassembled the ROM and copied most of it.)

Except for a few minor additions, the program was finished. I added a way to get out of the program halfway through a list, just type CTRL-C.

The attached Source listing was written on the Merlin Assembler, which allows two files to be written, assembled, and saved together if their ORG addresses are different. (i.e. Line 66 is really in memory at \$6057, but gets relocated by the program to \$9C49)

If you are using another assembler, like the Toolkit Assembler, then you will have to type it in as two files. One from \$6000-\$6056 and the other from \$9C49-\$9CFF, BLOAD them into memory one after the other at \$6000 and BSAVE them as one file.

Or if you don't have an assembler, type all the code in from \$6000 and BSAVE it as one file.(BSAVE VERILIST,A\$6000,L270)

```

1          ORG $6000
2
3          *****
4          *
5          * VERILIST - FILE LISTER *
6          * *****
7          *
8          * By R. Bennett 18/08/85 *
9          *
10         * VERIFY <FILENAME> *
11         *
12         * Where <FILENAME> is an *
13         * Applesoft file, this *
14         * will list the file to *
15         * screen without erasing *
16         * the current file in *
17         * memory. *
18         *
19         *****
20
21         *
22         * SETUP
23         *
24
25         SCRATCH LDA $9D54
26                CMP #$7C
27                BNE NOINSTALL
28                LDA $9D55
29                CMP #$A2
30                BNE NOINSTALL
31                LDA *VERIFY-1
32                STA $9D54
33                LDA *VERIFY-1
34                STA $9D55
35                LDA $9D00
36                SEC
37                SBC *END-VERIFY
38                STA $9D00
39                LDA $9D01
40                SBC #$00
41                STA $9D01
42                LDX $9D00
43         LOOPA  LDA VERILIST,X
44                STA VERIFY,X
45                INX
46                CPX *END-VERIFY
47                BNE LOOPA
48                JMP $3D3
49         NOINSTALL LDX $9D00
50                LDA TEXTA,X
51                JSR $FDED
52                INX
53                CPX #14
54                BNE NOINSTALL+2
55                JMP $3D0
56         TEXTA  HEX 8D
57                ASC "NOT DOS 3.3"
58         D3 A0 B3 AE B3
59                HEX 878D
60
61         *
62         * ACTUAL PROGRAM
63         *
64         VERILIST ORG $9C49
65
66         VERIFY LDA #02
67                JSR $A3D5
68                STA $C010
69                LDA #$8D
70                JSR COUT
71                JSR COUT
72                JSR GETCHAR
73                JSR GETCHAR
74                JSR GETCHAR
75                JMP START
76         LOOP  JSR GETCHAR
77                BEQ QUIT
78         START JSR GETCHAR

```

```

9C6D: 20 D0 9C 79 ZD6DA JSR GETCHAR
9C70: 8D CF 9C 80 STA VAR
9C73: 20 D0 9C 81 JSR GETCHAR
9C76: AE CF 9C 82 LDX VAR
9C79: 20 24 ED 83 JSR $ED24
9C7C: A9 A0 84 LDA *$A0
9C7E: 09 80 85 ZD702 ORA *$80
9C80: 20 E3 9C 86 ZD712 JSR COUT
9C83: 20 D0 9C 88 JSR GETCHAR
9C86: 00 10 89 BNE ZD734
9C88: A9 8D 90 ZD724 LDA *$8D
9C8A: 20 E3 9C 91 JSR COUT
9C8D: 4C 65 9C 92 JMP LOOP
9C90: C8 94 ZD72C INY
9C91: D0 02 95 BNE ZD731
9C93: E6 9E 96 INC $9E
9C95: B1 9D 97 ZD731 LDA (<$9D>),Y
9C97: 60 98 RTS
9C98: 10 E4 100 ZD734 BPL ZD702
9C9A: 38 101 SEC
9C9B: E9 7F 102 SBC *$7F
9C9D: AA 103 TAX
9C9E: A0 D0 104 LDY *$D0
9CA0: 84 9D 105 STY $9D
9CA2: A0 CF 106 LDY *$CF
9CA4: 84 9E 107 STY $9E
9CA6: A0 FF 108 LDY *$FF
9CA8: CA 109 ZD746 DEX
9CA9: F0 07 110 BEQ ZD750
9CAB: 20 90 9C 111 ZD749 JSR ZD72C
9CAE: 10 FB 112 BPL ZD749
9CB0: 30 F6 113 BMI ZD746
9CB2: A9 A0 114 ZD750 LDA *$A0
9CB4: 20 E3 9C 115 JSR COUT
9CB7: 20 90 9C 116 ZD755 JSR ZD72C
9CBA: 30 07 117 BMI ZD75F
9CBC: 09 80 118 ORA *$80
9CBE: 20 ED FD 119 JSR $FDED
9CC1: D0 F4 120 BNE ZD755
9CC3: 20 E3 9C 121 ZD75F JSR COUT
9CC6: A9 A0 122 LDA *$A0
9CC8: D0 B4 123 BNE ZD702
9CCA: A9 00 124 QUIT LDA *$00
9CCC: 4C EA A2 125 JMP $A2EA
9CCF: 00 126 VAR HEX 00
9CD0: AD 00 C0 127 GETCHAR LDA $C000
9CD3: C9 83 128 CMP *$83
9CD5: F0 03 129 BEQ OK
9CD7: 4C 8C A6 130 JMP $A68C
9CDA: 68 131 OK PLA
9CDB: 68 132 PLA
9CDC: 20 EA A2 133 JSR $A2EA
9CDF: 8D 10 C0 134 STA $C010
9CE2: 60 135 RTS
9CE3: 48 136 COUT PHA
9CE4: 20 ED FD 137 JSR $FDED
9CE7: A5 24 138 LDA $24
9CE9: C9 21 139 CMP #33
9CEB: 90 0B 140 BCC OK1
9CED: A2 06 141 LDX *$06
9CEF: BD F9 9C 142 LOOP1 LDA TEXT-1,X

```

```

9CF2: 20 ED FD 143 JSR $FDED
9CF5: CA 144 DEX
9CF6: D0 F7 145 BNE LOOP1
9CF8: 68 146 OK1 PLA
9CF9: 60 147 RTS
9CFA: A0 A0 A0 148 TEXT HEX A0A0A0A080
9CFD: A0 A0 8D 149 END
150
151 * ASSEMBLED USING MERLIN

```

--End assembly-- 270 bytes

Symbol table - alphabetical order:

COUT = \$9CE3	END = \$9D00	GETCHAR = \$9CD0	LOOP = \$9C65
LOOP1 = \$9CEF	LOOPA = \$602B	NOINSTALL = \$6039	OK = \$9CDA
OK1 = \$9CF8	QUIT = \$9CCA	SCRATCH = \$6000	START = \$9C6A
TEXT = \$9CFA	TEXTA = \$6049	VAR = \$9CCF	VERIFY = \$9C49
VERILIST = \$6057	ZD6DA = \$9C6D	ZD702 = \$9C7E	ZD712 = \$9C83
ZD724 = \$9C88	ZD72C = \$9C90	ZD731 = \$9C95	ZD734 = \$9C98
ZD746 = \$9C88	ZD749 = \$9C8B	ZD750 = \$9CB2	ZD755 = \$9CB7
ZD75F = \$9CC3			

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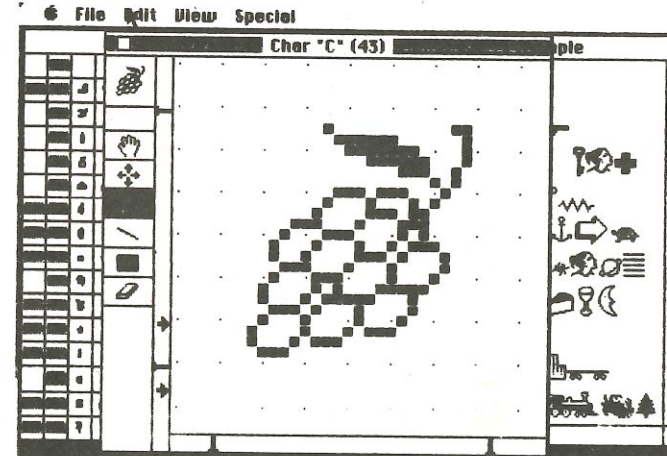
Account Name:..... Exp date:/ 198
CREDIT
CARD No. / /

SIGNATURE:.....

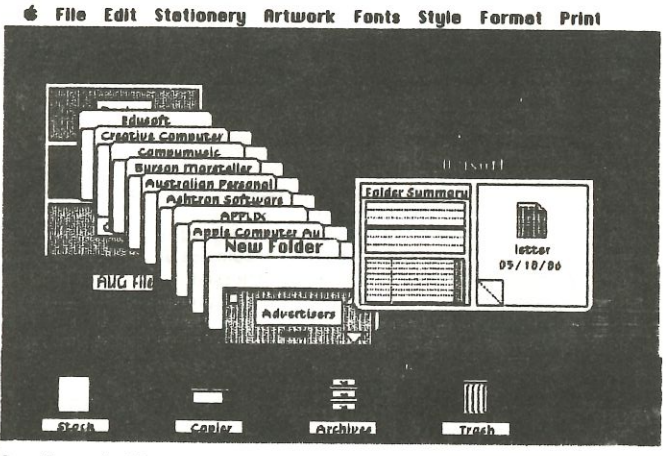
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Applications



1/2

JANUARY/FEBRUARY 1987

HIGHLIGHTS



NEW MEETING LOCATION - Map On Page 5



**Apple //GS Upgrades
Rebuild a DOS 3.3 Catalog**



**SuperPaint-Review
Microsoft WORKS-Review**



THE PUBLICATION OF THE
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(Incorporated in N.S.W.)

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You may also wish to add some of the exciting new Apple accessories for which the upgrade is not required. For instance, there's the Apple Monochrome Monitor, for crips white-on-black text and graphics. And the Apple II SCSI Card, which allows you to access the 20 megabyte Apple Hard Disk 20SC and up to three other SCSI-compatible peripherals.

The Apple IIGS Upgrade is a simple, dealer installed option that involves replacing the logic board and metal base pan of your Apple IIe. The new logic board contains the 65C816 microprocessor, RAM, ROM, Ensoniq sound chip, expansion slots, and connectors; the base pan holds the logic board securely in place inside the Apple IIe case.

System Requirements

To use the Apple IIGS Upgrade Kit, you must have an Apple IIe personal computer. This upgrade is not compatible with other computers in the Apple II family.

Technical Specifications

Consult the Apple IIGS data sheet.

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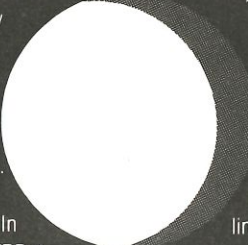
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Apple // bits and pieces



APPLE //e TO LASERWRITER IN APPLEWORKS

The following describes the connection between AppleWorks on the Apple //e and the LaserWriter.

For the hardware configuration see Fig 1. The switch settings on the SCC are for : 9600 baud (SW1:1-4), Printer Mode (SW1:5-6), Normal CTS (SW2:1), 8 data bits and 1 stop (SW2:2), no delay after CR (SW2:3), 132 character line (SW2:4), auto-LF after CR (SW2:5), Disabled ACIA-CPU interrupts (SW2:6), Normal CTS (SW2:7).

With the Selector Switch on the LaserWriter set to 'Special', the LaserWriter emulates a Diablo 630 printer at 9600 baud, XON/XOFF protocol, no parity.

To verify the connection, turn on the //e, video monitor, and LaserWriter. Boot AppleWorks and choose 'Other Activities' from the main menu. Add a custom printer, naming it LaserWriter. Use these settings for this custom printer :

1. Needs line feed after each Return
No
2. Accepts top-of-page commands
Yes
3. Stop at end of each page
No

4. Platten width
8.0 inches
5. Interface Cards
Control-I RETURN
Control-I 255N RETURN
Control-I RETURN
Control-I XE RETURN
6. Printer Codes
Yes

The printer codes for the Diablo Emulation are in the LaserWriter Technical Description. If you specify no printer codes, the typeface will default to Courier standard, 12 characters per inch, monospaced.

Return to the main menu and try to print a document.

NOTES :

When you are using the AppleWorks ⌘-H for hard copy, you will have to print a document using ⌘-P before you may use the ⌘-H command again. This is because the command ⌘-H does not issue the form feed command the LaserWriter needs to output the last page and clear its Diablo emulation settings.

Do NOT use the High Speed Serial Card with the //e. The connection to the LaserWriter requires XON/XOFF handshaking, which the High Speed Serial Card does NOT support.

FORMATTING PROFILES

Formatting Compatability ProFiles can be formatted for two main types of operating systems:

1. the Lisa Operating System for the Lisa, and
2. the Operating Systems, namely :
 - a) ProDOS for the Apple II, and
 - b) SOS for the Apple III.

ProFiles are formatted at the factory with the Apple III SOS format and contain the Apple III System Utilities program. This format is completely compatible with the Apple II ProDOS format, and so can be used on either the Apple II or Apple III. Additionally, these ProFiles can be used without difficulty on the Macintosh XL (running Lisa or Macintosh software). Once a ProFile has been formatted by Lisa software, it may not be able to work any longer with an Apple II or Apple III.

ProFiles don't need any special software to function with these systems other than the respective system formatters which accompany each systems operating system utilities, regardless of what system it was used on previously.

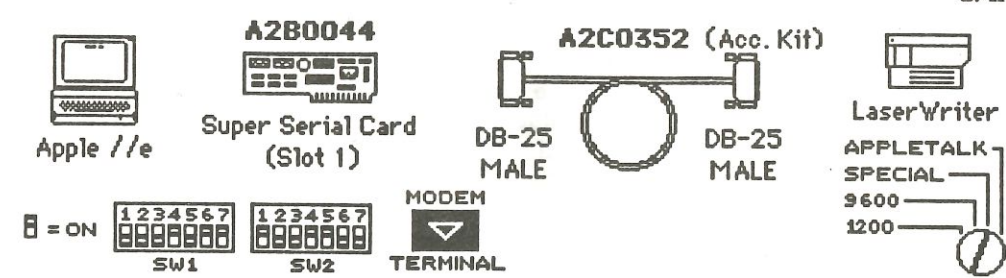
NOTES :

1. PPM will not format a ProFile; the ProFile must already be formatted with ProDOS.

2. If you're unable to initialise a ProFile for use with an Apple II or Apple III after it's been used with a Macintosh XL, replace the HDA.

The HDA will have to be formatted at the factory.

Fig 1 (Apple //e to LaserWriter)



How To Rebuild a Broken DOS 3.3 CATALOG Track.

By Keith Jeeves.

When a disk drive fault occurs during a SAVE operation, the result is often corruption of track \$11 - the catalog track. The most common drive problems are caused by a build up of dirt on the fingers of the drive interface card resulting in poor electrical contact with the socket on the motherboard and causing corrupt data signals or intermittent drive power. Further problems can be caused by overheating inside the machine, especially on the II+. Often no warning of an impending problem is given and the result is a blown disk.

There are 2 approaches to recovering the situation:-

1) Backup everything and if a disk is smashed simply re-initialise and copy over. This is easier said than done, of course, but a useful technique is to use the flip side of a single sided disk for backup. This gets over a number of problems; it is convenient, saves an disks and because the flip side will only get occasional use the (perfectly valid) arguments against 'flippies' are not too important. Of course, if you physically damage the disk, you can lose the lot.

2) Rebuild the catalog track. This is actually extremely easy and all you really need is a ZAP utility or Nibble Editor. If your utility has facilities to copy a whole track, then the job is even easier. The procedure is summarised as follows;

1. Initialise a blank disk.

2. Set up dummy files on the new disk called A,B,C etc. You will require the same number of files as there are files to recover...if in doubt create more than you will need. The files can be any type but if all your smashed files are TEXT files, then the dummy files should all be TEXT files and the same for BASIC and BINARY files.

3. Copy track \$11 from the new disk to the smashed disk.

4. Find and note the location of all the Track/Sector lists on the smashed disk. You can either search manually sector by sector or use a T/S list finder utility (see later).

5. Insert the T/S list addresses into the dummy files set up in the new catalog track.

6. Inspect the first sector of each file to attempt to determine the file type and insert into the dummy files set up the new catalog track.

7. Boot DOS and load each file. Identify, rename and save to a newly initialised disk. Beware here...some of the T/S lists may be belong to previously deleted files so take time to properly identify wanted files.

8. Re-initialise the smashed disk.

Briefly:-----

A disk file consists of as many 256 byte sectors as are required to hold the file. These sectors can be pretty much anywhere on the disk and their location is sorted out by DOS during the SAVE process.

DOS keeps a sequential list of where it stores the data sectors and when all sectors have been saved, it puts the list, known as the Track/Sector list, onto the disk in the form of an additional sector and records its Track/Sector address in the catalog entry for that file, along with the file name, file type and number of sectors in the file. (This is why even a very short file of less than 256 bytes requires 2 sectors for storage...one for the file data and one for the T/S list which in this case will only contain one sector address).

The format of a T/S list is as follows;

BYTE 00	Not used
BYTE 01	Track number of next T/S list (zero if no other list needed)
BYTE 02	Sector number of next T/S list (zero if there is no other list)
BYTE 03-04	Not used
BYTE 05-06	Sector number in data file of first sector in this list
BYTE 07-0B	Not used
BYTE 0C	Track of first data sector
BYTE 0D	Sector of first data sector
BYTE 0E-FF	Up to 121 more T/S pairs

To find all the T/S lists on the disk, you can either search sector by sector for entries following the above format or use a short utility to perform the search and report any successful finds. A simple binary routine to do the job is given in the book 'Beneath Apple DOS' and a dump of this routine follows. To use it, BLOAD T/S LIST FINDER insert the disk to be investigated and run the file with 900G. A list will be produced of all sectors found following the T/S list format.

When all the T/S lists have been found and recorded, dump the first sector of each file to attempt to determine the file type. Text files will be recognisable text, Basic files should be able to be

Identified by text strings within the code....if in doubt, have a guess. Note the file type next to the T/S address. The catalog entry also contains the number of sectors in the file, but this is for display only and need not be correct at this stage. The correct number will be generated when the recovered file is save to another disk.

```

900: 20 E3 03 84 00 85 01 A9 03 A0 04 91 00 A0 08 A9
910: 00 91 00 C8 A9 08 91 00 A9 01 A0 0C 91 00 A9 00
920: A0 03 91 00 A0 05 A9 00 91 00 20 E3 03 20 D9 03
930: A9 00 85 48 90 26 20 B3 09 A9 87 20 ED FD A9 D2
940: 20 ED FD A9 C3 20 ED FD A9 BD 20 ED FD A0 0D B1
950: 00 20 DA FD A9 8D 20 ED FD 4C 8E 09 A2 00 BD 00
960: 08 D0 05 E8 D0 F8 F0 26 A2 05 BD 00 08 D0 1F E8
970: E0 0C 90 F6 BD 00 08 C9 23 B0 13 E8 BD 00 08 C9
980: 10 B0 0B E8 D0 EE 20 B3 09 A9 8D 20 ED FD A0 05
990: B1 00 18 69 01 91 00 C9 10 B0 03 4C 2A 09 A0 04
9A0: B1 00 18 69 01 91 00 C9 11 F0 F3 C9 23 B0 03 4C
9B0: 24 09 60 A9 D4 20 ED FD A0 04 B1 00 20 CC 09 A9
9C0: D3 20 ED FD A0 05 B1 00 20 CC 09 60 48 A9 BD 20
9D0: ED FD 68 20 DA FD A9 A0 20 ED FD 60
  
```

BSAVE T/S LIST FINDER,A\$900,L\$DB

Now go through the catalog starting at track \$11/sector\$F and allocate a T/S list address to each of the dummy file entries. Each sector of the catalog track will hold seven file entries and is arranged as follows;

BYTE 00	Not used
BYTE 01	Track of next catalog sector
BYTE 02	Sector of next catalog sector
BYTE 03-0A	Not used
BYTE 0B-2D	First file descriptive entry
BYTE 2E-50	Second file descriptive entry
BYTE 51-73	Third file descriptive entry
BYTE 74-96	Fourth file descriptive entry
BYTE 97-B9	Fifth file descriptive entry
BYTE BA-DC	Sixth file descriptive entry
BYTE DD-FF	Seventh file descriptive entry

Format of File Descriptive entry...

Each of the seven File Descriptive Entries contains \$23 bytes allocated as follows (the byte number in the following list is the number within the file entry, not the byte number in the sector);

BYTE 00	Track of first T/S list
BYTE 01	Sector of first T/S list
BYTE 02	File type..to keep it simple, only use the following codes...
	00 Unlocked Text
	01 Unlocked Integer Basic
	02 Unlocked Applesoft Basic
	04 Unlocked Binary
BYTE 03-20	File name in ASCII characters
BYTE 21-22	Number of sectors in file (Lo/Hi format).

Byte 22 will usually be zero

The important addresses in a catalog sector for our purposes are as follows;

BYTE 0B	File 1	T/S list track
BYTE 0C		T/S list sector
BYTE 0D		File type
BYTE 2E	File 2	T/S list track
BYTE 2F		T/S list sector
BYTE 30		File type
BYTE 51	File 3	T/S list track
BYTE 52		T/S list sector
BYTE 53		File type
BYTE 74	File 4	T/S list track
BYTE 75		T/S list sector
BYTE 76		File type
BYTE 97	File 5	T/S list track
BYTE 98		T/S list sector
BYTE 99		File type
BYTE BA	File 6	T/S list track
BYTE BB		T/S list sector
BYTE BC		File type
BYTE DD	File 7	T/S list track
BYTE DE		T/S list sector
BYTE DF		File type

It should now be possible to boot DOS, load and identify the files, ensure that they are complete and delete any unwanted material. Wanted files should now be renamed and copied to a new disk. This is most important, because the thing that we did not do was rebuild the Volume Table Of Contents (VTOC) which is the master map of the disk giving DOS information about which sectors are allocated and which are free to store new data. If we attempt to store new files on a disk with an incorrect VTOC, we run the risk of overwriting existing sectors. Saving the recovered files to a completely new disk will allow DOS to build the VTOC as it goes. It will also ensure that the correct value for the number of sectors is written into the new catalog track. Needless to say, do not use a fast back-up disk utility to do this as it will only duplicate the partially reconstructed disk and not build a new one.

The very last thing to do is to re-initialise the old disk (and back up the recovered files!).



From AUGDisk*P1

Continued on page 13

Apple IIGS: Printing to the LaserWriter from AppleWorks:

(Downloaded from "AppleLink" courtesy of Apple Australia and Peter Sandy.)

The following instructions are valid for AppleWorks versions 1.3 and 2.0; earlier versions of AppleWorks have not been tested with these modifications. These changes support both the LaserWriter and the LaserWriter Plus.

You first create an AppleWorks program disk with all the files required to print AppleWorks documents to the LaserWriter and thereupon you test the disk by printing a document.

Then you can create a bootable disk that effectively reduces the number of manual steps needed to prepare the system for printing your AppleWorks documents to the LaserWriter.

Creating a program disk:

Using the System Utilities program,

-- Name a disk /APPLEWORKS. For this set of instructions, we'll say the disk is a single 3.5" disk.

-- Copy all files from the master AppleWorks disk to the single 3.5" disk that you have named /APPLEWORKS.

-- Put away the master AppleWorks disk

-- Delete the old version of ProDOS 1.1.1 from your /APPLEWORKS disk.

-- Copy the new version of ProDOS, P8, from the Apple IIGS System Disk to your /APPLEWORKS disk.

-- On your AppleWorks disk, rename P8 with the name PRODOS.

-- Copy the following files from the Apple IIGS System Disk to your /APPLEWORKS disk:

ATINIT -----Appletalk initialization program
IWEM ----- ImageWriter Emulator program
MTXABS.0 --- Mousertext tool kit
NAMER.0 ---- Namer Object Code
NAMER.II ---- Namer program
CHOOSE.O -- Chooser Object Code
CHOOSE.II -- Chooser program

Printing a document with AppleWorks and the LaserWriter:

You need only do steps 3a through 3f once; after that, the disk has the necessary information.

1. Plug the AppleTalk cable into the printer port on the back of the Apple IIGS.
2. Change the Control Panel Slot settings to "Your Card" for Slot 1 and to "Built-In AppleTalk" for Slot 7.
3. Tell AppleWorks how to send information to the LaserWriter:
 - a. Start up AppleWorks and choose Other Activities from the Main Menu (Item #5).
 - b. Choose Specify information about your printer(s) (item #7).
 - c. Choose Add a printer (item #2).
 - d. Choose Apple ImageWriter.
 - e. To name the printer, type "LaserWriter" and press Return.
 - f. Choose Slot 7.

4. Start up the application called Chooser on your System Disk.

5. Click on LASERWRITER and choose the LaserWriter to which you want to print.

6. Quit Chooser.

7. Start AppleWorks by typing:

-/APPLEWORKS/APLWORKS.SYSTEM

Notes: The Chooser program "CHOOSE.II" must be run and the LaserWriter selected each time your LaserWriter is turned off and on. The CHOOSE program is used to download the IWEM file from the Apple IIGS into the LaserWriter. If the LaserWriter has been powered off since the last time the IWEM program was downloaded, the AppleWorks program will not print to the LaserWriter.

Creating a bootable disk:

To run the Namer, Chooser, or AppleWorks at boot time, create the simple startup program below and copy it to the disk. Follow the file copying instructions above in "Creating a program disk," and then:

1. Using the System Utilities

-- Copy the file BASIC.SYSTEM from the Apple IIGS System Disk to your AppleWorks disk.

-- On your AppleWorks disk, rename the file called

APLWORKS.SYSTEM to APLWORKS

-- Exit to BASIC

2. Create the following Applesoft BASIC program:

```
10 HOME : REM Startup program
20 PRINT " Program Loader ": PRINT
30 PRINT " 1) AppleWorks "
40 PRINT " 2) Chooser"
50 PRINT " 3) Namer": PRINT
60 INPUT " Enter your choice: ";A$
70 A = VAL(A$)
80 ON A GOTO 100,200,300
90 GOTO 10
100 PRINT CHR$(4);"-APLWORKS"
110 END
200 PRINT CHR$(4);"-CHOOSE.II"
210 END
300 PRINT CHR$(4);"-NAMER.II"
310 END
```

3. Check to be sure you entered the BASIC program exactly as shown above.

4. Type SAVE STARTUP and press Return.

Boot your AppleWorks disk; the following appears on the screen:

Program Loader

```
1) AppleWorks
2) Chooser
3) Namer
```

Enter your choice:

Simply type in the number of the program you wish to run, and press Return. Whenever you print to "LaserWriter," your output will be directed to the last LaserWriter chosen using Chooser.



What I Did Wrong - Next I

A guide to repairing Apple and Apple compatible computers.

By Eric Lindsay

One major problem with repairing compatibles is that they often have very different layouts to the genuine Apple. The computer in question was a][+ compatible with a built in Z80 for running CP/M all in an IBM style case. I am always unhappy about these, since the Z80 equipped systems seem prone to strange intermittent faults that are impossible to trace. If you must run CP/M (and I certainly wouldn't), use a plug in card.

The owner had already moved part of built in drives aside, and tried the system without any cards. What it produced was a series of large vertical bars across the screen, and nothing else.

In these cases, your first step is always the same. Check the reset line on the 6502 CPU. I used a CRO, but a cheap logic probe is sufficient. There wasn't any indication of the reset line moving from high to low, because it was always low. As a precaution, I also checked the output from the detachable keyboard, since it was easily accessible. This was also low. The question was, why was the line low?

The problem with the low reset line was that the CPU was always in a state of reset, and therefore nothing could start. The easiest way to check that this was the cause of the problems was to remove the 6502 CPU chip (remember to switch the power off before changing chips), and gently bend the reset pin up so it

couldn't make contact when put back in its socket. When I tried this, the system produced a normal prompt, and you could type from the keyboard.

Now to find the cause. The reset line to the CPU is pulled low by a transistor, driven by a little 8 pin 555 timer chip. There are also two other TTL chips in a similar area that could possibly be involved. My own bet was that the transistor had failed, however since the chips were all in sockets, I tried the quick method of substituting new chips. Incidentally, many chips in the Apple are used in multiple places, so if repairing, you can often simply swap two chips - if the symptoms change, one chip was probably at fault - you don't have to have a complete stock of brand new chips on hand.

This time the fault was in the 555 timer, which had apparently died. Replacing it fixed the entire system. One point to note is that, if you don't have chips, but do have access to a logic probe or a CRO, you can trace faults like this by following back the lines from chip to chip, seeing that each line does what you expect it to do. For instance, I could have almost as easily simply checked the three or four lines that could have affected the reset line transistor, thus eliminating all substituting.

Eric Lindsay,
6 Hillcrest Avenue, Faulconbridge NSW 2776

Continued on page 15

What in the world has happened to CARMEN SANDIEGO

A Review by Stephen Pritchard & Michael Paske.

Educational games tend to fall into two categories. They are either boring and educational - just plain boring. Well Carmen Sandiego is neither of these! This game has graphics which make for an interesting adventure. Moreover, it will help develop geographic skills.

The game commences with the disclosure that some priceless work of art has been stolen. It is your duty to pursue the bandit to his / her hide-away, arrest him / her and return the artifact to its rightful owner. In order to make an arrest a warrant has to be obtained from Interpol. A warrant will only be issued if the description you have input into the computer is accurate. Much of the game, therefore, is spent trailing the bandit from continent to continent collecting clues as to his / her identity. Once you have the desired warrant it becomes your goal to pinpoint the bandits location and make the arrest.

A series of successful arrests leads to promotions to higher levels.

This program is a mixture of various elements of graphic adventures, trivia games and mystery animation. It contains "The World Almanac" which, although not necessary for the smooth running of the game, does provide some answers to some of the more difficult questions posed.

In order to become a top class detective you will travel to exotic places and distant cities. There are ten possible suspects to track down through 30 cities with nearly 1,000 clues. While CARMEN is extremely user-friendly, there are ten possible suspects to track down through 30 cities, with nearly 1000 clues.

The program is available through bulk purchase.

DESERT FOX

A review by John Paske.

Hardware: Apple][+,][e or the][c, with joystick.

The object is to save 'ALLIES' depots before Rommel's forces take over.

Desert Fox is a strategy simulation game in which you are positioned in and around the deserts of Tobruk. You have to protect all your depots from the Desert Fox and his forces. If you are able to stay alive, you and the Desert Fox will be the only ones left to fight in a head to head tank duel.

Booting the disk displays a rough but acceptable graphic title page whilst loading the program. The menu selects either practice or campaigns (games) for you to play. There are 5 practice games and 5 campaigns. Each of the practice games represents what can be encountered in your campaigns. They are mainly Convoy attack, Tiger Tank attack, Minefield attack, Ambush attack and a Stuka attack (more on them later). Each of the campaign games range from beginners to grand masters and the only different aspect in these is that a higher amount of points are required to save your convoy or depot.

Once you select your campaign game, you are displayed an overall view of Tobruk and you have four choices to pick from. They are:

- 1) call in your bombers,
- 2) zoom up depots,
- 3) listen to enemy radios &
- 4) move in the direction of where the radio beacon is pointing.

You can only call in your bombers once per game. Zooming in allows you to view each depot, whether it is still around or blown-up and any supplies it has left. By selecting the Radio, you can point the beacon in any direction and then listen to enemy radio. This is very handy in case the Fox is attacking a depot or convoy. Using the MOVE command you can intercept the Fox or his forces and have a small conflict to protect your allies.

The computer picks which conflict is happening;

- A: CONVOY. You have to protect you allies by shooting down enemy Stukas.
- B: TIGER TANK. You have to destroy enemy Tiger Tanks enroute to a depot.
- C: MINEFIELD. You have to successfully steer through a lethal minefield in as short a time as possible while sustaining minimum damage.
- D: AMBUSH. You have to get through the canyon ambush with as little damage as possible.
- E: STUKA. You have to shoot down enemy STUKA

Continued on page 17

divebombers before they destroy Lone Wolf.

The game has real life voice simulation in it but you have to listen hard to be able to understand it, as it only says one or two words very quickly. It is a good game for players 12 yrs and up. It does have some weak points but apart from that I would recommend this game to anybody who wanted a game to play on a rainy day or had some time to fill in during the day.

FIGHT NIGHT ----- ----- By Accolade

A Review by John Paske.

Requirements: - An Apple][+,][e or a][c, with at least 64k of RAM.
Optional: -Joystick

Fight Night is a game that involves one or two players to box it out in the main arena. Fight Night is actually two games in one. The first game is the Main Event Line-up and the second is more of a construction set where you develop your characters to fight in the Main Event.

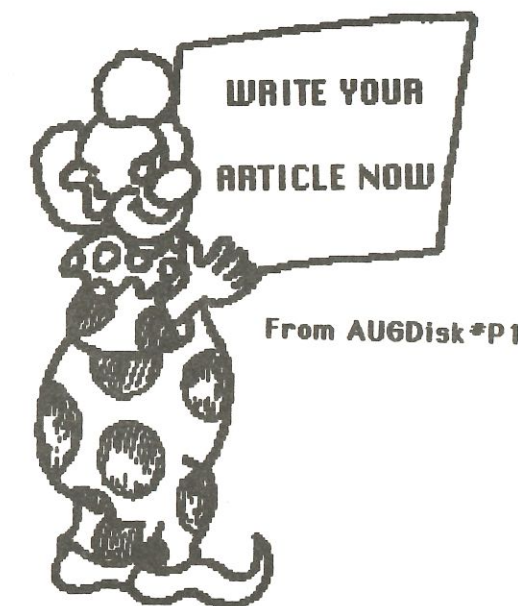
Upon loading the program, you are confronted with a menu with several different options. The first option, The Main Event, is where you can test yourself (or boxers made up with the construction set,) against five of the world's toughest fighters, (namely: Bronx Bomber, Dip Stick, Kid Kastro, Hu Him and British Bulldog.). The Main Event is the arcade style of the program. As you play each of the above contenders, each become more powerful than the last. The second option, Boxing Construction, allows you to create your own boxers. Boxers can have different appearances and qualities. They can be player or computer controlled, offensive or defensive, brick headed or glass jawed. The third option is Training. This allows you to practice your joystick (or keyboard) control with one of the constructed boxers. The fourth option is Sparring. In sparring, you can have a match between two constructed boxers, player against player, player against computer, or computer against computer. The last option is labelled Tournament. In tournament, you and your friend (or just yourself) can set up a tournament. As a manager, you must try to get the "right" fight schedule, to make your man the champ. Each of these options are chosen by a 'Mac like' icon that is moved around on the screen.

In the Main Event, you have to Box, using joystick or keyboard, for a total of 3 rounds each consisting of 3 minutes per round. If you can't knock out your partner within this time, a decision will take place. The player with the most points will win.

An interesting feature about Fight Night is the ability to construct your opponents, or your own men. Although you are only limited to the parts of the five main contenders, you can produce some interesting Boxers. You are able to build 24 custom boxers which includes changing their statistics. These statistics include Power for blow to head and body, Resistance blow, Time spent on actions and the Intelligence of the custom Boxer.

For anybody that's into Boxing and every thought that a computer game would be a good challenge, this is the game for you. I found it a bit difficult in places but I suppose it's only practice that makes perfect.

Distributed by Ozisoft, Sydney.





This has been yet another month when I have had too little time to clear my backlog of questions. Please be patient, I will eventually get to everyone. I still haven't even cleared the backlog of those who have sent stamped self-addressed envelopes, though I am getting close, I hope.

Send questions to me at; Ken Ozanne
Faulconbridge
NSW 2776

which is sufficient address. Via the club is also possible, but much slower. I can also be phoned at (047) 511-547 EVENINGS ONLY. I am often not home until after 10 p.m. and 11 p.m. is usually safer. I should have some kind of electronic mail address in the near future - I already do within NSWIT.

Would anyone who has not passed textfiles on to Peter Garde for the Applesoft BASIC programming text project please do so. (If you don't understand the question, you are probably not among the guilty!)

From Allan Maroney (whose handwriting I am not entirely sure I have deciphered correctly, so apologies if I have misspelled your name, Allan).

Q. What companies have you found reliable when purchasing from the USA?

A. I have dealt with a good many US companies, often while actually present there. One that I have had a good deal of contact with over several years is:

3A COMPUTER PRODUCTS
1803 Warren Avenue
Cheyenne, WY 82001, U.S.A.
Telephone (307) 632-8561

3A are also known as Apple Avocation Alliance. I brought about 20 copies of their catalog back from the U.S. with me last time I was there and have distributed most of them to club members. They have the most complete catalog I know of Apple-related products. I'm sure they would include a current catalog with any order, but you should send a few dollars if you just want the catalog. (It was \$2.00 way back when, but it may have gone up.)

There are some problems with buying hardware from the states, mostly because of Mr Reagan's anxiety to keep high-tech stuff out of the hands of the godless commies. Most Apple stuff is probably OK, but I have run into problems over things like 68000 boards. In general, anything costing under \$500 U.S. is no problem. But I would enquire first, particularly without having previous experience of the company. (I have, but you haven't)

There should be no problem about buying software. But remember that both hardware and software are liable to Australian customs duty and sales tax. Mick Tierney ran a couple of articles on that aspect of the matter in Applications a year or so back, but you should contact Australian customs and Sales Tax offices for the latest figures. If your purchases are modest enough, they may be allowed in without customs or sales tax - there is a threshold value below which it isn't worth their while to collect.

3A discount everything they sell, but are not always the lowest cost around. In general, they can get anything Apple, though I can remember a problem with a Canadian program once - they decided that they wouldn't sell their product through any dealer.

Apart from 3A, I have probably bought more stuff through Apple Puget Sound Program Library Exchange (A.P.P.L.E.) than anyone else. That is a club (now a cooperative, but it still feels like a club) and you have to be a member to buy from them. There is a joining fee (like our club) and annual membership dues. Total is \$49 U.S. but there is an extra charge for Australia, which I can't see in the copy of their magazine before me. Something like \$27 per year.

That is pretty expensive if you only want to buy stuff (though prices might still make it worthwhile). But that cost includes either CALL A.P.P.L.E. or MAC A.P.P.L.E., the club magazines. (You can have both for extra charge.) I haven't been getting MAC A.P.P.L.E. lately, but both are reckoned pretty good. (CALL A.P.P.L.E. was for ages outstandingly the best Apple // magazine and it still is close to the best from a technical viewpoint). From my point of view, Mac Tutor continues to be the outstanding Mac magazine.

Their address is: A.P.P.L.E. Co-op
290 S.W. 43rd St.
Renton, WA, 98055, U.S.A.

Since I have a current list of specials in front of me as I write, the following might whet some appetites. All prices in U.S. dollars.

ORCA/M 4.0 Macro Assembler (supports 65816, 6502, 65C02 and 65802 processors) \$63.95
Sider 20Mb hard disk drive \$795
Big MAC assembler \$20
800K 3.5 inch drive \$199
shipping for the 800K drive would be \$19.39, \$7.03 or less for the software. I don't know about the Sider - the pricelist suggests about \$120, but it might be too large for postal regulations.

Continued on page 19

As of today, \$100 U.S. is \$156.25 Australian, but that varies from day to day. You also have to worry about bank charges (around \$5 at banks I know) and customs duty and sales tax. I would also want a Sider insured if I bought one!

Q. From Allan Maroney (again)

I am a teacher/educational researcher. Are there any education-centred groups you can recommend contacting?

A. I think Allan meant overseas ones, but it is worth starting by pointing out that there are groups in Australia. To begin with, I have a small group at NSWIT mostly interested in mathematical software. There are people at Macquarie University and doubtless other places.

The NSW Computers in Education Group used to be at:
P.O. Box 148
Broadway, N.S.W., 2007.

I am no longer a member (fees fell due while I was overseas last year). I suppose that address could have changed. If it has, contact should be makeable via:

The Editor
Information Transfer
School of Teacher Education
Mitchell College of Advanced Education
Bathurst, N.S.W., 2795.

There are lots of groups overseas, particularly in the U.S. I listed 54 of them in my Interface Computer Encyclopedia a few years back, but I have not updated my information since then. The following are chosen as addresses that are unlikely to have changed since 1984, which is about when I could be confident of them.

ACM SigCUE Bulletin
PO Box 12015
Church St. Station,
New York, N.Y. 10249
USA

A journal from the Association for Computing Machinery which is definitely on the heavyweight side. You can probably find it in some of the larger libraries in Australia (I'd start looking at Sydney University).

Computer Using Educators
1776 Education Park Drive
Independence High School
San Jose, CA 95133
USA.

This group had a software clearing house as well as a magazine when last heard from. My notes called them "very professional" but I no longer know why I made that comment.

Q. From Lindsay Warton:

I have a 48K Apple II plus, with one disk drive, green screen monitor and a printer. How much would I need to add to the system to use Plusworks XM? I have Sandy's word processor and want to continue to use it. Will I be able to use ProDOS in the upgraded system?

A. To begin with, you obviously need both the Plusworks program and the 128K card from the club, as you mentioned. (It is possible to use the lowest grade Plusworks program on a 64K Apple to get Appleworks up with a small desktop, but it is hardly worthwhile to my way of thinking.) You would also need Appleworks itself - Plusworks only modifies the program, it does not replace it. You also absolutely have to have an 80 column card. The Taiwanese Videx clones are OK provided they do not have the switching capability. (The cheapest ones are good, the more expensive ones give problems.) Peter Garde, who often advertises in Applications, probably has them on hand.

It is not necessary to add a 16K card as well as the 128K card. You do not have to have a 2nd disk drive, but I would strongly recommend it. You won't need a keyboard modification as the 80 column card will give upper and lower case. (You might run through the Sandy setup menu to make sure that any 80 column card you get is compatible with the wordprocessor. If you have an old version, contact Sandy (phone number in the manual) and spend \$10 for the latest update. He would tell you on the phone which 80 column cards he supports.)

Any 64K Apple system should run ProDOS. You might find that you have to place the 128K card in slot 0, which may be the best place on other grounds anyway.

By the way, there is a new version of Plusworks (probably also soon obtainable through the club) that allows use of multiple RAM cards. I have tried it with success in my //e, using a RAMWORKS 256K card plus a standard Taiwanese 128K card.



THE TOY SHOP

A Review by John Paske.

Remember the good old days when Kelloggs and Sanatarium used to put cut-out models on the backs of Corn Flakes and Weet Bix. Well, don't despair The Creative Workshop people through Broderbund have put together a package called "The Toy Shop" which lets you personalise twenty different models.

Continued on page 20

These models range from a balloon-powered steam engine, or a clockwork bank through to a scale model of the Spirit of St. Louis. The models are scaled on the basis of construction difficulty from easy to medium to downright challenging.

In the easy category models such as a balancing jet, experimental glider and oracle are to be found. The medium category boasts a steam table saw, zoetrope and jet dragster, whilst for a real challenge the mercer raceabout, tractor crane or the medieval catapult should keep a hobbyist busy for some time.

Upon loading the program you are given the choice of browsing through the toys, choosing by name or setting up your printer. The variations that are available in terms of printers and interface cards are really quite extensive and I would be surprised if this program didn't work due to the incompatibility of either. Browsing through the toys one is presented with a picture of the model and a short description also. From here the toy can be printed or customised to your own specifications.

The customising varies from model to model, depending on what panels each model comprises of. With the antique truck for example customising can take place on van panels, cab, engine compartment, cab roof and fenders. In customising your model there is a choice of thirtysix paints and four point sizes. These paints can be utilised as is or modified in your custom arrangements. Having completed the painting process decals or transfers can now be applied, followed by whatever text you wish to add.

At this point you may wish to save your creation for posterity or go directly to the print toy section. Because some models have more than one page for their designs, a facility to print separate pages is now accessed, together with the number of copies to be made.

Next - your model will be printed. Because of the finely detailed printout, printing time will be considerable, however, the end result will be worthwhile.

After obtaining your printout it should then be stuck to the adhesive cardboard, cutting and bending as required in the instructions. Included in the package are some construction materials such as cardstock, wire, dowelling and string. To complete this package a comprehensive manual and three double-sided disks are included.

THE TOY SHOP is something new as far as computers are concerned and the program concept by Jim Calhoun and his team is to be commended. The program will run on any Apple II series with at least 64 K and one disk drive.

Program courtesy of Imagineering.

LETTERS TO THE EDITOR

Dear Mr. Hoffman,

We feel it necessary to reply to your comments in the October edition of "Applications" about the Applix OVERDRIVE demonstrated at the Apple User Group. We were asked to give a preview of our product - and admit it was rather a "disastrous" that a cable fault should bring such criticism of our product.

There are four main reasons why people have, and will, choose an OVERDRIVE for their Apple.

(1) It is exactly \$345 cheaper than the Unidisk 3.5. For \$495 tax included, the OVERDRIVE is supplied with the controller card. If purchasing a second drive, this saving is increased to \$709 over a two drive Unidisk 3.5 system. If the consumer also wishes for clock facilities, this is a \$69 option on the OVERDRIVE control card - the saving now reaching nearly \$1000 on a comparable Unidisk set-up (and a slot free, as you would need to install a clock card with the Unidisk).

(2) The OVERDRIVE is significantly faster than a UNIDISK - in fact 25% faster at reading and 50% quicker at writing.

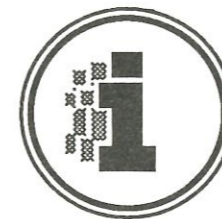
(3) The OVERDRIVE has ProDOS, Dos 3.3, CP/M and Pascal 1.3 support available right now, and inexpensively at that.

(4) It has the complete confidence and support our company and sports a full one year warranty.

ProDOS was designed as an operating system which was to be FLEXIBLE; lending itself not to SPECIFIC formats, but rather just a universal operating system. With this fact in mind we designed the OVERDRIVE. Applix have never claimed that the OVERDRIVE is Unidisk compatible. Nor, when we designed the drive, did we try to make it Unidisk compatible. The fact that it will accept ProDOS and Dos 3.3, CP/M and Pascal 1.3 files is surely indicative of its value - and should prove that it is far from being a "white Elephant" as you stated. Files can be transferred block by block from an OVERDRIVE to a UNIDISK, and vice versa, if the need arose. But most people move to 800K storage because their data files are unmanageable on 140K 5.25 inch disks, we state that the cost savings on an OVERDRIVE system should be reason enough for a fair review by yourself or the club.

Yours sincerely,

Paul K. Berger - Applix Pty Limited.



IMAGINEERING™

TECHNICAL NEWSLETTER

Reprinted by courtesy of IMAGINEERING

APPLE II PRODUCTS

SPRINTDISK

A memory expansion card for the Apple IIe, compatible with the Apple Memory Expansion card. Comes standard with 256K on board, and can be expanded to 1024K with standard 256K chips. Fully compatible with DOS 3.3, ProDOS and Pascal 1.3, as well as AppleWorks, PFS:File/Report/Write/Graph/Plan, Catalyst 3.0, MouseDesk, and Pinpoint. Software provided includes 800K Ramdisk support for DOS 3.3 and ProDOS, AppleWorks desktop expansion, and disk catching support for up to 14 drives. AppleWorks 1.3 automatically loads into the Sprintdisk.

MEGARAM PLUS

An expansion board for the Apple IIe that provides full compatibility with the Apple Extended 80 column card (including double-hires graphics), but has up to 1 megabyte of memory on board.

Comes standard with 64K, but upgradable to 1024K with standard 256K chips. Comes with Ramdisk software for DOS 3.3 and ProDOS, disk catching software, and software to use the MegaRamPlus memory as AppleWorks desktop.

MULTI-I/O

A multifunction board for the Apple IIe with a built in clock/calendar and two serial ports. The clock calendar is fully ProDOS and AppleWorks compatible (for time and date stamping files), supports 12/24 hour formats, and can generate real time interrupts. The board also comes with modem and printer serial ports that support baud rates from 50 to 19200 baud.

For more information on these products, contact Kim Medway at Imagineering on (02) 662 4499.

SIDEWAYS NOTES

There is a new version of Sideways for the Apple II (2.0). The following features apply:

1. Sideways is no longer copy protected.
2. There are three versions of Sideways included on the disk: Sideways for AppleWorks spreadsheets, Sideways for DOS 3.3 text files and Sideways for ProDOS text files.

SIDEWAYS FOR APPLEWORKS

With the new version of Sideways you can:

- △ Print an entire spreadsheet, selected rows, columns or a block of cells.
- △ Choose character size and print density.
- △ Vary the spacing between characters and lines.
- △ Control the size of the margins at the top, bottom, left and right.
- △ Add a header to appear on each page of the printout.
- △ Reprint title rows at the top of each page.
- △ Reprint title columns at the left of each page, with an automatic skip-over-perforation at the end of each page.
- △ Print normal cell contents or print formulas.
- △ Change the default location of the data disk and default printing options, so the new choices will automatically be loaded each time Sideways is run.
- △ Locate any cell by its coordinates or contents.

SIDEWAYS FOR DOS TEXT FILES

The DOS 3.3 version of Sideways is the same as the old one, except that it now supports the following spreadsheets:

Acecalc	Magicalc
Multiplan	Practicalc
The Spreadsheet 2.0	Visicalc
Visicalc- Advanced Version	

SIDEWAYS FOR PRODOS TEXT FILES

The ProDOS version of Sideways acts in the same way as the DOS 3.3 version but now supports the following programs:

AppleWorks	AppleWriter II
FlashCalc	Magicalc
PFS:File/Report	PFS:Plan
Word Perfect	

Imagineering™ 77 Dunning Ave, Rosebery NSW 2018

Applications



4

APRIL 1987

HIGHLIGHTS



PC87 Report



Apple Synthesiser

Enhance your Apple//e



Macintosh SE and //

Customise your menus



THE PUBLICATION OF THE
APPLE USERS GROUP (SYDNEY)
(Incorporated in N.S.W.)

**The Australian Personal Computer Show
1987**

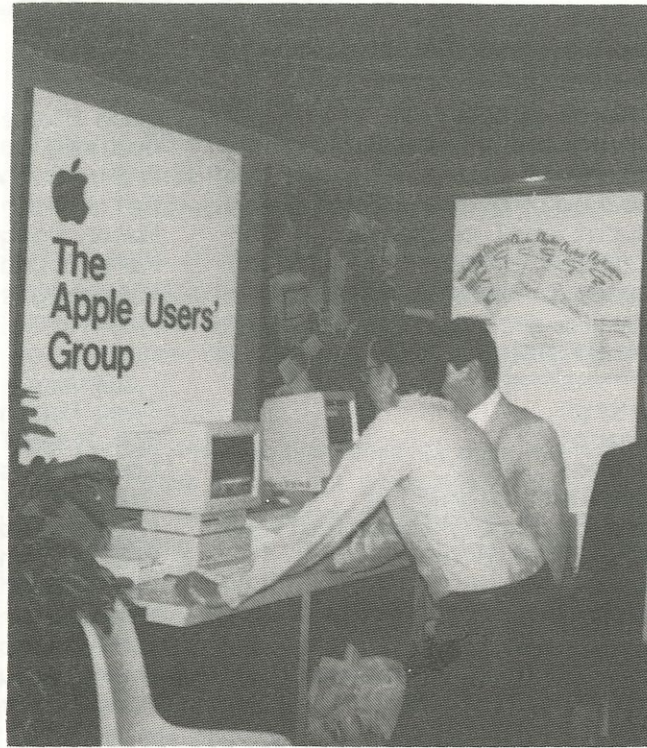
This year the organisers were unable to provide a User Group corner. As a result our details were sketchy, and wrong. My apologies for the faulty information given in the March Magazine about the dates and times. We ourselves were in chaos because of the change in times.

Apple Computer Australia came to the rescue, and provided space for the AUG on its stand - many thanks to them (particularly Peter Sandys, who always champions the User Group cause). We occupied the leading corner of the Apple stand, such that people had to walk past us to get to the rest of the Apple stand. This caused some confusion when we were unable to provide the necessary prices and advice about all the new Apple equipment. We were however, ambassadors for the Apple cause.

Because the space on the stand was limited to two computer stations, we only sold P.D. disks, magazines and - through Peter Kazacos' advance planning - and Apple // and Macintosh show bag.

Many thanks to the many club members who manned the stand during the four days. It was a pleasure to meet so many intra-state, inter-state, and even overseas members. We also converted many owners of Apple equipment to the AUG cause.

The PC87 show was busier than in previous years, and the Apple stand was always packed. The philosophy of Apple Computer, in providing space for it's software dealers to promote the Apple cause was as always - very successful. A large screen was



provided to give regular demonstrations of popular software, whilst there were many computers set up to give hands-on - assisted promotion. I saw many exiting new programs, both in the Apple// range as well as for Macintosh.

Other stands contained the usual range of IBM and compatibles. Desk-Top-Publishing and Local-Area-Networking were the most popular topics shown on most of the stands. Apple's computers were all networked with AppleTalk.



NEW PRICES

Many new prices have been released for Apple equipment. To enable you to keep up-to-date we have published these below, as they were issued at PC87.

Apple //c 128K Mono System	\$ 1090
Apple //c Mono Monitor	\$ 345
Apple //c Monitor Stand	\$ 80

	\$1,515

Apple //c 128K Colour System	\$1,090
Apple //c Colour Monitor	\$ 795
Apple //c Monitor Stand	\$ 80

	\$1,965

Apple //e 128K Mono System	\$1,445
Apple //e Mono Monitor	\$ 345
Apple //e 5.25 inch Disk Drive	\$ 550
Controller for 5.25 inch drive	\$ 139

	\$2,479

Apple //e 128K Colour System	\$1,090
Apple //e Colour Monitor	\$ 795
Apple //e 5.25 inch Disk Drive	\$ 550
Controller for 5.25 inch drive	\$ 139

	\$2,929

Apple IIGS 512K Mono System	\$2,095
Apple IIGS Mono Monitor	\$ 345
Apple 3.5 UniDisk	\$ 695

	\$3,135

Apple IIGS 512K Colour System	\$2,095
Apple IIGS RGB Colour Monitor	\$ 995
Apple 3.5 UniDisk	\$ 695

	\$3,785

ImageWriter II	\$1,195
----------------	---------

FOR SALE:

Programming the 65816 (incl.6502, 65C02, 65802) by Eyes & Lichty from the //GS development team. Suit Apple // machine language programmers. Brand new - retail \$47, sell \$30. Contact Robert Crago (02) 84-6448.

LOGITEK FT-5002 printer. Ideal for Apple II, or //e. Features include NLQ and proportional lettering. Rotated and enlarged graphics. Grappler+ card, two metre cable and Manuals included. 9 months old - will sell for \$395. Contact Ben Sebel (02) 327-4224.

Phone Answering Services

Apple Users Group Inc. - being a non-profit part-time involvement for it's officials, often has had difficulty coping with enquiries from members. A lot of needs to contact the AUG involve **Membership** or **Purchases**.

Two Phone numbers are now available to take your details. The phone answering services will record your enquiries or orders. Please make the details very clear - particularly your PHONE NUMBER - in case of difficulties. If your request is obvious, the response will be quick, as the tapes are checked regularly. If your enquiry needs a return call, it will be A.S.A.P.

To make best use of this service;

1. Write down your enquiry in a concise manner.
 - Detailed enquiry - start with your name and phone number - then explain your problem.
 - For membership - fill in the form if renewal is needed - to help with the details.
 - BP/Library - fill in the order form
2. Be sure of your CREDIT card number and Expiry date.
3. Read these details in the order on the form - be sure to include YOUR PHONE NUMBER.

24 Hrs. SERVICE PHONE NUMBERS:

MEMBERSHIP :- (02) 958-2709
PURCHASES :- (02) 681-3731

Letter to the Editor

After reading your review of PRINTMASTER in your magazine, I decided to purchase it. Upon receiving the program I took it home expecting to produce magnificent signs, etc., but alas after configuring the disk to the Imagewriter printer and Super Serial card, selected print and pressed return. In fact there was no response and the system hung.

I returned the disk to my dealer, who suggested I try changing the dip switches. After much frustration I returned to the dealer who rang the distributor. We were informed that PRINTMASTER did not support the IMAGEWRITER // and that there are no plans to update the program, so bad luck.

What company could make this kind of statement and expect to stay in business?

As a member, I would like to let other readers know of this problem with PRINTMASTER and the IMAGEWRITER //.

A. Jenkins B.Sc.Dip.Ed

Apple News from SEAHORSE.

The **Apple //65** now has a number of software packages available which make use of its marvelous graphics. Pictures on the Colour screen look like photographs. We have one on display in our Hurstville store that we have to clean the handmarks off the window. We now have a small "Public Domain" library on 3.5" disks for the //65.

The //65 by the way, will print with the Apple LaserWriter; can you picture your AppleWorks documents printed on the Laser? Not a bad combination! AppleWorks keeps getting better too.

Apple II TRADE-UP

Apple are offering a trade-up to schools and teachers who have Apple II, II+, or Apple compatible computers. The program works this way;

1. Schools can exchange an old Apple II+ for \$595, or a compatible for \$695. Apple will supply a new 128K Apple //e. (CPU only - you keep monitor and drive)
2. Teachers may exchange an old Apple II+ for \$695, or a compatible for \$793.80 on normal teacher purchase plan conditions.

As the tax excluded Government buying price of an Apple //e CPU is \$923, this is a very attractive offer, so if you have old equipment you'd like to update this is a good opportunity to do so. Contact Helen at Hurstville, or Dean at Miranda for more information.

Our **BULLETIN BOARD** is now running 24 hours a day on **(02) 57-2463**, so do give us a call. Contributions are always welcome.

ERRATA

1200/75 BAUD FIX For COMMUNICATIONS Cards.

A hitch in the data transfer between the editor's Apple and Mac, caused some errors. If you read this interesting article by Hans Mauchle in the March '87 edition of *Applications*, here are the corrections.

Page 16, Col. 2, end of Par.3 should read;
That is, the 6850 and 5303 can transmit simultaneously at different baud rates, whereas the 6551 cannot.

Page 16, Col. 2, Par.7 should read;
But what about the 75 baud? It occurred to me that 75 is 1/16th. of 1200. So all I had to add in between the receive clock pin and the transmit clock pin was a divide-by-16 counter. Simple!

Page 16, Col. 2, mid of Par.8 should read;
No more waiting endlessly for the bulletin board's response to a Control-S. Everything worked four times as fast as it used to.

FURTHER COMMENTS BY HANS MAUCHLE

1. Members should be aware that the AUG(Sydney) bulletin board has options for baud rates other than 300. The modem at the other end senses the baud rate you are sending and adjusts accordingly.
2. If you want to do the modifications described and need some help, Hans will be happy to talk to you. Phone him on 810-8521 - 6.00-9.00pm only please!
3. If you are completely daunted by all the technicalities, Hans will do the mod for you, for \$40. Contact him by phone to arrange details.



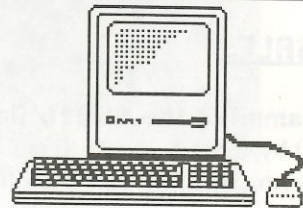
SEAHORSE COMPUTERS

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*****OUR NEW MIRANDA STORE IS NOW OPEN*****

Memo:

To School
Administrators
and Teachers

APPLEWORKS has seen sterling service in schools across the country, providing class lists, lists of students taking part in excursions, lists of teachers' subjects and assisting in all the other administrative aspects of running a busy school.

The reasons were easy to identify: ease of use and affordable, reliable hardware which could be customised on the spot to meet the needs of individual schools.

But while your school has been using Appleworks in the traditional way, decreases in the real costs of the Macintosh and the release of powerful software such as Microsoft Excel and Omnis 3 Plus have permitted the development of a program which permits all the school files to share data with each other.

This has meant greater accuracy, greater time savings and use of the Macintosh interface for maximum user friendliness.

And these days, Apples and Macintoshes are very much on speaking terms.

The winning entry, handling yard duty, library books and overdue accounts is...



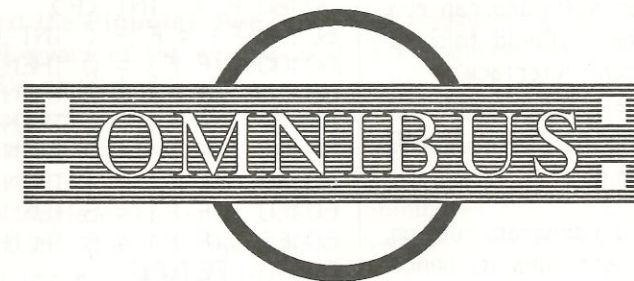
If your Appleworks system is running out of steam or your mini refuses to reveal its secrets...

SEVERAL years ago, a number of private schools decided to purchase mini-computers to handle their accounting needs. Few of these machines provide much assistance in the academic administration of the school, most of them need a trained keeper and involve costly regular maintenance fees. In short, the computer drives the user.

Like many Appleworks users, administrators in these schools are often unaware of recent hardware and software developments in the Macintosh world. Some, who have not reconsidered the Macintosh since it was first released, tend to think it incapable of handling "real" data.

In fact, the contrary is the case. In a school reporting application, the Macintosh can do in hours what a mini may take several days to complete.

But, equally importantly, now there is software available which puts school administrators back in control of the manner in which their data is managed.



OMNIBUS is an application written in OMNIS 3 Plus and is supplied in an unlocked form to schools.

Had OMNIBUS been written in a traditional computer language, few schools would have been able to afford it; none would have been able to customise to their further special needs. But the processing speed and comparative ease of use of OMNIS means all these things are possible.

Ask any of the State, Catholic or Independent schools using it from Murwillumbah in the north to Cooma in the south, St Johns Park in the west to Manly in the east.

The program has been demonstrated at Dealers' workshops, and at the last year's Leura conference. All the good ideas have been included. It is now into its third term of use at Chatswood Catholic Girls' High where it was developed and has handled the full annual gamut of duties without fuss.

If your school's attempts to computerise its administration have been accomplished with a gnashing of teeth and the payment of vast amounts of money, we can say it does not have to be that way. And remember OMNIS 3 Plus supports the LaserWriter: your school reports will never look better!

OMNIBUS is another locally devised program developed within the profession it is designed to serve using...



For more information, contact any Sydney Apple Education dealer or selected country dealers or call Richard Ure on (02) 868 3778.

The Time Of Day

By Keith Jeeves

It is common knowledge that **PRODOS** supports the date and time, either directly, through reading an on-board real time clock, or indirectly through inspecting time and date bytes set manually from a utility (refer to my article Setting Prodos Time and Date in the July 1985 issue of APPLICATIONS). There are many other similar utilities to do the same thing but it is important to realise that all they do is read the date and time bytes at addresses 49040-49043, THEY DO NOT UPDATE A REAL TIME CLOCK.

The Clock Read routines are already built into Prodos, and they are run when a disk access is made, but calling the Read routine from your own program is simple and can be done at any time. The procedure is to call the MLI (Machine Language Interface) Command Handler which is a 'catalogue' of built in routines for disk access, file handling and a few miscellaneous things like reading the clock. When you call the MLI (which lives at \$BFO0) and tell it the command number you want, it will go away and run the routine for you. Most of these routines expect you to pass parameters but the clock read (command number \$82) does not. The real power of this sort of architecture is that the built-in machine language routines can be changed beyond recognition in future revisions - but provided that the MLI command handler remains the same, earlier software can run the routines without modification. (Could this be Gareth Powells elusive 'Translucent Interface' ? ... Actually, the dictionary defines translucent as distorting, so a Translucent Interface must be an interface which distorts the signal).

Now to the good stuff. The following program sets up the call to the MLI from BASIC and runs it, hence updating the Date and Time bytes. A machine language version can be derived from the listing, it is only 7 bytes long and can reside anywhere. GS owners note that this program works with PRODOS 8 which has an entirely different clock reader to the older PRODOS 1.1.1., but the MLI is told to run it in exactly the same way and store the bytes in the same place. Ain't that somet'n.

```
60000 REM INSTALL CALL TO MLI TO RUN
      THE CLOCK DRIVER
60010 REM JSR $BFO0 TO CALL MLI COMMAND
      HANDLER
60020 REM SEND GET TIME COMMAND ($82)
60030 REM $00 $00 DUMMY BYTES
60040 REM $60 RETURN FROM SUBROUTINE
60050 REM
60060 POKE 768,32: POKE 769,00: POKE
      770,191: POKE 771,130
```

```
60070 POKE 772,00: POKE 773,00: POKE
      774,96
60080 CALL 768: REM RUN IT AND UPDATE
      THE TIME & DATE BYTES
60090 RETURN
```

Once the Date and Time bytes are set (either automatically or manually) and the Year, Month and Day values are derived, the user program can use them as it likes. It is however, icing on the cake to work out the day of the week and include that too. The mathematics to do this is called Zellers Congruence and it corrects for any date in the Julian Calendar. It returns a number from 0-6 corresponding to the days of the week from Sunday to Saturday.

The following subroutine will take values of Y, M, D from the calling program and return the day of the week as X\$.

```
60100 REM THE YEAR, MONTH NUMBER & DAY
      IN MONTH ARE;
60110 REM DX, M AND K RESPECTIVELY
60120 REM WORK OUT DAY NAME WITH
      ZELLERS CONGRUENCE
60130 CX = 19 :REM FOR THE 20TH CENTURY
60140 M = M - 2 : REM MAR IS MONTH 1
60150 IF M = 0 THEN M = 12:DX = DX - 1
      REM FEB IS MONTH 12 OF PREV. YEAR
60160 IF M = - 1 THEN M = 11:DX = DX - 1
      REM JAN IS MONTH 11 OF PREV. YEAR
60170 F = (2.6 * M - .2) + K + DX + (INT
      (DX / 4)) + (INT (CX / 4)) - (2 * CX)
60180 F = INT (F)
60190 F1 = F - ( INT (F / 7) * 7)
60100 IF F1 = 0 THEN X$ = "SUNDAY"
60110 IF F1 = 1 THEN X$ = "MONDAY"
60120 IF F1 = 2 THEN X$ = "TUESDAY"
60130 IF F1 = 3 THEN X$ = "WEDNESDAY"
60140 IF F1 = 4 THEN X$ = "THURSDAY"
60150 IF F1 = 5 THEN X$ = "FRIDAY"
60160 IF F1 = 6 THEN X$ = "SATURDAY"
60170 RETURN
```

Modem Offer

The AUG(Sydney) has been offered NETCOMM 2400 Baud Modems at special prices.

This modem - although superceded - has a host of features as listed below:

Both 1200 and 2400 full duplex - Auto dial and auto answer - Auto ranging -Auto disconnect - Works with both Apple and Mac machines.

Originally this modem sold in the \$800 - \$900 bracket, however the group is in a position to offer this modem for \$475 without cables or \$500 with cables (incl. tax). For more details inquire through Bulk Purchase. (02) 681-3731.

UNIDISK 3.5 from ----- ----- Apple Computer

Review by Mike Nagle.

I have been able to borrow an **Apple Unidisk 3.5** for the past month, and I must say I am extremely impressed with it.

When Apple first released the Unidisk 3.5, I was not enthused with it for two reasons - one being, that it only operated with ProDOS, and the second it's price. It did not seem to give you value for such a high outlay.

After actually using it with my Apple //c, I can honestly say that my two objections to it have well and truly been shot down in flames. When I first installed the unit I sat down and worked out which programs (PROdos) I used the most:

Appleworks c/w Pinpoint Desktop Accessories.
A Document Spelling Checker and Copy II Plus.

I then followed the instructions that came with these packages on how to copy them to a 3.5 Disk. I booted the 3.5 disk and found I had all these programs on the one disk with still space left.

Anyone who uses **Appleworks** with the **Pinpoint Desktop Accessories** and the **Pinpoint Pop-up Spelling Checker** is well aware of the amount of disk swapping it entails. The Unidisk 3.5 eliminates all of this and - runs your program much faster than the conventional 5.25 disk drive.

For example; when using Appleworks on a 5.25" disk, you first must insert the Start-Up disk, then you are told to insert the program disk. With the Unidisk you just boot Appleworks, hit the space bar and you are presented with Appleworks main menu.

One thing that is highly recommended when copying applications to a 800K - 3.5 inch disk is that you copy each application to a sub directory on the disk, as this allows you to use the full extent of the disks storage capacity.

After using the 3.5 disk for a while I found that whenever I quit an application, i.e. Appleworks, I was asked to enter the path name of the next application I wanted to run. This lead me to recall that I had read in certain Apple publications, that there were desktop packages available which allowed you to have all the applications entered onto the desktop thus eliminating the necessity of always having to enter the path name.

One of these packages is **Pinpoint's Run Run**, so I got my hands on this program and proceeded to copy it to a 3.5 disk. I then booted it, and from the Run Run menu selected the "Add an Application" option, followed the instructions and copied all the previous mentioned programs to Run Run.

When rebooting Run Run I was presented with the list of applications that were installed on the disk, and all that was required of me was to select whichever application I wanted.

When I quit a particular application, I was taken back to the Run Run menu, enabling me to select the next program I wanted without have to remember or enter the path name of any of the programs on the disk. By using 5.25 disks for these programs I would have had to insert 6 disks, whereas with the Unidisk 3.5, I now only have to load the one 3.5 disk, with storage left on the disk to add more applications to.

When copying programs to this type of disk it is recommended that you group programs which you would normally use together, as you find it eliminates the disk swapping you are normally are faced with, using the standard 5.25 disk.

As for using DOS 3.3 with the Unidisk 3.5; this problem has been partially overcome with a program called **UNIDOS 3.3** from **Microsparac Inc.** The reason I said partially is because UNIDOS 3.3 will not work with many commercial software written in DOS 3.3. or Applesoft, and as I have had little experience with this package I am at the present time unable to pass judgement on its usefulness when running DOS 3.3 on the Unidisk 3.5.

I can highly recommend the Unidisk 3.5 to anyone who is heavily into using multiple applications such as Appleworks - combined with Pinpoint, as it eliminates the frustration and time consuming disk swapping that is required.

Hopefully the day will come when someone will produce a package that will allow you to run all DOS 3.3 and Applesoft programs on the Unidisk 3.5 - making it the complete answer to all Apple II users. Even at a cost in excess of \$600, it really is a worthwhile acquisition. I for one am presently saving every cent so as I can become a proud owner of a Unidisk 3.5.

On a scale of ten I would rate the Apple Unidisk 3.5 a nine, with the only drawback being the limitation of using DOS 3.3 with it.

HOMEWORKER

A review by Kellie-ann Paske.

Homeworker is an integrated program designed to help students organise and plan their study more efficiently. Homeworker integrates six different modules into the one package. This includes such functions as

Textwriter; a word processor.

Outliner; a planning module.

Flash Card Maker; a memory trainer.

Calendar; organises obligations, exams etc.

Grade Keeper;

a compiler of mark and results statistics.

Calculator; which performs all the basic functions.

Textwriter is a word processor with most of the usual word processing features. This allows you to write assignments, projects and homework quickly and easily as well as presenting your efforts in a legible form for assessment.

Outliner organises notes and ideas into point form. These can then be elaborated on, changing their structure as ideas develop. From this basic plan, essays, formal study notes and assignments can be written.

Planning schoolwork prevents the student from mixing facts, repeating points and from causing confusion to their poor teacher!

Flash Card Maker lives up to its name and assists in memorization tasks by creating flash cards. These can be viewed on the screen either in order or randomly to efficiently test memory. Flash cards may also be printed for additional study but must be folded and glued to become double sided.

Calendar records important days, exams, due dates for assignments, birthdays etc. These dates are shown with either a dot or an exclamation mark, depending on degree of importance. Each day has ample space for entering events, which are shown in separate "zoom boxes", below the actual month format.

Grade Keeper is as American as it sounds and is based on the complicated American grading system. Grade Keeper could be used with the Australian marking system but with some degree of difficulty. Basically, it records marks (known as grades in the US) for each piece of work in each subject which are then "weighted" and averaged into a final subject mark. An average overall mark is then calculated from all the subjects to give you a final "grade". Grade Keeper helps students to keep track of their

performance in certain subjects and in their overall schoolwork.

Calculator performs as an ordinary pocket calculator, with multiple memory, constant division and multiplication, as well as conversion tables. Calculator may be accessed from any homeworker module, making it very useful for assignments needing conversions, calculations and the like.

Although Homeworker has many good points, it also contains some faults which can become very frustrating at times. One of these occurs in textwriter - the problem being that when one is using the backward and forward arrows, the insert cursor (the one underneath the text) cannot be seen unless you stop. This can be irritating during correction as one must always be stopping to see where the cursor is! Another fault possessed by textwriter is that of having a very slow delete, particularly in demonstration mode (included on the reverse side of the disk).

Outliner and flash card maker are easy to use, although, like much of homeworker, they are not self-explanatory and require reading of the manual before use.

Calendars may be printed and include corresponding entries from the "zoom boxes". Calendar is simple to use yet very helpful.

Grade Keeper's faults include those already mentioned (i.e. its complex nature). Besides this there appear to be no major irritations involved in using it.

Calculator is time consuming to use in that you must use the arrows in order to multiply and divide (i.e. those functions not on the keyboard). Besides this annoying fault, calculator is one of the few modules which does not require much manual-reading to use.

Besides software, Homeworker offers:

- * a suede-finish, upholstered binder.
- * a student organiser involving places to store calendars, a personal directory, punctuation, spelling and maths rules, U.S presidents and capitals, equivalents, conversions etc.
- * nine subject dividers with tabs (to keep subject notes separate and easy to find)
- * a large Homeworker pad.
- * a Homeworker double-ended pen.
- * a Homeworker ruler and pencil (this is starting to look like advertising!)
- * a study guide called "How to Study for Success" (95 pages)
- * a disk holder (for two disks)
- * stickers for two data disks.
- * and, of course, a manual!

Continued on page 14

BACKUP ESSENTIAL DATA DUPLICATOR

Back up your copy-protected disks with **ESSENTIAL Data Duplicator 4 PLUS** ■

EDD 4 PLUS is new technology, not just 'another' copy program. The **EDD 4**

PLUS program uses a specially

designed hardware card which

works with your disk drives to

back up disks by accurately

copying the bits of data from

each track. Don't be fooled . . .

no other copy-program/system

for Apples can do this! ■ In

addition to backing up disks, **EDD 4**

PLUS includes several useful utilities such

as examining disk drives, certifying disks,

displaying drive speed rpm's, plus more!

■ **EDD 4 PLUS** runs on Apple II, II Plus

(including most compatibles), and IIe,

and is priced at \$190.00 (duodisk/

unidisk 5.25 owners must add

\$32.00 for a special cable

adapter). ■ A standard

EDD 4 version which doesn't include any

hardware is available, and can be used

on Apple IIc and III (using emulations

mode) and is priced at \$125.00.

■ Bankcard and Master

card accepted by phone.

Add \$3.00 to all

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ling. All orders must be prepaid.

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WARNING: EDD is sold
for making archival
copies only

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VIATERM supports any 1200/75 modem including Apple, Avtek Mini Modem II, Cicada 312, NICE, Sendata and many more.

Exclusive IIGS Features include:

- Full Colour or Monochrome
- Date and Time stamping of all Screens
- Keeps a complete log of all screens received and stores them in memory for access during and after use.
- Stores up to 168 screens on 512k system and up to a massive 672 screens with the 1 megabyte system.

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- Self-Configuring
- Supports Auto-Dial
- Save up to 550 screens per 3 1/2" diskette
- Save up to 75 screens per 5 1/4" diskette
- Auto-Logon
- Fast Disk Access
- Screen Save, Print and Load

One software package suits Apple II+, IIe, IIc and the NEW Apple IIGS. Package comes complete with 3 1/2" and 5 1/4" program diskettes and comprehensive manual in a presentation case.

Available through leading distributors and selected Apple dealers.

VIATERM from BIZAP

Enquire Now (02) 646 1497

Available from AUG BulkPurchase \$119
(Members' Special Price)

Homeworker, continued from page 12.

All these (excepting the study guide, pens, pencil and ruler) are all punched with three holes to fit within the binder.

Also included is a sixty day warranty and a back-up disk application which are standard on all Davidson Software, of which Homeworker is an example.

Homeworker is a good all-round product which performs to its claims.

This program would be suitable for use by most high-school and university students (I should know, I am one!) if they are prepared to work hard at school. Homeworker would only be good value if used frequently, at A\$158 you can decide for yourself.

Thanks to Dataflow Computer Services for the preview program.

THE APPLE SYNTHESIZER

By Arthur Street

The Apple // has never been envied for its sound capabilities (I'm not talking about the GS). But following is a small program to make the most of what there is on //+s,Es and Cs.

USAGE:

From BASIC, you can simply type- POKE 6,pitch: POKE 7,voice: POKE 8,duration: CALL 768 to generate a note. Pitch can range from 0 to 255 (0 is a rest), where 1 is very high and 255 is very low.

Voice is a number from 0 to 4 where

0 = "Passive" - very soft tone

1 = "Harmony" - much like a violin

2 = "Flat harmony" - like two neighbouring keys being hit on a piano at once.

3 = Clear tone - the classic computer beep

4 = Whistle - named so because it sounds so.

Duration is a value from 0 to 255, where 0 is non-existent and 255 is about a second or two. Another way to end the note is to press a key.

This is the easy way to use the program, but it restricts you to the 5 voices: a second way exists and can be accessed as follows:

POKE 6,pitch #1: POKE 7,pitch #2: POKE 8,duration: CALL 807

You shall no doubt find that by varying the two

pitches you can get some interesting sounds.

Music is generated on the Apple by clicking the speaker, pausing, and repeating the procedure for a while. At least this is the way that ctrl-G (the bell) and similar tones are made.

This program works by adding an extra step: a second click and pause, of differing length. That is why two pitches must be specified in the second usage above. The "voices" are simply the tolerable combinations of pitches, with names.

Passive: pitch2=pitch1

Harmony: pitch2=pitch1-1

Flat harmony: pitch2=pitch1+2

Clear tone: pitch2=0

Whistle: pitch2=1

(another voice could be drone, where pitch2 = 255. It can be swapped with whistle by POKE 801,136)

The program is completely relocatable, and uses locations \$6-\$9 and \$1C-\$1F.

To type in the program, if you don't have an assembler, enter the code to the left of the line numbers, eg. the first part you'll be entering will be: 300:A6 06 A4 07 F0 ...

At about line 60, you should press return and type a colon (:), then continue with the two digit hex numbers.

LISTING

```

0300      1 * Apple Synthesiser
0300      2 * by Arthur Street
0300      3 *
0300      4          ORG $300
0300      5 *
0300      6 SPEAKER EQU $C030
C000      7 KEYBOARD EQU $C000
0300      8 *
0300      9 PITCH EP2 $6
0007     10 VOICE EP2 $7
0007     11 PITCH2 EP2 VOICE
0008     12 DURATION EP2 $8
001C     13 REST1 EP2 $1C
001D     14 REST2 EP2 $1D
001E     15 PTR EP2 $1E
001E     16 P1 EP2 $1E
001F     17 P2 EP2 $1F

```

Here the voice is translated into two pitches X is left as pitch #1,Y is zero.

```

0300     18 *
0300 A6 06 19 SETP2 LDX PITCH
0302 A4 07 20 LDY VOICE
0304 F0 0E 21 BEQ PASSIVE
0306 88 22 DEY
0307 88 23 DEY
0308 F0 0F 24 BEQ HARM2
030A 88 25 DEY
030B F0 18 26 BEQ TONE

```

Continued on page 15

```

030D 88 27 DEY
030E F0 11 28 BEQ WHISTLE
E.g. Harmony's pitch2 is one less than the specified pitch, unless it was a rest
0310     29 *
0310 8A 30 HARMONY TXA
0311 F0 01 31 BEQ PASSIVE
0313 CA 32 DEX
0314     33 *
0314 86 07 34 PASSIVE STX PITCH2
0316 B8 35 CLU
0317 50 0E 36 BUC MUSIC
0319     37 *
0319 8A 38 HARM2 TXA
031A F0 F8 39 BEQ PASSIVE
031C E8 40 INX
031D E8 41 INX
031E B8 42 CLU
031F 50 F3 43 BUC PASSIVE
0321     44 *

```

You could change line 45 into a DEY if you wanted a drone instead (321:88)

```

0321 C8 45 WHISTLE INY
0322 8A 46 TXA
0323 F0 EF 47 BEQ PASSIVE
0325     48 *
0325 84 07 49 TONE STY PITCH2
0327     50 *
Play a dual-pitch note
0327 A9 00 51 MUSIC LDA #0
0329 85 09 52 STA DURATION+1
032B A2 07 53 LDX #7
032D 06 08 54 MUSIC2 ASL DURATION
032F 26 09 55 ROL DURATION+1
0331 CA 56 DEX
0332 D0 F9 57 BNE MUSIC2
0334 A5 06 58 LDA PITCH
0336 85 1E 59 STA P1
0338 85 1C 60 STA REST1
033A A5 07 61 LDA PITCH2
033C 85 1F 62 STA P2
033E 85 1D 63 STA REST2

```

```

If a key has been hit, end note
0340 2C 00 C0 64 MCHK1 BIT KEYBOARD
0343 30 2D 65 BMI ENDNOTE
0345 A5 1C 66 LDA REST1
0347 F0 0B 67 BEQ MCHK2
0349 C6 1E 68 DEC P1
034B D0 07 69 BNE MCHK2

```

```

BIT $C030 beeps the speaker
034D 2C 30 C0 70 BIT SPEAKER
0350 A5 06 71 LDA PITCH
0352 85 1E 72 STA P1
0354 A5 1D 73 MCHK2 LDA REST2
0356 F0 0B 74 BEQ DCHK
0358 C6 1F 75 DEC P2
035A D0 07 76 BNE DCHK
035C 2C 30 C0 77 BIT SPEAKER
035F A5 07 78 LDA PITCH2
0361 85 1F 79 STA P2

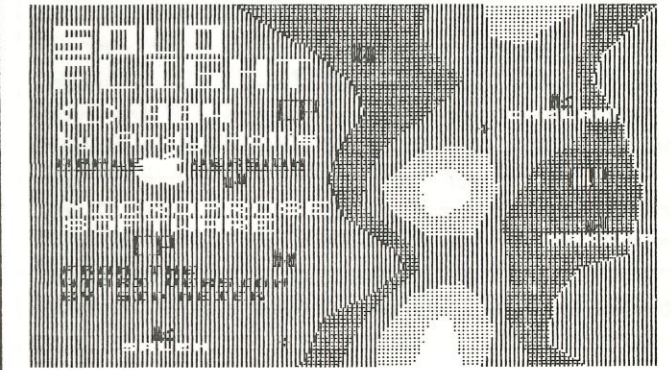
```

```

See if the note has ended
0363 A5 08 80 DCHK LDA DURATION
0365 D0 06 81 BNE D2
0367 A5 09 82 LDA DURATION+1
0369 F0 07 83 BEQ ENDNOTE
036B C6 09 84 DEC DURATION+1
036D C6 08 85 D2 DEC DURATION
036F 88 86 CLU
0370 50 CE 87 BUC MCHK1
0372 60 88 ENDNOTE RTS

```

SOLO FLIGHT ----- ----- by MicroProse.



Reviewed by Robert Brown.

Requirements:

- An Apple II computer with at least 64K.
- One Drive, Joystick.

Optional: - Colour Monitor

Solo Flight is a flight simulation where you as the pilot has to land, take-off, deliver mail and fly by instruments. It is a lot easier to land and take-off than Flight Simulator II and was designed with fun in mind. It has real-time three dimensional graphics, full cockpit instrumentation including Vor's, Instrument Landing System (ILS), make it a streamly good program to get drawn into. It includes four difficulty levels, one emergency procedure practice and night flying. It also includes a Mail Run game for you to deliver mail to over 42 different airports in such diverse geographical areas as Texas, Massachusetts, Colorado, Washington State, Kansas, and Michigan.

Once you start the program, you pick what state you want to fly in and whether or not you are a student, novice etc. Next, a screen is loaded in showing you your navigation chart of the state that you picked. Pressing (1) gets you into your option mode and you can load your plane with fuel and mail (if you selected Mail Run from the first menu, otherwise you just start with a full tank and get to fly to any different airports within the state). Once you have selected your mail, the computer will pick an airport at random for you for your first delivery. Each time you land, the computer will choose another airport for you.

Once you have loaded up you are positioned on the runway ready to take off. Pressing any of the number keys revs the engine up to a particular speed (9-

Continued on page 16.

Solo Flight, continued from page 15.

Fastest, 0-Turn off engine). By now you are rolling down the runway and once you have reached 60-90 knots you can take off by pulling the joystick back. The joystick controls your up/down movement and your left/right movement.

When you land the plane, you are asked for a MCSC (Mail Carrying Security Code) for the number given. An example is if the number given was 7 then you look throughout the manual for a table with the letter 7 in it. The answer for this is 'C'. If you enter the correct code, you are assessed on your time, flying capabilities, landing procedures etc to get a final score. You are then given another airport and off you go again to try and land and continue on until you have completed all of the airports.

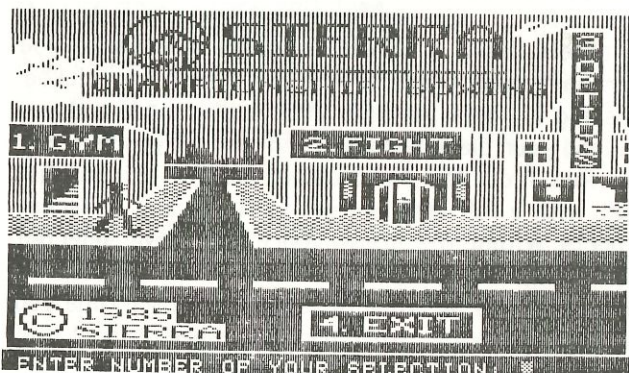
If you manage to crash your aircraft, a message is displayed of why you crashed and the route you took is displayed on the screen. Other games include Night Flying where you have to fly by instruments and land by instruments, Instrument Flying which is similar to Night Flying but you fly in the day with low flying clouds, rain etc.

The manual that comes with the program is 31 pages long and has some interesting comments and facts. Overall, Solo Flight is a good simulation for people that couldn't come to grips with FSII and for those that would like to have a bit of fun while they learn.

Review copy courtesy of OziSoft, Sydney.

CHAMPIONSHIP BOXING ----- by Sierra

Reviewed by Robert Brown.



Requirements:

- Any Apple computer with at least 64k.
- One drive - One or Two players.

Optional: - Colour Monitor.

Championship Boxing is an action and strategic

boxing game that puts you into the ring. You choose from any of history's World Heavyweight Champs, or a list of toughest contenders. Detailed statistics on each boxer reveal his weaknesses and strengths to you. You can create your own contenders - build a superman who might devastate even the boxing "greats", or enjoy a "featherweight" bout with cartoon characters or even a boxing kangaroo.

The graphic opening title page offers four options. They are: Gym, Fight, Quit, Options. Pressing one will get you into the gym. From this point, new Boxers can be added to the roster of champions or you can change the statistics of the boxers that are already there. If you create a boxer from a well known champ, you should find out as much info as you can as CHAMPIONSHIP BOXER will fight exactly by the information given.

Although the ready-made boxers are all Heavyweights, you can of course make Lightweight boxers or turn your favourite heavyweight into a lightweight and see how he can handle the ring. Once you create a boxer you will then be asked to supply answers to 22 different questions. E.G. his Name, Age, Weight, Accuracy, Best Punch, etc. Once you have completed entering your boxers statistics you can save it to the disk.

Leaving the gym and going into the options mode which lets you change various parts of the game. Some examples are, the Scoring system, Length of the round, Number of rounds, Playing mode (ie. whether or not you are going to play or the computer plays itself.), and the Number of players. After you have changed your options you can then go to the Fight Arena and start your fight. If you choose the 'STRATEGY' mode, you act as a trainer and manager for the heavyweights. You can make the between-rounds decisions such as 'Rest on the ropes' or 'Go for the knockout'. Then when you switch into the Arcade mode - you control every movement of the boxer of your choice.

You can play against your friend or the computer.

Championship Boxing comes with four manuals. The How To Play manual, a Program Guide (which shows you the keys to use), the Boxing Clinic (which tells you how to box and what each punch represents), and The History Of Boxing (which presents some interesting facts about where boxing originated and where its gone to today).

Championship Boxer is a good program if your are into boxing or just want to have fun having a duel between your qualities and your friends without anybody getting hurt. Dad's could even put in Joe Fenech's statistics and his opponents to see the odds at one or the other winning. (It's a thought).

Review copy courtesy of OziSoft, Sydney.

POINT TO POINT ----- ----- By Pinpoint Publishing.

Reviewed by Robert Brown

Requirements:

- An Apple IIe, IIc or IIgs.
(should be an Enhanced IIe but not necessary).
- One or Two drives.
- A Smartmodem or Dumb modem.
- A standard telephone line.

Optional: - High capacity drive. - Hard disk.
- Printer. - Clock.
- Extended, high memory Ram card.

Point To Point is one of the latest pieces of software that goes hand in hand with the infamous Pinpoint. Point To Point is a stand-alone communications program that can combine the talents of Pinpoint or use Point To Point - from Pinpoint. If you have a High Memory Ram Card, you can load all of Pinpoint - all of Appleworks - and all of Point To Point all in one session and switch between each at lightning speed. Point To Point recognises the RAM card and automatically loads itself into the card and then performs as a desktop manager until you are ready to use it. When you are - it switches to a powerful communications program with qualities like Appleworks. For example, All of Point To Point's menus appear as file cards as Appleworks, it also displays its files as AWP, ADB, ASP, TXT, BIN, SYS and the amount of memory each one takes.

Upon booting Point To Point, you are confronted with the system configuration menu. From this menu you can select which Modem and interface card you are using, which Printer and printer card you are using and whether your printer needs linefeeds etc. Each time you boot PTP you will get this menu (one bad point). Although you get around this by typing NO to the question on whether or not you want to change the configuration.

From the main menu, you can pick up to eight different sub-menus to go to. These include Dialling, Answering, Disk Activities, Macros, Buffer Editing etc. If you go into dialling, you are asked to pick out a phone number and then the modem will start dialling. If you have a dumb modem, the program will wait (approx 30 seconds) for a carrier.

If it does not get a carrier a beep sounds and a message is displayed.

After connection, the screen turns into what you would see if you were a sysop. The first two rows are the system's status while the rest of the lines are for your text. Once you make a connection the top

line displays 'Connected'. The next row has a real elapsed time display, ten commands that are operable and the amount of room left in your buffer. An empty buffer has about 17213 bytes available. The time is shown in minutes and is very accurate apart from the fact that the minute might be different lengths. (I timed it three times. The first time was 1.5 minutes, the next was three minutes and the third was 2.5 minutes which gave 7 minutes. I also timed it by a real clock and that gave 7 minutes also.). The ten commands are operable at any stage by typing Open-Apple and a number from 1 to 0. The Commands are: Cat, DSend (disk send), Xmodem, BSend (buffer send), Macro (more on this later), Trap (turn buffer on), Break (send break of 233ms), Print (print file) and Hang (hang up). If you have a printer connected, you can press Open-Apple H and get a screen print (just like Appleworks).

Also, if you have an Autoanswer modem, the status display will tell you how many phone calls have been recieved.

One very powerful feature of Point To Point is the ability to use Macros. Quickly - a macro is one or a group of instructions that can be performed to do certain tasks. The macros in PTP are very powerful in that they can log you onto a bulletin board right up to the main menu without you having to lift a finger. If a '+' is placed after the telephone number, the macro number one out of sixteen will be executed and by placing a +1 after the first macro the next line will be executed and so on. Therefore a 3 line macro can input your password, account number and the command to get you to the first menu. Even when you use a dumb modem, and you make a connection with a telephone number with a plus after it, you can use the macro command. There are certain macro commands that will wait for certain text E.G. /WBBS'L.

In this example, the '/W' means to wait until the letters 'BBS' appear. Once they have responded with the letter 'L', for Logon.

Because Point To Point is not copy protected, (you pay for it - over \$200), it supports Hard Disks, Ram Cards and High Density Disks. I have tried it on all of them except the Hard Disk and find it very simple to use and very convenient on a Ram Card.

For those that would like a serious communications package that is compatible with Applework's File Types, Prodos Commands and Files, Pinpoint and every different modem and printer you can connect to your Apple, then this is the program for you.

Thanks to Imagineering for the review copy.



Character Set with Mouse Text Icons

Reprinted from Apple // Technical Notes,
by courtesy of Apple Computer Australia.

This technote explains changes made to the Apple //e ROM so that it will support text icons. These icons will be used by the new 'mouse' interface tool kit.

SOME CURRENT SOFTWARE MAY NO LONGER FUNCTION CORRECTLY WITH THE NEW CHARACTER SET. UNDER THE RIGHT CONDITIONS AN INVERSE UPPERCASE LETTER WILL NOW BE A GRAPHIC ICON.

The following will help you identify if the changes will affect you or not.

1. If your program is written entirely in BASIC or Pascal or your Assembly Language program calls the COUT routine to put characters on the screen you will not be affected. The only exception would be if you are using BASIC pokes to Poke inverse upper case characters directly to the text screen.

2. If your program is using the standard character set (checkerboard cursor) you will not be affected.

3. If your program is using the alternate character set (solid cursor) and is directly POKING (storing) values to the text display area you will have problems if your character values are from 64 (\$40) to 95 (\$5F). These values now display inverse uppercase characters plus some special characters. In the future these values will display graphic icons. To recreate the original displays (which include inverse uppercase plus some special characters) use values in the range from 0 (\$0) to 31 (\$1F) rather than the values from 64 (\$40) to 95 (\$5F). Note that using these lower values will work properly on the current character set.

Apple are excited about this new extension to the Apple //e's alternate character set. The new icons are similar to those used in LISA and will enhance the use of pointing devices such as a mouse on the Apple //e. If used effectively, the icons, in connection with pointing devices, can significantly simplify the human interface of your programs.

The ways to access these ICONS from various programming languages are described below. Included is a sample of the current ICON set.

The following method will probably be used for showing ICONS from BASIC:

1) Set up the alternate character set by POKING

49162 (\$C00A) with any value then doing a PR*3. If an 80 column card is present you may remain in 80 columns. If there is no card or you want to be in 40 columns PRINT CHR\$(11).

2) PRINT CHR\$(27) to enable the mouse characters.

3) Use the INVERSE command to set inverse mode.

4) PRINT the appropriate capital letter for the desired ICON.

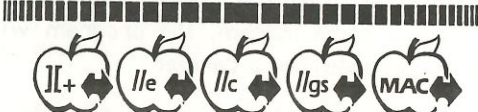
Disable the ICONS by PRINTing CHR\$(24).

Machine Language programs will follow the same procedure as BASIC. Use calls to COUT to perform the print operations. The following is a sample Machine Language program which will 'print' two ICONS followed by the two inverse uppercase letters that have the same ASCII values.

```
START  STA  $C00A ;FLIP IN 80 COLUMN FIRMWARE
      LDA  *$A0 ;USE A BLANK TO
      JSR  $C300 ;TURN ON VIDEO FIRMWARE
      LDY  #0 ;INIT COUNTER
LOOP   LDA  STR, ;GET VALUE
      JSR  $FDED ;SEND IT THROUGH COUT RTN
      INY
      CPY  STRLEN
      BNE  LOOP ;=>NOT DONE YET
      RTS
STR    DFB  $1B,$46,$47,$18,$46,$47
      ;ICONS ON, SHOW, ICONS OFF, SHOW
STRLEN EQU *-STR ;LENGTH OF STR
```

NOTE: 'printing' ICONS on the text screen by directly poking or storing ICON values into the text buffer is not supported.

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B-GRAPH

----- from Batteries Included.

Reviewed by Mike Nagle.

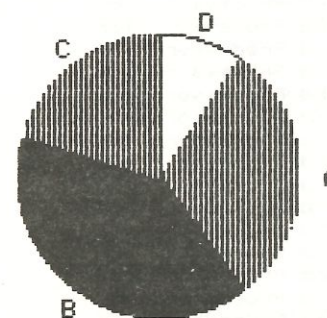
B-GRAPH is a graphics package from Batteries Included, who produced the very good word processor PAPERCLIP, and is a very versatile and easy to use program that enables you to produce many kinds of business graphs.

B-Graph can be used on the Apple II+, IIe or //c.

The analytical and statistical tools available in B-Graph are designed for use by individuals without any prior expertise in this area.

The program allows the creation of numerous types of graph and charts, as well as providing statistical and analytical tools for the evaluation of data.

B - GRAPHS



SOFTWARE	PERCENT
A: BUSINESS	30.00
B: GAMES	40.00
C: UTILITY	20.00
D: AIDS	10.00

APRIL 1987

B-Graph consists of 10 integrated, easy to master program modules. The manual has a number of comprehensive tutorials, designed to allow you to learn how to use the program and each individual program module quickly.



THE BODY TRANSPARENT

----- By DesignWare.

Reviewed by Robert Brown.

Requirements:

- An Apple II computer with atleast 48k
- Joystick - One or Two Drives
- One or Two Players

Optional: - Mouse - Colour Monitor



FACTOR 1

The manual takes you through a step by step, hands on course of each module, explaining every function and option available. Each tutorial is illustrated with actual pictures of what will appear on your monitor. Also included is a short course in data analysis and statistics.

The one disappointing feature with the package I was given to review was that it did not support the Apple //c printer port - so I was unable to produce a hard copy of the graphs. The copy I had was an early version so I presume later versions of B-Graph would not have this problem.

I would recommend any user who is considering buying B-Graph to check that the version supports your printer and interface card before purchasing it.

The graphs I was able to produce using B-graph look good on the screen and if it produces what you see on your screen to your printer it is a worthwhile package for anyone who is looking for this type of software.

On a scale of ten I would award B-graph a seven for performance and ease of use with the only drawback been the limited number of printer interfaces my copy of B-Graph supported.

The Body Transparent is a program to teach children from the age of 10 up about the human body and its relative organs and their functions. The program comes on a 'Flippy Disk', Yes a Flippy Disk not a Floppy Disk. For those that aren't familiar with the term, A Flippy Disk caters for two types of machines. On side One there is the Commodore 64 program and on side Two is the Apple program. (I don't know why they put Commodore over preference to Apple for ???). Anyway back to the program.

The main idea behind the program has several reasons. They are:

Teaches names and locations of bones as well as male

Continued on page 20

The Body Transparent, continued from page 19.

and female organs, teaches important facts about bones, in addition to organ functions, systems and diseases, reinforces learning by providing help when needed and repeating questions answered incorrectly, includes different levels of difficulty to maintain a challenge, allows you to add your own questions to focus on schoolwork and to increase the challenge, excellent graphics and involving game play encourages learning, includes a built in demonstration and on-screen instructions and lastly it is for one or two players so friends can learn together.

There are three games that you can play and one demonstration. You can Assemble The Body, check Body Facts and Functions or create your own Anatomy game and play it. The object of the Body Assembly game is to move the organs or bones that appear in the question box onto the outline of the body. The object of the Body Facts & Functions game is to match facts and functions with the picture on the body. You get a list of several different subjects such as Bones (skeleton), Systems (female organs), Functions (female organs), Parts (male organs), Diseases (male organs), Descriptions (male organs), or your own facts that you previously typed into the computer. The object of the third game is that you can place your own facts onto another disk, for example, your homework, and the computer will work the answer out for you or work out several organs that could answer the question. E.G. 'Which organ aids digestion?', the computer can answer the Stomach, the Small Intestine etc. Once you have completed you Anatomy Facts you can then play the game. A separate disk can hold 18 separate lists of 30 facts each.

The Body Transparent is truly a fun way to learn about the Human Anatomy. One interesting point about the program is that it is not copy protected so it would be a good addition to a schools collection for the children to take home a copy, make a Anatomy list up then bring it back to school for the class to complete the game the next day. Food for thought.

Review copy courtesy of OziSoft, Sydney.

 **AUG Software Library** 

AppleWorks DATA Disks;

are a collection of templates for use with AppleWorks. In response to many requests to have these disks catalogued - John Mamutil has done just that. The listing will give an indication of the range of topics covered on the SIX double-sided 5.25inch disks.

Orders the set using the order form on page 42.

AUG Appleworks Disks' Index:
File: Templates compiled by John Mamutil
Report: Filenames

Disk	Filename	Type	Size
10	Albums A...Z	Data Base	51K
4	AMORT SCH 120.s	Spread Sheet	22K
4	AMORT SCH 240.s	Spread Sheet	37K
3	AMORT SCH 360.s	Spread Sheet	53K
4	AMORT SCH 60.s	Spread Sheet	14K
4	AMORT TABLES	Word Processor	3K
8	AMORT.40.YRS	Spread Sheet	16K
8	AMORT.5.YRS	Spread Sheet	23K
2	amortization	Spread Sheet	54K
1	AMP.NOTES	Word Processor	3K
3	APP.ENG	Word Processor	2K
12	APPLEWORKS DL	Word Processor	28K
5	AREA.CODE	Spread Sheet	6K
2	ARTER.2 Columns	Word Processor	4K
2	ARTER.Envelope	Word Processor	3K
1	ARTICLE	Word Processor	5K
5	ASSET.1	Spread Sheet	4K
5	ASSET.CHARACTER	Spread Sheet	9K
5	ASSIG.GRADEAVG	Word Processor	2K
8	AUTO.INSURANCE	Spread Sheet	3K
11	AUTO.LOAN.EXP	Word Processor	3K
11	AUTO.LOAN.WKSHT	Spread Sheet	2K
1	avequipment	Data Base	3K
11	avequipment	Data Base	2K
11	AW Tips 8508A	Word Processor	5K
11	AW Tips 8508B	Word Processor	4K
5	AW.1	Spread Sheet	9K
5	AW.2	Spread Sheet	4K
12	AW.COL.AUG	Word Processor	10K
12	AW.COL.JUL	Word Processor	7K
12	AW.COL.SEP	Word Processor	8K
9	AW.NEWS.Vancil	Word Processor	16K
10	AWKS.CI	Word Processor	2K
3	AWRKS.HELP	Word Processor	6K
8	AWUG.2	Word Processor	3K
11	AWUG.Swapdisk	Word Processor	4K
3	BAD.DISK.FILE	Word Processor	1K
6	BARREL.01	Word Processor	3K
6	BARREL.02	Word Processor	4K
6	BARREL.03	Word Processor	6K
6	BARREL.04	Word Processor	14K
6	barrel.05	Word Processor	8K
7	barrel.06	Word Processor	15K
6	barrel.07	Word Processor	8K
6	barrel.08	Word Processor	4K
6	barrel.09	Word Processor	8K
6	barrel.10.1	Word Processor	10K
6	barrel.11	Word Processor	8K
6	barrel.12	Word Processor	5K
4	BASIC.SYSTEM	System	11K
6	Beep Fixer	Word Processor	4K
5	BOND.PORTFOLIO	Spread Sheet	4K
1	Book.Order	Data Base	2K
8	Books	Word Processor	2K
10	BOWLING.SS	Spread Sheet	3K
10	BOWLING.WP	Word Processor	3K
11	BRASS ACCT	Spread Sheet	23K
11	BRASS ACCT BLK	Spread Sheet	21K
2	BUD.TEMP1	Spread Sheet	8K
3	BUSEXPLOG	Spread Sheet	2K
5	C.LAB USE TEST	Word Processor	5K
10	CALCULATOR	Spread Sheet	4K
1	CALENDAR	Spread Sheet	1K
11	CAT.INTRO.	Word Processor	3K
11	CATALOG	Data Base	30K
11	CHECK RECON	Spread Sheet	1K
6	CHECK.REGISTER	Spread Sheet	13K
10	CI RULER	Word Processor	3K
9	Comedy Albums	Data Base	4K
10	COMMISSARY	Spread Sheet	3K
5	Comp. Articles	Data Base	2K
5	COMP. TERMS	Word Processor	1K
5	COMP. TEST 3	Word Processor	3K
5	Comp.Checklist	Word Processor	2K
8	COMP.TAXBL.INCM	Spread Sheet	5K
9	Compact Discs	Data Base	3K
9	Computations	Data Base	4K
5	Computer Lab.	Word Processor	2K
5	COMPUTER QUIZ 2	Word Processor	3K
5	Computer Quiz 3	Word Processor	3K
5	Computer Skills	Word Processor	5K

AUG Appleworks Disks' Index:
File: Templates compiled by John Mamutil
Report: Filenames

Disk	Filename	Type	Size
5	COMPUTER STUFF	Data Base	4K
4	COMVID SYSTEMS	Word Processor	2K
8	CONFIGURE	Word Processor	2K
1	Consideration	Data Base	1K
8	Consumer Letter	Word Processor	2K
8	Copyright.Terms	Word Processor	2K
3	CPM. ON.IIC	Word Processor	2K
2	CURE.80N.KO	Word Processor	1K
1	DAYS.BTWn.DATES	Spread Sheet	7K
1	DB Mas Problems	Word Processor	2K
5	Directions Test	Word Processor	2K
8	DISABL.INCOME	Spread Sheet	3K
5	Disk Care	Word Processor	3K
5	DR.S.SOC.SEC	Spread Sheet	8K
3	DRESS.UP.TEXT	Word Processor	6K
5	Eastern High	Data Base	3K
5	ED.FUND.ANALYS	Spread Sheet	4K
2	ENTERTAINMENT	Spread Sheet	2K
8	EPSON.KERNING	Word Processor	1K
8	EPSON.NLQ.BOARD	Word Processor	9K
8	ESTATE.TAX.EST	Spread Sheet	6K
11	EVAL.FORM	Word Processor	6K
10	EXPENSES.YTD2	Spread Sheet	3K
8	FED.INC.TAX.EST	Spread Sheet	11K
2	FIX.ASSET	Spread Sheet	10K
1	FV AND CALENDAR	Spread Sheet	11K
1	FV AND DAY.CALC	Spread Sheet	12K
1	FV CALCULATION	Spread Sheet	2K
12	GARDEN 85	Data Base	5K
10	GOLF.HANDICAP	Spread Sheet	12K
5	GRADES.COMPSCI	Spread Sheet	5K
1	Haba Merge note	Word Processor	3K
10	HELP.HELP	Word Processor	1K
10	high finance 19	Spread Sheet	12K
8	HLTH.INSURANCE	Spread Sheet	2K
8	HOME.INSURANCE	Spread Sheet	4K
6	INCOME.PROPERTY	Spread Sheet	11K
2	INCOME.STAT3	Spread Sheet	18K
7	INFLA.ADJUST	Spread Sheet	3K
4	INFO.ON.OTHER.F	Word Processor	1K
7	INVEST.ACCUMULA	Spread Sheet	8K
3	INVOICE.TAWUG	Word Processor	1K
5	IQ TEST	Word Processor	4K
7	IRA vs.TAXABLE	Spread Sheet	6K
2	IRS AUTO LOG	Spread Sheet	6K
6	IW Typefaces	Word Processor	2K
12	JOB.EST	Spread Sheet	1K
3	JOB.LABOR.GEN.1	Spread Sheet	1K
3	JOBSFORM	Spread Sheet	2K
3	JOBSFORM.1	Spread Sheet	2K
7	LA.VEG.GARDEN	Data Base	4K
4	Letter	Word Processor	5K
7	LIFE.INS.NEEDS	Spread Sheet	7K
8	LIFE.INSURANCE	Spread Sheet	4K
7	LOAN.CALC	Spread Sheet	2K
7	LOAN.REDUCTION	Spread Sheet	4K
9	LOG.CALC.DOC	Word Processor	9K
9	LOG.CALC.MED	Spread Sheet	14K
9	LOG.CALC.SHORT	Spread Sheet	2K
9	LOG.DOC.NOTE	Word Processor	2K
9	LOOKUP.LOGTABL1	Spread Sheet	1K
9	LOOKUP.LOGTABL2	Spread Sheet	1K
9	LOOKUP.LOGTABL3	Spread Sheet	1K
12	LR TAWUG 501	Word Processor	4K
9	Magazine.List	Data Base	11K
1	Magazines 1984	Data Base	9K
12	MATH GRADEBOOK	Spread Sheet	12K
3	MATLSLISTGEN.1	Spread Sheet	2K
9	Memo	Word Processor	2K
5	METEOR SHOWERS	Data Base	8K
1	micro.hardware	Data Base	3K
1	micro.software	Data Base	2K
9	Misc. Records	Data Base	2K
1	MR B MEDICAL	Data Base	7K
10	MX80.GRAFTRAX	Word Processor	2K
11	NAME.LGE.1	Word Processor	1K
2	NET.WTH	Spread Sheet	7K
1	NO.FILES SIDE	Word Processor	1K
9	O.S.T O.B.C.	Data Base	3K
5	OM 1985	Word Processor	2K
12	OPEN.APPLE.MAG	Word Processor	1K

AUG Appleworks Disks' Index:
File: Templates compiled by John Mamutil
Report: Filenames

Disk	Filename	Type	Size
1	ORDER BLANK	Word Processor	3K
1	order.book	Data Base	2K
3	ORDERFORM	Spread Sheet	2K
1	Ordering	Spread Sheet	4K
10	PathName Chart	Spread Sheet	2K
11	PathName Chart	Spread Sheet	3K
9	PAYMENT.JIM	Word Processor	2K
1	PER.CHECK	Spread Sheet	3K
11	Portfolio Sheet	Spread Sheet	10K
4	POSO	Data Base	3K
3	PRICECOMPARATOR	Spread Sheet	2K
2	PRINTER.TROUBLE	Word Processor	1K
10	PRINTER.TROUBLE	Word Processor	2K
8	PrizeLetter	Word Processor	2K
10	PRO.COPY.REV	Word Processor	2K
12	ProCopy Review	Word Processor	5K
4	PRODOS	System	16K
5	PROG. TEST 1	Word Processor	2K
7	PSA.ARMS.5YR	Spread Sheet	35K
9	RAMWORKS	Word Processor	11K
9	RAMWORKS.PT2	Word Processor	11K
8	READ.FIRST.RJN	Word Processor	3K
1	READ.ME.J.BRANJ	Word Processor	2K
12	RECIPE	Data Base	7K
10	RECIPE.FILE	Data Base	4K
7	RENT vs BUY	Spread Sheet	13K
8	Report	Word Processor	3K
3	REPORT CARD	Spread Sheet	26K
8	Reservations	Word Processor	2K
7	RESOURCES.OBJEC	Spread Sheet	8K
7	RETIRE.CAPITAL	Spread Sheet	6K
3	RUMORED.BY.UNKN	Word Processor	1K
8	RUNTIME.DISKS	Word Processor	5K
7	S.S.WORKSHEET	Spread Sheet	8K
5	safety test	Word Processor	4K
5	Saft.Contract	Word Processor	2K
5	Salary Schedule	Spread Sheet	3K
11	SALE	Spread Sheet	2K
1	SAMPLE.BUDGET	Spread Sheet	5K
9	SAT.CHAN	Word Processor	2K
9	SATELLITE.CHAN	Data Base	2K
12	SensibleSpeller	Word Processor	6K
3	SHOWOFF.SHORT	Word Processor	10K
2	SMALL.BUS.ST	Spread Sheet	4K
10	SQ.FT.GAR.PL	Word Processor	3K
4	Star Trek List	Data Base	6K
3	STAR.MICR.PRINT	Word Processor	2K
4	STARTUP	Basic	5K
1	STK ANALYSIS	Spread Sheet	20K
3	STOCK COST REG	Spread Sheet	2K
7	STOCK.PORTFOLIO	Spread Sheet	4K
5	SUB.SUPER PRAC.	Word Processor	1K
11	TAWUG 8508A	Word Processor	2K
2	TAWUG MEMBERS	Data Base	15K
4	TAWUG MEMBERS	Data Base	9K
6	TAWUG MEMBERS	Data Base	12K
8	TAWUG MEMBERS	Data Base	16K
10	TAWUG MEMBERS	Data Base	18K
12	TAWUG MEMBERS	Data Base	21K
9	TAWUG.1.RESPONS	Word Processor	4K
9	TAWUG.INFO.1	Word Processor	3K
1	TAWUG.LETTER.1	Word Processor	3K
12	TAWUG.LETTER.1	Word Processor	3K
1	TAXFORM.1984	Spread Sheet	5K
5	TEMP.AVAIL	Word Processor	1K
7	TEST	Spread Sheet	2K
12	TIDBITS	Word Processor	8K
7	TIME.CERT	Spread Sheet	3K
7	TRIG FUNCTIONS	Spread Sheet	3K
5	TRIV.1.9	Word Processor	2K
6	TRIV.2.1	Word Processor	2K
3	TWO.COLUMN	Word Processor	6K
9	USERS.GROUPS	Word Processor	5K
9	USR GRP.JUNE 85	Word Processor	7K
11	VENDORS	Data Base	4K
11	VIDEO	Data Base	4K
9	VideoGame.list	Data Base	10K
5	VOCAB.1	Word Processor	2K
1	WeeklyMagazine	Data Base	4K
5	Wilmington 85	Word Processor	2K
8	WOLFF.FX80.HINT	Word Processor	3K

Applications



8

AUGUST 1987

HIGHLIGHTS



A Year in Review



New AppleWorks

Apple //GS Software List



Better Disk Labels

MFS vs HFS

Mac Hints

*Latest Apple G Mac
Library Disks*

**Annual General Meeting
Monday August 10th.**



**Annual General Meeting
Monday August 10th.**

THE PUBLICATION OF THE
APPLE USERS GROUP (SYDNEY)
Incorporated in N.S.W.

NEW VERSION OF APPLEWORKS

Apple Computer, Inc. has produced an enhanced version of AppleWorks, its best-selling integrated software package for the Apple family of personal computers. AppleWorks, which combines word processing, spreadsheet and database applications, now offers a mail merge function for producing personalised form letters. The enhanced AppleWorks automatically loads into Apple memory cards for greater speed and convenience, handles more complex spreadsheets and works with larger files. The new version is compatible with the Apple //e, Apple //c, and the new Apple IIGS computer.

More than half a million copies of AppleWorks have been sold since it was introduced in 1984. Its popularity derives from its powerful applications and the ease with which information can be moved between applications. In addition, AppleWorks is easy to learn to use. It employs consistent commands that are easy to remember and extensive menus and on-line help.

New Solutions and Power

New features in AppleWorks enhance the capabilities of individual applications, take advantage of larger memory capacities now available on Apple // systems, and extend integration to include mail merge.

Mail merge lets users combine information from a database file with documents created with the AppleWorks word processor. For example, AppleWorks can automatically generate form letters that are personalised with names, addresses and any other identifying information contained in a mailing list file. The user avoids the inconvenience and expense of needing a separate mail merge package.

AppleWorks now automatically loads into Apple memory expansion cards each time the system is turned on. This saves steps and time for the user and enables the software to operate faster.

The enhanced AppleWorks can take advantage of additional memory provided by Apple memory expansion cards for a larger desktop and increased file sizes. The desktop can range from 56 Kilobytes (K) on a system with the minimum 128K of RAM up to 1012K on a system equipped with a one-Megabyte memory expansion card. The desktop can hold up to 12 files at once for quick access.

Maximum file sizes also increase with the addition of an Apple memory expansion card. With a memory card, the user can create a word processing document over 180 pages long (7250 lines), a database of 6350 records or a spreadsheet with 10K per row.

New spreadsheet features enable the user to perform more complex analyses and provide additional flexibility. Logical ANDs and ORs allow for complex analysis. A new rounding feature lets the user calculate on either the visible, rounded-off number or the actual underlying number, thereby providing extra precision. The user can now cut and paste between multiple spreadsheets more easily by choosing to simply transfer values, and not formulas, attached to the cell.

New manuals and tutorials make AppleWorks easier to use for both novice and advanced users. A new intermediate level tutorial and a "tips" reference section for more advanced tasks help the user go beyond the basics. Sample files are tailored for specific environments.

Upgrades

AppleWorks version 2.0 is available to replace the earlier product.

AppleWorks now requires at least 128K of RAM on the Apple //e and also runs on the //c and IIGS. To accommodate the two disk drive formats now available for the Apple // line, each AppleWorks package contains both 5.25 inch and 3.5 inch disks. The program can be used with a single disk drive, but two drives are recommended if 5.25 inch disks are used.

Many of the desk accessories and templates designed to be used with AppleWorks are compatible with version 2.0. Some programs which are memory-dependent will need revisions. Owners should contact those products' developers for information on upgrades.

HINTS For AppleWorks

For what it is worth, if you ever felt that single spaced text was too hard to read and double spaced was just a little too much, what would you say to one and a half spaces?

Try this:

@A-O Set spacing to DS (double spacing)
Set lines per inch to LI 8.

Presto! You have one and a half spacing.

Continued from Page 7

Space and time doesn't permit the mention of all the activities of the many committee members and others not officially on the committee. Many thanks to all who spent time promoting the AUG(Sydney) Inc.

BACKUP

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Back up your copy-protected disks with **ESSENTIAL Data Duplicator 4 PLUS** ■

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🍏 SUPERCALC 3A vs VIP PROFESSIONAL

Two programs compared by John Mamutil.

Visicalc has long been quoted as one of the *raison d'être*s and propagators of the Apple // and also of PCs in general.

This program still exists but it has been usurped by the release of spreadsheets catering to the incessant demands of wish lists. Appleworks with its integrated package then introduced spreadsheets to a population who may not even have considered spreadsheets. Now given the tool and ready made worksheets (templates) from various magazines and user groups, whole new avenues have opened up for users.

Most spreadsheets are Visicalc clones ie, the page or display is divided into rows and columns with the basic entity being the cell. Appleworks followed this mode but being part of an integrated package lacks much of the sophistication called for by businesses. Lotus 1-2-3 for the IBM lured the business user and the rest is history.

Lotus 1-2-3 has finally arrived for the Apple // in the form of VIP Professional, complete with sophisticated graphics and functions. However, before I delve into the virtues of VIP I shall run through another powerful but little known package called SuperCalc 3A.

Supercalc 3A

This is a ProDOS based program requiring 128K and a 65C02 processor. Disk one contains a massive 231 block binary file which is the main program and disk two contains files pertaining to the graphics functions. A third disk contains a comprehensive set of utility files for Sideways printing, communications and a program which convert Appleworks, DIF and text files to Supercalc ".CAL" files and vice versa. It's a pity you have to exit Supercalc to run these utilities but this stems from the fact that the program is also available for the IBM and compatibles. In fact the manuals and commands are almost identical.

The various operations are invoked by slash (/) commands, somewhat akin to the Open-Apple commands in Appleworks. In Supercalc, the various commands are nested in menus each invoked by an alpha character - one of the novel features of this - is the help function which can be called up while you are paused at a menu prompt. Therefore the information sought pertains to your exact problem - I personally found this much more useful than

haphazardly flicking through the manual. The display is based on the text screen and thus data entry and movement within the worksheet is as fast as Appleworks. The inability to use the mouse for cursor movement is a drawback. Apart from the usual operators there are financial, calendar, statistical and database functions to a total of 49. A number of sample worksheets are included to demonstrate its capabilities.

The program really comes into its own when you explore the graphics functions. Ten variables may be defined and these may be plotted on a double hires graphics screen and dumped to a plotter or a range of printers. There is an exhaustive range of options ranging from pie charts to bar, stacked bar, line, X-Y, area and Hi-Lo graphs with all sorts of enhancements available for presentation. The speed with which these charts are displayed is also quite impressive - the rate determining step being disk access time.

Other peculiar features include Mousetext characters which may be displayed on screen both in the worksheet and in graphs, and a facility whereby files may be loaded or saved partially so that they may be merged.

Macros may be used by writing commands into "Execute" files and then by loading these ".XQT" files - similar to EXEC FILES in BASIC.

The program incidentally is not copy protected and therefore may be copied to a Unidisk or Ramdisk for extra speed.

VIP Professional

As I mentioned earlier this is an exact replica of Lotus 1-2-3, but with a Macintosh-like interface using WIMPS which makes it so much more user friendly. In fact if you already use Lotus then you will be on familiar ground and vice versa. Templates written for one may be used with the other. So what's the catch??

For a start, you need at least 256K (512K if you want to run a Ramdisk - which is highly recommended) and the 65C02 chip or a //GS. The mouse is optional but would certainly make life a lot easier when moving around the page if not for anything else. An accelerator card is recommended especially when you consider that the program works on a double hires graphics screen even for text (a-la Multiscribe).

The ProDOS based program resides on two floppies

and is ideally suited to a 3.5" disk, a third side includes a graph printing utility (graphs cannot be printed from within VIP) and a program that converts Appleworks spreadsheets to VIP even down to such details as titles. VIP may be configured to recognize Ramdisks such that it copies its functions component into RAM on booting - this takes about 3 minutes. Without the Ramdisk it takes 45 seconds. To save disk space I have found that you can quite safely delete files such as Help, etc and create dummy files with the same names which reduce boot up time by 50% (take care that you only attempt this with a backup copy)

VIP has 51 functions - similar to Supercalc. The graphs are not as extensive as it does not have area or hi-lo graphs and also only allows 6 variables. However, it has superior text file import and merging facilities which make it incredibly versatile. Commands may be invoked either from pull-down menus (this novelty wears off very quickly), or by slash commands. Macros may be created and invoked by the Open-Apple key. One of its best features is the ability to label cells and cell ranges with names, which can then be referred to in formulae. For example, naming a partial row as "COST" can eliminate having to remember range co-ordinates and adds an element of user friendliness to the system. The graphs are drawn in double hires graphics and therefore can incorporate fine detail. Scaling allows you to zoom in on co-ordinates. VIP may also be used as a database complete with a host of data base functions as found in Lotus.

The two programs compared

If you are familiar with Lotus and need to use the same features then VIP is the program of choice. However - a number of hardware modifications need to be made ie, a minimum of 256K Ramcard and possibly an accelerator. VIP is painfully slow in data entry, scrolling and calculations. Compared to Appleworks, a 999 cell calculation takes twice as long to calculate on VIP. Whilst an accelerator triples the speed of Appleworks, only a doubling of speed is noted on the VIP using a Transwarp card - this could be due to the use of the graphics pages. It must be noted that only the Transwarp card accelerates VIP, as it works on auxiliary memory. VIP does have the edge in "Natural" recalculation, a peculiarity only in VIP whereby it handles all forward references. For example, if you are calculating backwards from cell 9 to 1, only one calculation step is required whereas Appleworks and Supercalc would require a further 9 recalculations.

Supercalc on the other hand does not place such emphasis on hardware requirements - 128K and a 65C02 is all that is required - although I strongly recommend the use of a Ramdisk if you are generating a large number of graphs. Being text-based, speed is identical to Appleworks. As far as graphs are

concerned, Supercalc definitely wins in terms of options, a larger screen display, speed of generation and most importantly the ability to print charts from within the program. Both programs use the double hires display with a colour option. Supercalc also allows the display of graphs in single hires - a totally redundant function in my view.

The macro facility in VIP is far superior to the Execute file macros in Supercalc as they are more easily accessible and programmable. A truly novel feature of VIP is its tutorial disk which unlike other tutorial programs is wholly written via a self executing set of macros and spreadsheets. As a teaching aid - the tutorial itself takes you through the various aspects of VIP but after that if you "break" into this powerful macro, one can then examine the style of programming involved. The special macro commands (familiar to Lotus users) even allow you to design your own menus from within your spreadsheets.

Supercalc has a 256 X 63 cell worksheet whilst VIP gives you a massive 8156 X 256 cells.

Summary

In summary, if you need VIP, then you will need to upgrade your hardware or at least it will be a good reason to upgrade, conversely, if you already have a highly enhanced Apple //, then VIP is the only current program to harness all that power. VIP is also an excellent medium for those wanting to interface with Lotus (the ".WKS" files are compatible with Lotus via communications). For complex spreadsheets which require extensive repetitious keystrokes then the macros in VIP will be most appreciated.

For those wanting a spreadsheet with more functions than Appleworks (with speed) then Supercalc is the program of choice especially if graphs form a large part of your work. In all fairness, the operators or functions in both programs are similar, however, VIP has the edge for complex analytical worksheets through its macros and impressive range labelling features.

The tediously slow operation (even with an accelerator) of VIP is its greatest drawback which if overcome would make it undoubtedly the spreadsheet of choice.

Editorial Continued

ERRATA "Text on Graphics"
Page 18 of Applications - June 1987;

Line 137 is missing, and should read:

8B0:A5 1E 137 LDA VRES

The Finer Points: Creating a disk Printer

By W. Beasley, courtesy of H & S
Works Newsletter

Many users of Appleworks know that there is such a thing as an ASCII file, also known as a text file. Such files are used to transport information from the wordprocessor into the database, as well as to import information from other programs into Appleworks. What many people do not know is that there are two different kinds of ASCII files: unformatted and formatted.

Unformatted ASCII files consist simply of characters, stripped of all information about such things as margins, underlining, boldfacing, and character-per-inch settings. Formatted ASCII files are roughly the same EXCEPT for the fact that they keep the margin information intact. This becomes important if you wish to create, say, a pair of columns for a newsletter.

Appleworks can readily create an Unformatted ASCII file in the wordprocessor. Just use <OA>-P to print, select "TO A TEXT (ASCII) FILE" instead of to your printer and type in the pathname form "/" (the name of your data disk)/(the name you wish to give the ASCII file)".

Creating a formatted ASCII file requires that you create a fictitious printer which actually prints the document to a disk file rather than to paper. Here's how to do that.

From the main menu choose 5. OTHER ACTIVITIES, and from the other activities menu choose 7. SPECIFY INFORMATION ABOUT YOUR PRINTER. You will see a printer information screen listing the printers currently installed on your disk and giving you the chance to add, remove, or modify printers. Now, Appleworks can only hold three printers at a time; if you already have three, you will have to delete an unused one to make room for this project. (If you have three and need all three - go and make a backup copy of your program disk and use it to return to this point. Go on, I'll get a cup of coffee while you're at it). I'll assume that you now that you have only one or two printers listed on the information screen of the copy of Appleworks you're using.

Choose 2. ADD A PRINTER. You'll be presented with a list of 12 printers of which the last is "Custom Printer". You want to choose 4. APPLE SILENTYPE. Yes, I know you don't have one of those; no one does anymore... we're trying to fool Appleworks, and I won't tell if you don't. You will be asked to specify a name for this new printer, I usually call mine PHANTOM, though you can call it TO.DISK, ASCII, or

WOLFGANG if you prefer. You will be asked "How is it accessed?"; the choices are a list of slots followed by "Print onto disk or onto another Apple". That's is -- choose that last option.

Choosing this will produce a screen with five pieces of information, ranging from "Needs line feed after each return" to "Interface Cards". The first one (LF with CR) says YES at the moment. We want it to say NO; with choice 1 highlighted, press RETURN. You will be asked whether you wish to change the value. Say YES; then the value will change to a NO. Go down to the third choice (Stop at end of each page) and follow the same procedure to change it to a NO. Then go down to choice 4 (platen width) and change it to 8 inches. You're done. ESCape your way back to the main menu. Whenever you wish to create a formatted ASCII file on disk, use <OA>-P to print and choose PHANTOM (or whatever you called it). You can then type in a pathname and the resulting file will be formatted ASCII preserving the line lengths needed for newsletters and finicky telecommunications programs.

** Author's note: The above article was written when Appleworks 1.3 was the current version; I assumed that no changes were made in version 2.0 with respect to this information but have since discovered that this is not true. Version 2.0 AUTOMATICALLY creates formatted ASCII files when you specify that you would like to print at an ASCII file in disk; versions up through 1.3 created an unformatted ASCII file under these conditions.

This means two things:

- 1) Users of version 2.0 need not go through the phantom printer installation routine -- it's redundant and repetitive, since it will produce the same kind of file as "print to an ASCII file".
- 2) Users of version 2.0 who NEED an unformatted ASCII file are apparently out of luck (I met one yesterday)...to the best of my knowledge, your best bet in this situation is to create a your file in 2.0, then find a copy of 1.3 or earlier for use in creating an unformatted ASCII file.

Home and School Works Newsletter is a small publication devoted to the use of Appleworks. It can be obtained by sending US\$30 to;

Home and School Works Newsletter
P.O.Box 72, Leetsdale, PA 15056-0072
U.S.A.

MUSIC STUDIO

A Review by John Paske

For those people who purchased a GS hoping to utilise the sound capabilities of this machine, Activision have a new release hot off the press called "MUSIC STUDIO". This is one hell-of-a-good program as I intend to show you briefly.

The advertising on the package says it's the premier music composition tool, but they're only half right; it's the only composition tool for the GS. What programs have the following features:

- Four computer voices.
- Fifteen instruments.
- Connections for MIDI interfacing.
- Designing of instruments.
- Addition of lyrics.

To sample the way the GS produces music the authors have included several songs and it is a good idea to listen to these in order that you may not only appreciate the sound produced but also study how to compose your own work.

Composing tunes is quite a simple matter. First assign a time signature, then adjust volume and tempo, select instrument and place notes on the grand staff. If you wish a classical piece of music to be produced this can done by selecting the classical sound files. When this file is loaded fifteen classical instruments are then available for selection. Other files include rock, voices and jazz each with fifteen different instruments.

If this is not enough you can modify these to your own custom needs in the **Design Instrument** section.

This facility allows for creating customised instruments quickly and easily. A selected instrument can be changed in terms of attack, decay, sustain and release. The new instrument can then be saved onto a data disk for later retrieval.

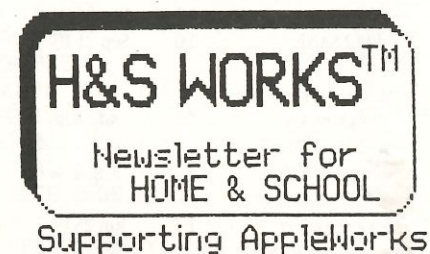
An added bonus with this program is that if you wish to add a Midi interface card to your computer you can connect your computer to a Midi-equipped synthesizer or any other Midi instrument. Through this connection you can play tunes you compose with the MUSIC STUDIO on your synthesizer.

If you are not confident in writing the traditional form of music this program has devised a system that is extremely simple to use. The **Music Paintbox** is a free-form method of composing. Instead of using standard musical notation you can "paint" notes onto the staff in the form of coloured rectangles. The size of the rectangles determines how long the note will be held, and the colour determines which instrument it represents. Having completed your composition it is interesting to see the transformation from rectangles to the traditional notation.

There is a lot to recommend this program, from its vast array of instruments to its ease of operation. There were two things I would like to see included one being a warning that the Control Panel slot for the printer shouldn't be set to your card and that printers other than Imagewriters / and // be incorporated to work with the program.

The idea in creating this program was to design a computer, musical "tool kit". One so complete that it would offer every option and audio function anyone could ever want, and yet be simple for even young children to use. THE MUSIC STUDIO has achieved this idea.

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Apple II Software List

With all the Apple II software on the market, it's hard to keep up with what's available, such as the latest versions of your favorite Apple programs. To help keep you up to date, here's a list of all Apple II software distributed by Apple as of February, 1987.

Application	Current Version	Date Released
Access II		
Apple Access II	1.2	Sep 23 86
Apple Presents Access II	1.1	Apr 30 85
Apple IIc		
The Apple IIc at Play	1.1	Nov 29 84
Inside Story	1.1	Nov 30 84
Apple IIe		
Introduction to the Apple IIe Inside Story	2.0	Jun 20 86
	2.0	Jun 12 86
Apple IIgs™		
System Disk	1.1	Dec 2 86
ProDOS 16	1.1	Dec 3 86
ProDOS 8	1.3	Dec 3 86
Apple Tour of the Apple IIcs	1.0	Sep 6 86
Apple Education Classics	1.0	Mar 21 84
Apple LOGO II		
Apple LOGO II (128K)	1.1	Nov 12 84
Apple Presents Apple LOGO II	1.0	Jan 23 84
AppleSoft BASIC		
ProDOS AppleSoft Sampler	1.2	Mar 5 85
ProDOS BASIC Prog. Examples	1.1	Oct 26 84
ProDOS AppleSoft (BASIC.SYSTEM)	1.1	Jun 18 84
Getting Down to BASIC IIe	1.0	Jun 12 86
ProDOS AppleSoft Prog. Asst.(APA)	1.4	Jun 28 84

Application	Current Version	Date Released
AppleWorks®		
AppleWorks Startup/Program	2.0	Jun 19 86
AppleWorks Sample Files	2.0	Jun 19 86
AppleWorks-3.5"	1.3	Jun 19 86
Apple Presents AppleWorks	2.0	Jun 19 86
Apple Writer		
Apple Writer II	2.1	Dec 12 84
Apple Presents (40 COL)	1.0	May 22 84
Apple Presents (80 COL)	1.0	May 1 84
Backup II	1.1.1	Oct 24 85
Console Driver / User Input		
User Input Routine ASSEMBLER	1.0	Jan 16 86
User Input Routine BASIC	1.0	Jan 14 86
User Input Routine Pascal	1.0	Jan 6 86
ConsoleStuff Pascal Unit	1.0	Jan 14 86
Dow Jones News & Quotes Reporter	2.0.1	Jun 20 84
ForTran II	Rev.B	Feb 21 85
Instant Pascal®		
Instant Pascal (Program)	1.0	Aug 19 85
Instant Pascal (Samples)	1.0	Aug 19 85
Apple Presents (Mouse)	1.0	Aug 22 85
Apple Presents (Keyboard)	1.0	Aug 22 85
MousePaint	1.2	Apr 10 85
MouseText / MouseGraphics		
MouseGraphics ToolKit-AII Pascal 1.2	1.0.0B6	Aug 21 85
MouseText ToolKit	2.1	Jan 15 86
Pascal MouseText ToolKit	2.1	Jan 18 86
Pascal Mouse Attach Driver	1.0	Jul 3 84
File Card Menu Support Library Unit	1.0	Jan 15 86

Application	Current Version	Date Released
Pascal II		
Development System-APPLE0:	1.3	Sep 3 85
Development System-APPLE1:	1.3	Sep 3 85
Development System-APPLE2:	1.3	Sep 3 85
Development System-APPLE3:	1.3	Sep 3 85
Development System-3.5"	1.3	Sep 3 85
Pascal Device Support Tools	1.1	Aug 14 84
Pascal Profile Manager	1.0.2	Apr 9 84
Pascal Profile Manager	1.0.2	Apr 9 84
Pascal Attach Tools	1.3	Sep 3 85
Pascal ProDOS Access Unit	1.2	Oct 7 85
Programmer's ToolKit / Assembler Tools		
DOS Programmer's ToolKit	Rev.B	Oct 20 83
DOS Programmer's ToolKit	Rev.B	Oct 20 83
ProDOS Assembler Tools	1.1	Jun 6 85
ProDOS		
ProDOS Kernel (PRODOS)	1.1.1	Sep 18 84
ProDOS Exerciser's Disk	1.0.2	Mar 5 85
ProDOS User's Disk	1.1.2	Feb 5 85
ProDOS Convert (CONVERT)	1.2	Feb 5 85
ProDOS Filer (FILER)	1.1	Jun 18 84
Update Utility for ProDOS	1.1.1	Sep 18 84
SANE™		
SANE, Apple Pascal ELEM5 For A II & A III	1.0	Sep 22 83
APPL2.SANE	1.0	Sep 21 83
SCSI Hard Disk Test Program 3.5	1.0	Aug 6 86
SCSI Hard Disk Test Program 5.25	1.0	Aug 6 86
SuperPilot Log	1.1	Jun 25 84
System Utilities IIc & IIe	2.1.1	Oct 2 85

Apple //GS Software Listing

This list came to us by courtesy of TRIAD Software Products in the USA. All prices are in \$US and need multiplication by two to estimate Australian prices. Time zones are in the US, so you can add at least three months for local availability.

File: GS.SOFTWARE	MFG.	APPLICATIONS	PRICE	AVAILABLE
Report: GS.ADV.NEW.				6.9.87
SOFTWARE				
816/PAINT (2E/C/GS)	BAUDVILLE	GRAPHICS	47.00	SOON?
BARDS TALE	ELECTRONIC ARTS	RECREATION	32.50	NOW
CONSERVER	MD IDEAS	HARDWARE/POWER	124.95	
DEFENDER OF THE CROWN	MINDSCAPE	ENTERTAINMENT	31.50	
DELUXE PAINT II	ELECTRONIC ARTS	GRAPHICS	67.00	NOW
DLX-PAINT ART PARTS #1	ELECTRONIC ARTS	GRAPHICS	21.00	NOW
DLX-PAINT ART PARTS #2	ELECTRONIC ARTS	GRAPHICS	21.00	NOW
DLX-PAINT SEASONS-HOLIDAYS	ELECTRONIC ARTS	GRAPHICS	21.00	NOW
DRAWING TABLE	BRODERBUND	GRAPHICS	TBA	FALL 87?
FANTAVISION	BRODERBUND	GRAPHICS	43.95	AUG 87
FIRST LETTERS AND WORDS	FIRST BYTE	EDUCATION	33.00	JUNE
FIRST SHAPES	FIRST BYTE	EDUCATION	33.00	OVER DUE
GRAPHIC WRITER	DATA PAC	GRAPHICS	99.95	NOW
GS RAM 256K	APPLIED ENGINEER	HARDWARE/MEMORY	127.00	NOW
GS RAM 512K	APPLIED ENGINEER	HARDWARE/MEMORY	165.00	NOW
GS RAM 1 MEG	APPLIED ENGINEER	HARDWARE/MEMORY	225.00	NOW
GS RAM 1.5 MEG	APPLIED ENGINEER	HARDWARE/MEMORY	285.00	NOW
GS RAM PLUS 1.0 MEG	APPLIED ENGINEER	HARDWARE/MEMORY	355.00	NOW
GS RAM PLUS 2.0 MEG	APPLIED ENGINEER	HARDWARE/MEMORY	585.00	NOW
INST.MUS.HOT & COOL JAZZ	ELECTRONIC ARTS	EDUCATION	21.00	JULY
INST.MUS.IT'S ONLY ROCK N ROLL	ELECTRONIC ARTS	EDUCATION	21.00	JUNE
INSTANT MUSIC	ELECTRONIC ARTS	EDUCATION	33.00	JUNE
KID TALK	FIRST BYTE	EDUCATION	33.00	JUNE
KINGS QUEST III (GS)	SIERRA ON-LINE	RECREATION	31.95	AUG 87?
MAD LIBS	FIRST BYTE	RECREATION		OVER DUE
MATH TALK	FIRST BYTE	EDUCATION	33.00	OVER DUE
MATH TALK FRACTIONS	FIRST BYTE	EDUCATION	33.00	OVER DUE
MOUSETALK (2E/C/GS)	UNITED SOFTWARE	COMMUNICATION	95.00	NOW
MOUSEWRITE (2E/C/GS)	ROGER WAGNER	WORD PROCESSOR	87.00	NOW
MULTISCRIBE(GS VERSION)	STYLEWARE, INC.	BUSINESS	62.95	NOW
MUSIC CONSTRUCTION(GS)	ELECTRONIC ARTS	EDUCATION	33.50	NOW
MUSIC STUDIO	ACTIVISION	EDUCATION	48.95	NOW
NEWSMAKER	BRODERBUND	GRAPHICS	TBA	WINTER 87
OCTORAM 1 MEG	MD IDEAS	HARDWARE/MEMORY	290.00	NOW
OCTORAM 256K	MD IDEAS	HARDWARE/MEMORY	124.95	NOW
OCTORAM ESP 128K	MD IDEAS	HARDWARE/MEMORY	149.95	NOW
OCTORAM ESP 512K	MD IDEAS	HARDWARE/MEMORY	320.00	NOW
ORCA/M (GS)	BYTEWORKS	ASSEMBLER	46.95	NOW
PAINTWKS + CLIP ART #1	ACTIVISION	GRAPHICS	19.95	NOW
PAINTWORKS PLUS	ACTIVISION	GRAPHICS	48.95	NOW
PRINT SHOP (GS)	BRODERBUND	GRAPHICS	43.95	MID-JULY
PRO GRAPPLER	ORANGE MICRO	PRINTER/I/F(PARALLEL)	86.00	NOW
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SOFT SWITCH	ROGER WAGNER	UTILITIES	39.95	JULY
SPELLER BEE	FIRST BYTE	EDUCATION	33.00	JUNE
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SUPERSONIC STEREO CARD	MD IDEAS	HARDWARE/MUSIC	50.95	NOW
TASS TIMES..TONETOWN-GS	ACTIVISION	ENTERTAINMENT	28.50	NOW
TML PASCAL (APW VER.)	TML SYSTEMS	UTILITY	105.00	NOW
TML SOURCE CODE LIB.	TML SYSTEMS	UTILITY	42.00	NOW
TOPDRAW	STYLEWARE, INC.	GRAPHICS	62.95	SOON?
VIP PROFESSIONAL (1 MEG REQ)	DITEK (CANADA)	BUSINESS/HOME	197.00	NOW
VISION PLUS	AST	HARDWARE/DIGITIZER	237.00	NOW
VISUALIZER	PBI SOFTWARE	BUSINESS/GRAPHICS	72.95	NOW
WORDPERFECT (GS)	WORD PERFECT CORP	BUSINESS	87.00	NOW
WRITER'S CHOICE ELITE	ACTIVISION	WORDPROCESSOR	63.50	SUMMER 87

----- and the Program Launcher.

By Chris Nelligan.

Introduction

With the introduction of Apple's IIGS, a new operating system has been released, this being ProDOS 16. P16 is the central part, or kernel, of the GS's operating system. Although other software components may be thought of as part of the overall operating system, P16 is the key component. It manages the creation and modification of files. It accesses the disk devices through which files are stored and retrieved. It also controls procedures for quitting programs and starting new ones.

This article is not on how ProDOS 16 works but rather what happens as it is loaded, and the launching of Applications using the 'Apple IIGS Program Launcher.'

Loading ProDOS 16

The most noticeable thing about ProDOS 16 is the speed at which it is loaded. When some of us converted to use ProDOS from DOS 3.3, we thought the loading time of ProDOS was slow, well ProDOS 16 takes even longer, on average approximately 50 seconds from floppy disk.

When ProDOS 16 is initially loaded, the title screen is displayed stating it's version and the usual copyright notices. After a short while a message 'One moment please...' is displayed. A moment is an understatement.

On each ProDOS 16 Master disk the following should be found..

Directory/File	Description
PRODOS	A routine that loads the proper operating system and selects an application
SYSTEM/	A subdirectory containing
P8	ProDOS 8 operating system
P16	ProDOS 16 operating system
LOADER	The IIGS System Loader
START	Typically a program selector
LIBS/	Subdirectory with standard system libraries
TOOLS/	Subdirectory containing all RAM based tools
 FONTS/	Subdirectory containing all fonts
DESK.ACCS/	Subdirectory containing desk accessories
SYSTEM.SETUP/	Subdirectory containing system init programs
TOOL.SETUP	A Load file containing patches to ROM and a program to install them.
BASIC.SYSTM	The Applesoft BASIC system file interface

The speed of loading really depends on the number of files and programs installed in the System directory and associated subdirectories. ProDOS 16 first executes the TOOL.SETUP program to install any patches. It then loads all of the tools (eg, Menu manager, Window Manager, Sound Manager) from the Tools subdirectory. All available desk accessories are also loaded, for example system clock and graphic input interfaces. This all adds to the system booting time.

The Program Launcher

The Apple IIGS Program launcher is used to select applications and execute them. It is not a house keeping interface, ie: It does not have delete, lock, unlock procedures, only launching capabilities. Refer to associated screen dump.

The launcher has 4 options..

DISK looks and displays the executable applications on the next device in the chain of storage devices.

OPEN will execute the selected application or open a subdirectory.

CLOSE will close the current subdirectory and reopen the calling directory.

QUIT will exit the Launcher and go to system quit. This offers to 'Start next program', 'Re-boot System', 'Execute Start program' or 'Enter the

pathname of next application'.

Selecting files

Within the select window, files are displayed in alphabetic sequence. Scroll bars may be used to display files that are not within the current window.

The Mouse may be used to select any files Highlighted as being available, dimmed filenames indicate they can not be selected. A 'click' of the mouse will select it, a 'double click' will execute it (pressing RETURN or clicking OPEN' will also execute it).

The Arrow keys, Up, Down, Left and Right will move between selectable applications.

Letters of the alphabet A-Z can be used to select applications.


When in Subdirectories, pressing the ESCape key,

clicking the CLOSE button or clicking the folder icon above the filename window will reopen the calling directory.

Returning to the Program Launcher

Upon quitting from an application, control is usually passed back to the Program Launcher. This then allows selection of further applications. Some programs are re-executable from memory, that is they are restartable. If you quit a program and then reselect it from the Launcher, it may startup again without going to disk to reload.

The handling of Memory and what resides where is handled by the Memory Manager, this is an article of its own. Let it be known that more than one program can reside in memory at the one time. There is a supposedly a program similar to 'Switcher' on the Mac that will be available for GS owners soon. —

 **Apple IIGS**
Monitor commands

~~~~~

Article number one.

A file describing the new monitor commands available for the Apple IIGS.

Some texts and samples taken from IIGS technical documentation.

By Chris Nelligan, for the Galaxy Bulletin Board System, April 1987.

**Contents**

1. Introduction to this article
2. Native and Emulation modes
3. Summary commands for modifying memory
4. Summary commands for modifying registers
5. Summary of miscellaneous monitor commands
6. Commands for program execution and debugging
7. Displaying and modifying memory
8. ASCII Text Input
9. ASCII Text filters
10. Next article contents

**Introduction.**

The following file describes the entire Apple IIGS monitor commands. There are many new system monitor commands within the IIGS than the ordinary Apple II. These help not only in debugging programs, but also when working closely within the machine.

The IIGS operates under a multi memory bank setup. To access the different banks within the IIGS, the forward slash (/) is used. For example to switch to memory bank \*\$08, the following line would be entered.

\*08/ [RETURN]

To examine the memory location \$392A in Memory bank \$27, the following line would be entered.

\*27/392A [RETURN]

In notational form the above line would be 'bb/addr'.

Native and Emulation modes.

Since the Apple IIGS uses the 658C16 chip, this allows compatibility with the old 6502 and 65C02. The 658C16 is a 16 bit processor whilst the older chips are eight bit. For example, under Native mode on the 65C816, the accumulator and index registers are 16 bits wide, and on the older chips they are 8 bits wide.

The IIGS when switched on defaults to 8 bit emulation mode, this is to allow existing Apple II software to

run. However, new Apple IIGS software is most now being written in 16bit. I will not go into the differences between the commands between the chips, but just to say that they vary.

### Switching.

When CONTROL-E is pressed to display registers, a lowercase m,x and e appear. These are the state of the machine, 'm' for Accumulator, 'x' for Index registers and 'e' for Emulation mode. It is possible to run the 658C16 with 16 bit wide accumulator in Emulation mode. To change between the two

\*0=e 0=m 0=x [Switches to Full 16bit mode]  
\*1=e 1=m 1=x [Switches to 8bit Emulation]

For more information on the 658C16 and how it operates I recommend the following book.

65816/65802 Assembly Language Programming  
Author: Michael Fischer  
Publisher: Osborne/McGraw-Hill  
(I got mine from Dymocks for \$41.95)

### Commands for viewing or modifying memory.

Display single memory location {from\_ba}  
Display multiple memory locations {from\_ba}.{to\_ba}  
Modify consecutive memory {dest\_ba}:{val1} {val2}  
["literal ASCII"] {"flip ASCII"} {val3}  
Move data in memory {dest\_ba}<{from\_ba}.{to\_ba}M  
Verify memory contents {dest\_ba}<{from\_ba}.{to\_ba}V  
Fill memory with byte (zap) {val}<{from\_ba}.{to\_ba}Z  
Pattern search (4 ways to specify) \{val1}\<{from\_ba}.{to\_ba}P  
\{'123t'\}<{from\_ba}.{to\_ba}P  
\{"literal ASCII"}<{from\_ba}.{to\_ba}P  
\ {val}=B  
Modify Program bank register {val}=K  
Modify Stack Pointer {val}=S  
Modify Processorster {val}=P  
Modify Machine state register {val}=M  
Modify Quagmire register {val}=Q  
Modify 16/8bit accumulator mode {val}=m  
Modify 16/8bit index mode {val}=x  
Modify Native/Emulation mode {val}=e  
Modify Language card bank {val}=L  
Modify Ascii Filter {val}=F

### Miscellaneous Monitor commands

Inverse text I  
Normal text N  
Change date and time =T=mm/dd/yyhh:mm:ss  
Display date and time =T  
Redirect Input hooks {slot}CONTROL-K  
Redirect Output hooks {slot}CONTROL-P  
Change screen display to text CONTROL-T  
Change cursor CONTROL-~{new\_cursor\_character}  
Convert decimal to hexadecimal {val}=  
Convert hexadecimal to decimal ={val}

Perform hexadecimal math {val}+{val}  
{val}-{val}  
{val}\*{val}  
{val}/{val}  
Jump to Coldstart BASIC CONTROL-B  
Jump to Warmstart BASIC CONTROL-C  
Jump to User vector CONTROL-Y  
Quit monitor Q

### Commands for program execution and debugging

Go (begin) program in bank \$00 {addr}G  
Execute program from any bank {bb/addr}X  
Restore registers and flags CONTROL-R  
Resume execution {bb/addr}R  
Perform a program step (not active) {bb/addr}S  
Perform a program trace (not active){bb/addr}T  
Disassemble (list memory) {bb/addr}L

### Displaying and changing memory locations

To display the contents of memory is a simple task. The Apple IIGS now not only display the disassembly of program code but displays the ASCII text values as well. Back in the days of older II's, one would have to move memory ranges to the text screen to check and see if it was ASCII you were looking at.

### Displaying

\*2000 [RETURN]  
00/2000: 41 -H  
\*2000.2005 [RETURN]  
00/2000: 41 42 43 44 45  
-H E L L O  
\*02/2000 [RETURN]  
02/2000: 50 -P  
\*2000L [RETURN] ;Performs a program disassembly from \$2000 in current bank.  
\*02/2000L [RETURN] ;Performs a program disassembly from \$2000 in Bank \$02.

### Changing

\*1000:41 [RETURN] ;Change memory location \$1000 in current bank to \$41  
\*03/1000:CC [RETURN] ;Change memory location \$1000 in bank \$03 to \$CC

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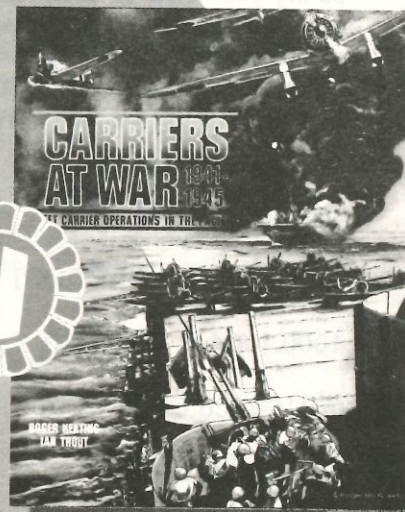
"Reach for the Stars... is just about the best science fiction game for the thinking person available on any micro-computer." *Science Digest*.  
"...once mastered this might be the only game you'll ever want to buy for your C-64. Indeed, it would be worth buying a computer to play it. Definitely one of my most favourite games and a classic." *Commodore Magazine*.

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"*Carriers at War* is the best game available on World War II carrier operations. It is, perhaps, the best wargame of 1984 on any topic." *Computer Gaming World*.



## EUROPE ABLAZE

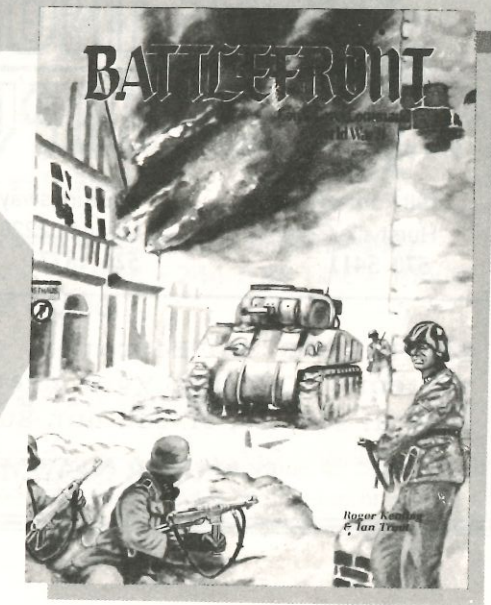
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```
*01/1000:"a" [RETURN] ;Change memory
loc'n $1000 in bank $01 to ASCII'a'
*05/2217:41 42 43 43 [RETURN]
;Change consecutive memory starting
from $2217 in bank $05
*1000:'h' 'e' 'l' 'l' 'o' [RETURN]
;Store the ASCII string 'hello' in
memory locations starting at $1000
in the current bank.
```

### ASCII text input modes

You can enter ASCII data in two ways. One is called Literal ASCII, the other way is called Flip ASCII. Note the ASCII filter will affect the final form of the text entered.

To enter data as literal ASCII, type the character string you wish to enter between a pair of double quote marks ("). The characters will be stored in ascending order in the same sequence in which you typed them. To store the ASCII text in reverse order to which you entered them (flipped) use a single quote mark (') around your text.

Literal ASCII data entry:

```
1000:"HELLO" [RETURN]
1000.1004 [RETURN]
00/1000:C8 C5 CC CC CF - HELLO
```

Flip ASCII data entry:

```
1000:'HELLO' [RETURN]
1000.1004 [RETURN]
00/1000:CF CC CC C5 C8 - OLLEH
```

### ASCII Filters for stored data

When you perform any manipulation of ASCII code, you must consider the literal ASCII format of the stored data. For example, do you want the data to be stored in ASCII with the most significant bit set (to be compatible with the I/O firmware for display purposes) or direct in true ASCII format where what you type exactly follows ASCII standard? The format can be changed using any filters provided by the monitor. The filter can be any hex value from \$00 (maximum filtering) to \$FF (no filtering, ie: all source bits pass through the filter unmodified).

The syntax for changing the filters is - (filter value)=F [RETURN]

For example, 7F=F [RETURN], the system then uses the 7F filter format.

This means that when you search for any pattern in memory, you must know which format is used. If FF is used, abc would appear in hex as E1 E2 E3; if 7F is used abc would appear as 61 62 63. Thus if you performed a pattern search for E1 E2 E3 and the format used was 7F, you would not find the correct pattern.

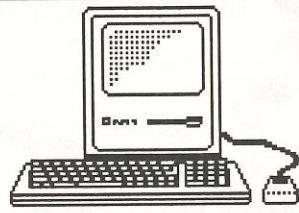
The input ASCII character is ANDed with the filter value, then is stored in the search buffer. →

### The filter formats are as follows:

| Entry          | Filter       | Format of stored data               |
|----------------|--------------|-------------------------------------|
| "abcdefghijkl" | FF (Default) | E1 E2 E3 E4 E5 E6 E7 E8 E9 EA EB EC |
|                | 7F           | 61 62 63 64 65 66 67 68 69 6A 6B 6C |
|                | 3F           | 21 22 23 24 25 26 27 28 29 2A 2B 2C |



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Answers by Ken  
Ozanne

From Ben Meroli (rapidly  
overtaking anonymous as  
our most regular  
correspondent)

Some of the literature I read talks of Apple // disks with 34 tracks, other sources talk of 22 tracks. Which is right?

Both are right, provided you remember that the first track is track zero. What is happening is that the first figure is in decimal (the numbers you learned in school), the second in hexadecimal. It is better to write \$22 to emphasize that it is in hexadecimal. (Usually "hex" for short.)

\$22 means two sixteens and two ones (just as 34 means three tens and four ones).  $2 * 16 + 2 = 34$ .

In fact there are 35 tracks, because we start with track zero. That gives us  $35 * 16 = 560$  sectors on the disk or a potential 140 kilobytes of storage. Less a bit for directory information and DOS.

From Anonymous

Actually, I knew who this was from but I have forgotten. Sorry.

I wrote the attached program to make my fortune (it is a lotto numbers generator). BUT, every time I run it I get the same numbers. What is the problem?

I won't quote the whole program, but the offending line is:

```
110 N(I) = INT (40 * RND (1) + 1)
```

the problem is that the random number generator always delivers the same numbers from the same seed.

This is not particularly easy to fix. I experimented for rather longer than I expected before I came up with the following:

```
40 PRINT"HIT ANY KEY" : GET A1$
45 J = PEEK (78)
50 K = RND (-J)
```

```
110 N(I) = INT (40 * RND(J) + 1)
```

Line 45 could be replaced by:

```
45 J = PEEK (78) + 256 * PEEK (79)
```

for a wider range of possibilities.

Line 40 is simply designed to wait for an unpredictable length of time so that the keyboard counter (which uses locations 78 and 79) will have an unpredictable number in it. Line 50 reseeds the random number generator into one of 256 possible patterns if the first line 45 is used, one of 65536 if the second line 45 is used.

Obviously some line numbers in the original program will have to be changed so as not to conflict with the ones I have used. (Or vice-versa, of course.)

Please let me know if there is any remaining problem. The RND function in Applesoft is notoriously flawed and this modification would not be enough in a more complex application.

For NEW Applesoft programmers here are some handy hints.

When programming in Basic, place GOTOs at the top of the program. Since Basic searches from the top to the bottom of the program, searching for a particular line number. If the line number it is looking for, is at the top of the program, the computer will find it faster.

Don't use constants in a FOR-NEXT loop.  
DON'T-- For A = 1 TO 100 : B = A / 23.12

DO----- C=23.14 : FOR A = 1 TO 100 : B = A/C

and define all your variables at the beginning of the program.

A tip for the //GS

To coin a phrase - "Since the beginning" I have used timing loops within my programs. I always found that the following loop gave me just the right amount of time for displaying a program's title page.

```
1 FOR I = 1 TO 3000 : NEXT
```

Now with the //GS running almost three times the speed the rest of the Apple // family, it becomes necessary to make the following change to my programs as follows.

```
10 A = PEEK (64435) : B = PEEK (64448)
20 IF A = 6 AND B = 244 THEN TIME = 10000
30 TIME = 3000
```

```
1000 FOR I = 1 TO TIME : NEXT
```

If the value of A is 6 and the value of B is 244 then the software will recognise it is running on a GS. →

## 🍏 The Apple Mouse on the //c and //e.

From Apple // Technical Notes  
Reprinted by courtesy of Apple Computer Australia.

There are differences between how the mouse works on the Apple //e and how it works on the Apple //c. This technical note explains what is causing these differences.

A clarification of the effects disabling interrupts has on mouse data has been added.

### INTRODUCTION

As advertised, if you use the mouse firmware routines such as SETMOUSE to control the mouse then these routines will perform the same function in the Apple //c as they do in the Apple //e. This does not mean that a program which uses the mouse will behave the same in both computers. There are two reasons for this. One is that if a program has not properly set the environment prior to calling these routines it is possible for the program to work in one machine and not in the other. The second reason is that there are differences in the machines and although the ROM routines perform the same functions there may be noticeable differences in the 'behaviour' of the mouse. This technical note will explain the fundamental differences between the way the mice in the two machines work. It will then point out precautions that need to be taken to make sure that your machine language program will work on both machines. With the exception of mouse movement scaling described below BASIC and Pascal programs do not need to be concerned about setting the proper environment.

The Apple //e mouse card has a microprocessor on it which constantly polls the mouse to get status and position information. This data is then kept on the card and is available whenever the program requests it through the READMOUSE routine. If the mouse is in passive mode this information will be 'picked up' by the main program whenever it gets around to it. The SETMOUSE routine can set the mouse card to issue interrupts under certain conditions. When the mouse card determines that such conditions exist it issues an interrupt. This stops the main computer and goes to what ever interrupt handling routine has been set up. This routine will then read the information from where the card processor saved it and puts it in the screen holes. When using a mouse on an Apple with a mouse card your program is only interrupted if your program has requested it. And the data in the screen holes is being changed only when the program's

interrupt handler or polling routine has called READMOUSE. Also enabling and inhibiting interrupts does not affect the updating of mouse information by the card's microprocessor.

The Apple //c mouse does not have a card microprocessor and so mouse information is collected by interrupting the Apple //c's microprocessor. When the interrupt happens the firmware captures it and processes it which includes updating the screen holes. The interrupt is passed on only if SETMOUSE set up the conditions to do so. However, having the mouse interrupt the computer's microprocessor means that your program is being constantly interrupted. This will affect program timing. It also means that the screen holes are constantly being updated with X and Y information even in passive mode since this information must be kept somewhere and there is no card to keep it on. Also, if you have disabled interrupts then the mouse can never interrupt the processor and so the X and Y values are never updated and calling READMOUSE will indicate that there has been no mouse movement.

Since the Apple //c is constantly being interrupted while the mouse is on, the program's performance may be affected. To minimize this affect the Apple //c responds one-half as frequently to mouse movements as does the mouse card. The noticeable result of this is that the mouse must be moved twice as far to create the same effect. If you want the same behaviour on both machines then multiply the Apple //c X and Y values by two and clamping to 1/2 the //e value before using them.

With the exception of having to double the Apple //c mouse movement your program can ignore which machine it is running on by following the precautions listed below. If you are working from BASIC or Pascal these conditions are taken care of for you.

\* Some programs may need to turn off interrupts for purposes other than reading the mouse. This is sometimes done on the Apple //e to keep from having to handle interrupts while in auxiliary memory. If interrupts are turned off and then back on, the first call to READMOUSE may give incorrect values. Subsequent calls to READMOUSE will return correct values until interrupts are turned off and on again. Turning off interrupts for mouse calls does not create this problem. If you are watching numbers coming from the mouse while moving it in a direction that would increase values you might see the following: 6, 7, 8, 9, 8, 9, 10. In practice this momentary 'glitch' in the stream of mouse data has little importance and would probably only be noticed by a programmer testing his/her program - no one's hand is that steady. If you must keep this 'glitch' from happening then do not keep interrupts off for more than 40 microseconds or be sure that at least one mouse interrupt has taken place since interrupts were turned back on. →

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# Applications



JAN/FEB 1988

## HIGHLIGHTS



**The Big Bad matrix  
Specialty Printer Functions**



**ThunderScanning  
The Beast in the Machine**



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# WHO'S AFRAID OF THE BIG BAD MATRIX

By Keith Brewster

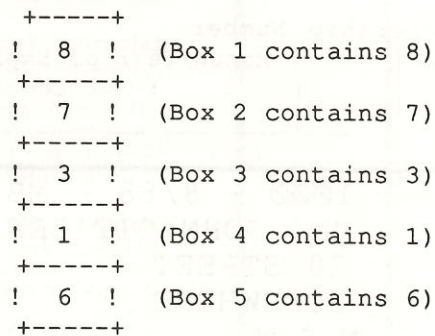
Original article by courtesy Creative Computing December 1981

Beginners in Basic, as well as many people with quite a lot of experience, have real trouble understanding arrays and matrices. This may be because it is a little difficult at first to see the real value of these concepts. Once the techniques are mastered, and it becomes possible to 'visualise' an array or matrix, these extremely powerful features of Basic and many other high level languages become useful tools. The purpose of this article is to introduce these concepts and a few of the techniques involved in matrix/array programming, and to point out some of the places where arrays can be used.

## What is an array?

An 'array' is like a list. Visualise it as a vertical stack of boxes. The boxes are piled up, and the stack is one box wide and several boxes high. Thus the pile has only one dimension, that of height. It is only one box wide, so it has no width. There is no depth either.

The computer doesn't see things quite this way, but since what it does is totally 'transparent' or 'invisible' to the user, we don't really care. The stack of boxes is convenient for human minds to picture, and we can draw it on a piece of paper. But what good is a pile of boxes if the boxes are empty? Can't we put something useful in them? The boxes are called variables, and they function just as any other Basic variable functions. Each box can store a number or a string.



--- Figure 1. ---

Figure 1 shows how our stack of boxes or variables collectively called an array, should be visualised.

When an array is first DIMensioned (more on this later), it has nothing stored in the boxes. Most Basics automatically initialise the boxes to 0, but if there is any doubt, it's good practice to initialise them as part of the program. There are many ways to put values in the boxes.

Firstly, they can be 'stuffed' in by direct assignment statements. To do this, we must know the name of the array. Let's call it array A. The boxes have numbers automatically, numbering from A(1) to A(N), where N is the number of the bottom box. In our example, the boxes (called elements) are numbered from 1 to 5. To specify the array and the box to be 'stuffed', we use the following format:

```
ARRAYNAME(ELEMENTNUMBER)
```

For example, in our example, if we want to put 100 into box 3, we can do it like this:

```
A(3)=100
```

In a typical Basic manner, we can use a variable to represent the box, too! Since we are going to get used to using the word 'element' instead of box, we'll choose the variable name E (for element). Now we can do this:

```
E=3: A(E)=100
```

Once again, the value 100 has been stored in the element that is numbered A(3).

The wheels are going around in the mind, and the question is about to be asked:

Why should I use a variable to stand for the element number? Well, you don't need to do this to assign values to elements directly, but what if you want to READ out the DATA statement into your array? Here's how this is done:

```

10 REM STUFF ARRAY A FROM DATA
   STATEMENT
20 DIM A(10)
30 FOR E=1 TO 5
40 READ A(E)
50 NEXT E
60 DATA 8,7,3,1,6

```

This little routine reads the values from your data statement (line 60) and stuffs them in sequence into

the array. Note the DIM statement in line 20. This just reserves memory space for a ten-element array. You can DIM an array for practically any number of elements, but remember that unused elements use memory, so don't get carried away! Note, too, that you are allowed a ten-element array without a DIM statement. The word DIM stands for DIMension.

Now we know how to loop using FOR NEXT until our array is full. But what happens if there are elements in the array and only six numbers in the DATA statement?

We get an OUT OF DATA error message. What can we do to prevent this? The easiest and most widely used method is to place an end-of-data marker as the last piece of data in the DATA statement. A number - selected so that it would not otherwise appear in the data statement - is used for this purpose. A good example might be 10000. Listing 1 is a typical routine that uses this technique.

```

10 REM EXAMPLE OF END MARKER
20 E=0
30 E=E+1
40 READ A(E)
50 IF A(E)=10000 THEN A(E)=0: GOTO 100
60 GOTO 30
70 DATA 8,7,3,1,6,10000
100 REM REST OF PROGRAM CONTINUES

```

--- Listing 1. ---

Another way to load an array is by use of the INPUT statement. This allows you to put numbers directly into the array from the keyboard. To do this, simply substitute for line 40:

```
40 INPUT "NUMBER, PLEASE ";A(E)
```

When all your numbers are in, you can enter 10000, and the program will jump out of the loop and proceed from line 100.

Before we leave the array and start talking about the matrix, there are a couple more things you should know. In most basics, you can store strings as well as numbers. But you can't put strings in a numeric array. You must DIM the array as follows:

```
DIM A$(10)
```

Now, anything you put into any of the elements of array A\$ (pronounced "A dollar" or "A string") will be stored that way, so you can't put numbers into a string array and expect to do calculations with them! Of course you can use VAL to convert numbers stored as strings to pure numbers.

An excellent example of string use is when you want to sort a bunch of words in (for example)

alphabetical order. See listing 2 for an example of this:

```

10 REM *** ALPHABETIC SORT ***
20 REM *** HOUSEKEEPING ***
30 DIM A$(10): REM DIMENSION STRING
   ARRAY TO HOLD UP TO 10 STRINGS
40 HOME
100 REM *** LOAD STRING ARRAY A$ FROM
   CONTENTS OF DATA STATEMENT
   AT LINE 15 ***
110 FOR E=1 TO 6: REM *** NOTE THERE ARE 6
   ITEMS IN THE DATA STATEMENT ***
120 READ A$(E): REM * PUT DATA ITEMS INTO
   ARRAY ELEMENTS *
130 NEXT E
150 DATA CAN, ARRAYS, NUMBER OR WORD,
   DO, TASKS!, SORTING,
200 REM * SORT ARRAY A$ USING ASCII
   VALUES REPRESENTING FIRST LETTER OF
   EACH ITEM IN THE ARRAY *
210 FOR I= 1 TO 6: FOR E= 1 TO 5
220 IF ASC (A$(E)) > ASC (A$(E+1)) THEN
   GOSUB 1000: REM * TO SWAP SUB *
230 NEXT E
240 NEXT I
300 REM * PRINT OUT SORTED ARRAY
310 HOME
320 FOR E= 1 TO 7
330 PRINT A$(E); " ";
240 NEXT E
999 END
1000 REM *** SWAP CONTENTS OF TWO
   ELEMENTS ***
1010 A$(E)= A$(E+1)
1020 A$(E+1)=TES$
1040 RETURN
1050 END

```

--- listing 2 ---

## THE DIM STATEMENT

Now let's take a quick look at the DIM statement. This should go towards the beginning of your program, certainly before the array is used. Remember, too, that more than one DIM for the same array is illegal. Your program will be interrupted by a rude error message if you use a GOTO to send the program back to a line before the original DIM statement! So get the DIM out of the way at the beginning of the program, then don't let the program loop back to a line number lower than the DIM line number.

Although Applesoft gives you the first 10 elements without a DIM, get into the habit of DIMming all arrays (and matrices) just in case.

In summary, any time you want to enter a significant number of words, sentences, or numbers using INPUT or want to READ them from disk or DATA

statements, use an array.  
When you are done print out the list with the program in listing 3

```
200 REM * PRINT CONTENTS OF ARRAY A$ *
210 E=0
220 E=E+1
230 IF A(E)=10000 THEN 300
240 PRINT A(E)
250 GOTO 220
300 REM PROGRAM CONTINUES..
```

-- Listing 3. --

## MATRICES

Now bring on those big bad matrices. No, a matrix isn't something you sleep on (nor is an array some kind of disk-shaped fish): A matrix is an array with more than one dimension! Remember we said an array is "one dimensional" because it has only height, and no width or depth? A matrix has more than one dimension, (usually two, but three - and even four dimensional matrices are not really unusual).

To keep it simple we'll discuss two dimensional matrices in this article. Think of a matrix as several arrays, all of the same length (height) set side by side. The result is often called a "table", but computer people say matrix. There's one in figure 2.

|        | Col.1 | Col.2 | Col.3 | Col.4 |
|--------|-------|-------|-------|-------|
| Row 1! | 45 !  | 20 !  | 65 !  | 25 !  |
| Row 2! | 30 !  | 10 !  | 40 !  | 20 !  |
| Row 3! | 105 ! | 200 ! | 305 ! | -95 ! |
| Row 4! | 300 ! | 50 !  | 350 ! | 250 ! |
| Row 5! | 75 !  | 30 !  | 105 ! | 45 !  |

-- Figure 2. --

Anything true of an array is essentially true of a matrix, too. You can assign both Row and Column numbers to variables. The DIM procedure is similar but not identical. The following is a correct DIM statement for our example matrix that has five columns and four rows.:

```
DIM M(5,4)
```

Notice that the number of rows to be used is always the first number in parentheses, it is followed immediately, without so much as a space, by a comma, and the immediately by the number of columns you want to DIM. Remember, that the rows

are horizontal and the columns are vertical. The DIM statement takes the following form:

```
DIM MATRIXNAME (ROW,COLUMN)
```

For convenience, we'll use these matrix variables: R is the Row variable, and C is the Column variable. Let's assume we want to load the matrix we have created with DIM M (5,4) statement above, and we want to use the values shown in the earlier example. What should the DATA statement look like, and how can we READ into such a matrix?

The easiest way is to use two nested FOR NEXT loops, one to handle the columns, and the other for the rows. Let's assume that we want to load the matrices horizontally. That is, the first four numbers in the DATA statement will go into row 1, columns 1,2,3,4 in that order. Listing 4 shows how to do this.

```
10 REM STUFF MATRIX FM DATA STMT
20 R=1
30 FOR C=1 TO 4
40 READ M(R,C)
50 NEXT C
60 DATA 45,20,65,25,30,10,40,20,105,20,305,-95,
300,50,350,50, 350,250,75,30,105,45
```

-- Listing 4. --

When we RUN this program the first four numbers in the DATA statement will be stuffed into the first horizontal row of the matrix. Now we need to add an outer loop that will cycle through the Row values, 1 to 5. Listing 5 is the same program with the two loops.

```
10 REM STUFF MATRIX FM DATA STMT
20 FOR R=1 TO 5
30 FOR C=1 TO 4
40 READ M(R,C)
50 NEXT C
60 NEXT R
70 DATA 45,20,65,25,30,10,40,20
80 DATA 105,200,305,-95
90 DATA 300,50,350,250,75,30
100 DATA 105,45
```

-- Listing 5. --

RUNning this program will load the matrix with the values shown in the example. To print it on the screen, try Listing 6.

```
200 REM PRINT MATRIX CONTENTS
210 FOR R=1 TO 5
220 FOR C=1 TO 4
230 PRINT R;" ";C;" ";;"STORES"; M(R,C)
240 NEXT R
250 NEXT C
```

-- Listing 6. --

You can "format" the print-out to fit your particular system...  
Here are a few ideas for programming using matrices:

- \* Look-up tables
- \* Storing numbers or strings for later use.
- \* Mathematical manipulations such as adding the first column to the second column, and putting the sum in the third column.
- \* Multiplying a whole potful of numbers by another number.
- \* Storing files as a table. For example you could write a chequebook balancer that stores old balance in column 1, cheque or deposit in column 2, new balance in column 3, date in column 4, and cheque number in column 5. Or you could store data on people: name in the first column, address in column 2, phone in column 3, etc..

Assuming you have "loaded" a 4 column by 5 row matrix like the one described. here's how to do arithmetic manipulations with it's elements.

```
MULTIPLY COL 1 BY COL 2
```

(Store product in Col 3)

```
300 FOR R=1 TO 5
310 M(R,3)=M(R,1)*M(R,2)
320 NEXT R
```

Notice here that only three Basic lines need to be used to multiply practically any number of elements! Division, addition, subtraction, and the various Basic functions can also be used in this manner. Here's a short routine to look up numbers in a matrix that are related to the number in column 1. For example, if you store the amount of each cheque written in column 1, and you want to print out only those cheques written for a certain amount, you can do it like this.

```
400 INPUT "ENTER AMOUNT "; AM
410 FOR R=1 TO 5
420 IF AM=M(R,1) THEN PRINT M(R,1); "" ;
M(R,2); " ";M(R,3) ; " ";M(R,4)
430 NEXT R
```

The program loops through the row numbers, checking column 1 in each row for equality with the number you have entered as AM. When it finds a match, it prints out the contents of the other columns on that row. These columns can be used for practically anything you want! In the case of string matrices, they could be addresses, phone numbers, birthdates, anything you might want to look up. In this case, column 1 would contain the person's name, and the AM would of course have to be AM\$, and the matrix would have to be dimensioned as a string matrix.

By now your curiosity should have been aroused, and you should be thinking of ways to use matrices and arrays in your programming. They are a powerful way to store data. You can READ in the data either from a DATA statement, or from disk. Disk operations are far too system-dependent to cover in a general article, but read your DOS and BASIC operating manuals.

Each system is different in terms of the RAM memory used to store each matrix/array element. This information is in one of the books supplied with your system.

If you can't find it, you can write a Basic program that DIMs, then stuffs a matrix by using PRINT FRE(0) that tells your system to print out the remaining user memory. A little experimentation will let you find out how much RAM is used each time you use these powerful features of Basic.

In closing, you should know that matrices and arrays give you one "free" element that you can use any time you DIM an array or matrix! This is row (matrices), or element (arrays) 0. For example, you can store a number like this:

```
A(0)=100
```

Or in a matrix, you can do this:

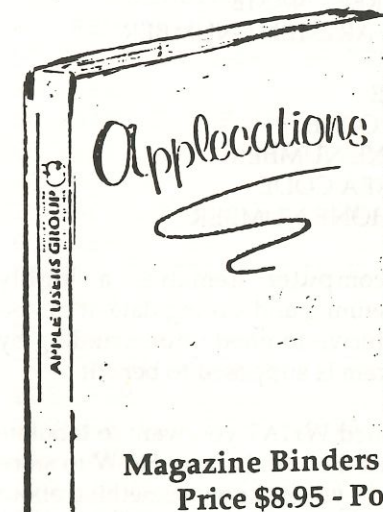
```
M(0)=100
```

```
M(0,1)=101
```

```
M(0,2)=102
```

```
M(1,0)=103
```

and so forth. Element 0, Row 0, and Column 0 are always there, and you should be using them if you have very limited memory available.



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# DOS Files

Original article by courtesy of Michigan APPLE-gram.

Everything stored on a diskette which is not a BASIC program and not a BINARY data file, is considered to be TEXT. A data file of all numbers for use by a program is considered TEXT. A mailing list is considered text. Everything but SAVE or BSAVE files are TEXT files.

In the most general sense, a FILE is an orderly collection of data referred to as one unit, normally under one name, the FILE NAME (in APPLE DOS, this name can be from 1 to 30 characters).

Inside a FILE are one or more sub-divisions of data known as RECORDS. Ordinarily one RECORD is synonymous with a line of text string or numeric data. Further sub-divisions are possible. For instance, a FIELD is a part of a RECORD and a SUBFIELD is a sub-set of a FIELD.

Let's set up a realistic example: Suppose we wanted to define a name, address, and phone number file. The file might be defined like:-

FILE NAME: MAIL LIST  
RECORD : ONE PERSON'S DATA

FIELD 1 : LAST NAME  
FIELD 2 : FIRST NAME, MID INITIAL  
SUBFIELD 1: FIRST NAME  
SUBFIELD 2: MIDDLE INITIAL  
FIELD 3 : ADDRESS  
SUBFIELD 1: STREET NUMBER  
SUBFIELD 2: STREET NAME  
SUBFIELD 3: APARTMENT NUMBER  
FIELD 4 : CITY  
FIELD 5 : STATE  
FIELD 6 : POST CODE  
FIELD 7 : PHONE NUMBER  
SUBFIELD 1: AREA CODE  
SUBFIELD 2: PHONE NUMBER

Even though a computer demands a highly structured way of defining and storing data, it can be done in a way conducive to good understanding by the people the program is supposed to benefit.

Once you have decided WHAT you want to tabulate and record, you must then find a way HOW to store the data. This requires you to know something about FILE STRUCTURE. I know you have all heard of

types of file structures, like sequential and random. But what do these words mean.

In a SEQUENTIAL file, all information is physically stored in the file IN THE ORDER IT IS WRITTEN TO THE FILE. An example of this is an ordinary music tape recorder. When you play back the songs, you must listen to them in the order in which you first recorded them. If that isn't what you want to hear, the only choice is to "fast forward" over songs you want to by-pass. But you must PASS OVER EVERY SONG on the way.

Contrasted to a tape recording is the LP record. Here you can listen to each song in sequence, OR skip a song, or a group of songs by lifting the needle and putting it down at the location of the song you want to hear next. What you did was select a song RANDOMLY!! A cassette tape with your programs or data on it is another type of sequential access file structure. A diskette is an example of RANDOM ACCESS.

Within the major grouping of random file structures, other sub-groups have been defined such as indexed sequential work addressable, keyed sequential, actual key, direct access and many others.

On the APPLE, we'll have stick with straight SEQUENTIAL, and RANDOM access by RECORD number. First we'll cover the sequential method.

In a sequential file, you put data on a disk file with a regular PRINT statement without worrying about how long a line or RECORD of data is. That is, it is a random length file.

To take advantage of RANDOM file access you must use a FIXED LENGTH RECORD. The upshot of this is that you must make an effort in your program to keep any line PRINTed to the disk the same length. A good way to do this is to 'pad' unused positions in the record with blanks.

(More on this in the RANDOM ACCESS example program presented later on.) A word or two is now in order on the 'format of the TEXT FILE data on the diskette. As you would surmise, since all data stored within the Apple is encoded using ASCII numbers for each character, this would be a logical way to put data onto a diskette. In fact this is exactly how it is done (however, even though REAL and INTEGER numbers are stored in internal binary format, they too go out on the diskette as ASCII characters).

A little known 'feature' of APPLE DOS is that all characters are 'packed' together as they are written to a disk file. Ordinarily this is good, since it wastes no space on the diskette. But, a problem can arise if you don't take the packing into account.

To illustrate this, let us define three variables X, Y, and Z: X=1 : Y=2 : Z=3

If you PRINTed them with PRINT X, Y, Z you would expect the output to be:

1 2 3

But if you were sending these numbers to a disk file, the record would be:

123 (How did that happen??)

What happened was this: the numbers were 'packed' together into one string!!!

Can this 'feature' be worked around?? YES. There are two main ways to solve a dilemma of this kind. First we can always print commas(,) between each number or we can print each on a separate line of data. Let's look at both ways:

PRINT X; ","; Y; ","; Z gives : X,Y,Z

PRINT X: PRINT Y: PRINT Z puts each of the variables on it's own line.

Anybody care to guess how the APPLE can figure out which way we did it?? As is normal for INPUT statements, a comma is considered a 'separator', so the first method works OK so long as you use a separate INPUT statement for each one.

(What is actually going on is this: at the end of each line of data written to a SEQUENTIAL disk file, a carriage return character (ASCII 13) is appended to the end of each line. In this way, you can use lines of variable length).

Now that we've specified the structure of our file, all that's left is to OPEN the file to WRITE to it and we're done.

Wait a minute!! What's this OPEN and WRITE to it and we're done.

On large mainframe computers, programs are normally available to automatically take care of all the disk files whether you are sending data to them or taking data from them. In order for a file to be available to you it must be OPENed. Just like you must open the door before you enter your house. The big computers take care of you but with APPLE DOS, we are on your own.

Once a file is OPEN, we must then tell the DOS if we are putting data onto your disk (WRITE) or getting data back that is already there (READ). Lastly, when we have finished with the file, we always CLOSE it prevent loss of data.

Let's examine the syntax for each:

OPEN F (,Lj) (,Ss) (,Dd) (,Vv)  
READ F (,Rr) (,Bb)  
WRITE F (,Rr) (,Bb)  
CLOSE F(,Ss) (,Ss) (,Dd) (,Vv)

In each of the statements above:

F is the FILE NAME  
L is the record character length  
R is the record number  
B is the byte number  
S is the disk controller slot #  
D is the disk drive No. 1 or 2  
V is the diskette volume number

Parenthesis ( ) indicate optional parameters you may use if needed.

Looks awfully complicated. Not really.

First off, the parameters L,R, and B are only used in RANDOM access files. S and D are only required if you have two or disk drives and controllers. The volume number is no problem: just put a number in for the volume number you are using or simply use V0.

Below is a very small program to WRITE three variables to disk then READ them back again (APPLESOFT PROGRAM).

```
10 D$=CHR$(4):REM CTRL-D
25 INPUT "WHAT FILE NAME ?";F
30 PRINT D$;"OPEN ";F$:REM OPEN FILE
35 PRINT D$;"WRITE ";F$:REM WRITE SET
40 S=1 : Y=.2 : Z=2.2 :REM DEFINE
    VARIABLES
40 REM
50 REM FILE OPEN, PRINT DATA
55 REM
60 PRINT X : PRINT Y : PRINT Z
65 PRINT D$;"CLOSE ";F$:REM CLOSE FILE
70 REM
75 X=0 : Y=0 : Z=0:REM CLEAR VARIABLES
80 REM
85 REM RETRIEVE DATA FROM DISK
90 REM
95 PRINT D$;"OPEN";F$:REM RE-OPEN FILE
100 PRINT D$;"OPEN ";F$ :REM READ SET
105 REM
110 REM NOW INPUT DATA INTO MEMORY
115 REM
120 INPUT X : INPUT Y : INPUT Z
125 PRINT D$;"CLOSE";F$:REM CLOSE FILE
```

```

130 PRINT "VARIABLES READ FROM DISK"
135 PRINT X,Y,Z :REM PRINT RESULTS
140 END

```

Let us now define our RANDOM ACCESS example problem. We'll write to disk the names and titles of the officers of our club. The RECORD structure is explained in the program. One RECORD is 32 characters long, so we must OPEN the RANDOM file with a length of L33 (to allow for the carriage return character (ASCII 13) that is put at the end of each line.

```

50 REM RANDOM FILE EXAMPLE
60 HOME : PRINT : PRINT
80 PRINT "DO YOU WANT TO SET NOMON?";
90 INPUT "Y/N"; A$: HOME
95 D$=CHR$(4): REM 'CTRL-D'
100 PRINT D$;"MON ICO"
105 IF A$="Y" THEN PRINT D$; "NOMON
    I,C,O"
110 HOME : PRINT "DEFINING DATA...:
    PRINT"
120 DATA KEHLET,BRUCE ,PRESIDENT
130 DATA RUTHERFORD,COLIN,SECRETARY
140 DATA KAZACOS,PETER,TREASURER
150 DATA RILEY,DON,LIBRARIAN
160 DATA HOFFMAN,HANS,EDITOR
200 REM
210 REM RECORD STRUCTURE IS-
220 REM
230 REM FIRST NAME - 6 CHARACTERS
240 REM LAST NAME - 10 CHARACTERS
250 REM TITLE - 16 CHARACTERS
260 REM TOTAL - 32 CHARACTERS
300 DIM S$(5,3) : REM 5 RECORDS, 3
    FIELDS
310 D$=CHR$(4) : REM CTRL-D
320 REM
330 REM 'READ' IN NAMES & TITLES FROM
    DATA
340 REM
350 FOR I=1 TO 5 :REM # OF RECORDS
360 FOR J=1 TO 3: REM # OF FIELDS
370 READ S$(I,J): REM READ NAMES
375 PRINT S$(I,J);" ";
380 NEXT J:PRINT : NEXT I
390 REM
400 REM PAD DATA FIELDS
410 REM
420 FOR I=1 TO 5
420 FOR I=1 TO 5
440 L=LEN (S$(I,1)) :REM LAST NAME
    LENGTH
460 FOR K=L+1 TO 10:S$(I,1)=S(I,1)+" "
480 NEXT K :REM PAD LAST NAME
500 L=LEN (S$(I,2)) :REM 1ST NAME
    LENGTH
520 FOR K=L+1 TO 6:S$(I,2)=S$(I,2)+" "
540 NEXT K :REM PAD FIRST NAME
560 L=LEN (S$(I,3)) :REM TITLE LENGTH

```

```

580 FOR K=L+1 TO 16:S$(I,3)=S$(I,3)+" "
600 NEXT K :REM PAD TITLE
620 NEXT I :REM DO 5 RECORDS
640 REM
660 PRINT : PRINT "CREATE RANDOM FILE"
680 REM
700 PRINT D$;"OPEN RNDFIL,L33"
720 REM
740 FOR R=1 TO 5
760 PRINT D$;"WRITE RNDFIL,R";R
780 PRINT S$(R,1)+S$(R,2)+S$(R,3)
800 NEXT R :REM WRITE 5 RECORDS
820 PRINT D$;"CLOSE" :REM CLOSE FILE
840 REM
860 PRINT : PRINT "READ DATA BACK IN";
865 PRINT "REVERSE ORDER...":PRINT
870 PRINT" # # APPLE USER'S GROUP
    (SYDNEY) OFFICERS # # "
880 PRINT :REM OPEN FILE FOR READ
900 PRINT D$;"OPEN RNDFIL,L33"
920 FOR I=5 TO 1 STEP -1
940 PRINT D$;"READ RENFIL,R";I
945 INPUT A$ :REM GET RECORD FROM DISK
950 REM
955 REM RE-ARRANGE DATA FIELDS
960 REM
980 PRINT MID$(A,11,6); :REM 1ST NAME
985 PRINT LEFT$(A$,10); :REM LAST NAME
990 PRINT MID$(A,17,16) :REM TITLE
995 NEXT I :REM READ 5 RECORDS
1000 PRINT D$;"CLOSE":REM CLOSE FILE
1020 PRINT D$;D$;"MON I,C,O"

```

As can easily be seen by looking at the code in lines 180-220, the data set is created with last name first, and that is how it is stored on the disk. Lines 440-520 take care of 'padding' each of the fields to the same number of characters to preserve the required fixed length record size.

Note that a RANDOM file generally must be created the FIRST time by writing the data sequentially using the RECORD NUMBER as the 'KEY'. Once created, data may be READ in any order desired, as witnessed by lines 700-790 which READ the data in reverse order.

By now, you've probably figured out the major drawback to RANDOM files in the APPLE DOS: You must at all times be aware of the RECORD number of all your data if it is to be retrieved non-sequentially.

(How the record numbers are kept track of is the subject by a technique known as INDEXING).

## Apple //c Versions

Written by: Guillermo Ortiz November 1, 1987  
 Reproduced from Apple Technical Notes, by  
 courtesy of Apple Computer Australia.

Since its introduction the Apple //c has been revised three times; the following paragraphs document the main differences between the four different //c ROM versions.

### Original //c ( \$FBBF = \$FF )

- It can use the //c External Drive only
- No AppleTalk Firmware
- PR#7 boots the second drive
- Mouse Firmware Maps to Slot 4
- Serial Firmware does not mask incoming line feed characters
- Serial Firmware does not support XON/XOFF protocol

### 3.5 ROM //c ( \$FBBF = \$00 )

- It can use the //c External Drive and 3.5" Drives.
- AppleTalk Firmware
- PR#7 gets the message "AppleTalk Off Line"
- Mouse Firmware Maps to Slot 4
- Serial Firmware defaults to masking of all incoming line feed characters
- Serial Firmware supports XON/XOFF protocol

### Original "Memory Expandable" //c ( \$FBBF = \$03 )

- It can use the //c External Drive, 3.5" Drives and //c Memory Expansion Card.
- Mouse moved to Slot 7
- No AppleTalk Firmware
- PR#7 kills the system
- Serial Firmware defaults to masking of all incoming line feed characters
- Serial Firmware supports XON/XOFF protocol

### Revised "Memory Expandable" //c ( \$FBBF = \$04 )

- Same as Original Memory Expandable, plus
- Keyboard Buffering firmware bug fixed
- Firmware returns correct information when the Memory Expansion Card is not present.

## Apple // Family Identification

Written by: Cameron Birse December 15, 1986  
 Revised by: Guillermo Ortiz November 1, 1987  
 Reproduced from Apple Technical Notes, by  
 courtesy of Apple Computer Australia.

This note describes the ROM Identification Bytes in the Apple // Family.

### Apple // Family Identification

| Machine                       | \$FBB3 | \$FB1E | \$FBC0 | \$FBBF |
|-------------------------------|--------|--------|--------|--------|
| Apple ][                      | \$38   |        |        |        |
| Apple ][+                     | \$EA   | \$AD   |        |        |
| Apple /// (em)                | \$EA   | \$8A   |        |        |
| Apple //e                     | \$06   |        | \$EA   |        |
| Apple //e<br>(enhanced)       | \$06   |        | \$E0   |        |
| Apple //c                     | \$06   |        | \$00   | \$FF   |
| Apple //c<br>(3.5 ROM)        | \$06   |        | \$00   | \$00   |
| Apple //c<br>(Mem. Exp.)      | \$06   |        | \$00   | \$03   |
| Apple //c<br>(Rev. Mem. Exp.) | \$06   |        | \$00   | \$04   |
| Apple IIGS                    | \$06   |        | \$E0   |        |

In addition to checking the value of these bytes, you now must also call a monitor routine to determine compatibility between existing machines and future machines. As you can see, the Apple IIGS looks like an Apple //e, until you call the monitor subroutine. The call would look like this:

```

SEC ;Set carry bit (flag)
JSR $FE1F ;Call to the monitor
BCS OLD MACHINE ;If carry is still set, then
    old machine
BCC NEW MACHINE ;If carry is clear, then new
    machine

```

In all the current Apple // ROMs, \$FE1F contains an RTS. In the Apple IIGS, there is a routine that returns compatibility information in the A, X, and Y registers. This is described on the next page.

Apple IIGS System info generated by the Monitor ID routine

```

Bit Accumulator X Register Y Register
Bit 15 Reserved Reserved . \
Bit 14 Reserved Reserved . |
Bit 13 Reserved Reserved . |
Bit 12 Reserved Reserved Machine ID Number
Bit 11 Reserved Reserved >0 = //GS
Bit 10 Reserved Reserved . |
Bit 9 Reserved Reserved . |
Bit 8 Reserved Reserved . /
Bit 7 Reserved Reserved ROM version number
Bit 6 1 if system has memory expansion slot
Reserved ROM version number
Bit 5 1 if system has IWM port
Reserved ROM version number
Bit 4 1 if system has a built in clock
Reserved ROM version number
Bit 3 1 if system has desktop bus
Reserved ROM version number
Bit 2 1 if system has SCC built in
Reserved ROM version number
Bit 1 1 if system has external slots
Reserved ROM version number
Bit 0 1 if system has internal ports
Reserved ROM version number
    
```

Note: In the 6502 (8 bit) mode, only the lower 8 bits are returned.

Note: The original Apple IIGS ROM returns a faulty value in the accumulator. The value returned is \$xx1F and should be \$xx7F. If you see a \$0000 in the Y register (in other words, Apple IIGS, ROM version \$00), you should assume that the accumulator value is \$xx7F.

The current Apple IIGS ROM (ROM version \$01) sets all the registers correctly before returning from this call.

If there are any subjects which you would like to see treated in a Technical Note, please send a note to the following address:

Apple // Technical Notes c/o Apple Computer Australia  
16 Rodborough Road, FRENCHS FOREST NSW 2086  
Telephone: (02) 452 8000

Technical Notes are sent to all certified and registered developers at no charge.

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Australasian Apple Programmers and Developers Association  
P O Box 1156, Wollongong, NSW, 2500  
Telephone: (042) 26 8880

## PRODOS NEW YEAR PRESENT

By Colin Rutherford

On new years day - while running Appleworks, which uses Prodos and a clock card, I was annoyed to see the Appleworks date and all file dates appearing as 1-Jan-82.

This happens when reading a clock card because Prodos, versions up to 1.1.1 and maybe later, has a lookup table for the year which runs from '82 to '87.

My immediate fix was to copy Prodos 8 V1.4 from my latest Beagle Bros disk on to the Appleworks start-up disk. This is a patched Prodos, because it also includes BIRD'S BETTER BYE as the quit program so maybe the original Apple V1.4 still has the date limitation. Incidentally the new quit program allows you to scan all volumes that are on line and select your next application.

If you want to stay with V1.1.1 to avoid problems you have encountered in later versions then you can alter the lookup table on the start up disk.

First make sure the Prodos version that you are going to BLOAD is V1.1.1. Get into Basic from your utilities disk or by your usual method.

BLOAD PRODOS,A\$2000,TSYS.

Enter the monitor by typing CALL -151 and type in new hex values as follows.  
\* 4F76:5A 59 58 58 Return Return to basic with control-C and put your Appleworks startup disk in the drive.

BSAVE PRODOS,A\$2000,TSYS.

Note: you might have to UNLOCK PRODOS first. This will now date correctly up to 1990.

A more detailed coverage of this problem appears in Open Apple, October 1985 and various other magazines.



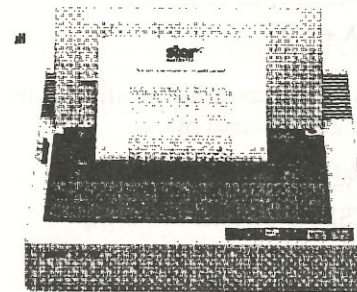
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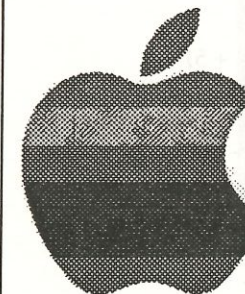
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## Use of NESTED FUNCTIONS in APPLESOFT

By Ken Ozanne

I started out with the following rather messy function and tried to write an Applesoft program to calculate it:

$$\frac{1+X+X^2+ \text{EXP}(1+X^2+ \text{ARCSIN}(3\text{SINH}(1+13^2X)))}{\text{LOG}(1+2^2X^2+5^2X)}$$

In fact this is really not very complex at all and it could be handled as a single function by:

```
100 REM DEF FN BA(X)=(1+x*x*x+
EXP(1+x*x+ARCSIN(3-SINH(1+13*x)))/
LOG(1+2*x*x+5*x)
```

- or at least it could if we had built in ARCSIN and SINH functions on the Apple. For those one or two people who don't have this firmly in memory, a quick glance at the Applesoft Manual, pages 102-104 will remind you that these functions are not given although methods of defining them are.

I could have changed to something more complex, but I thought some of my readers might prefer me to keep things relatively simple.

So please pretend that the function above is sufficiently complex to force something like the following development on us. I can assure any doubting Thomases that I can quite easily find something MUCH more complex! (And, if I hear any dissent in the ranks I will.)

I wrote the following little program with the object of demonstrating that you may build up functions of arbitrary complexity in the Apple by means of a series of functions each defined partly in terms of previous ones.

```
480 REM Don't get too involved in the wonders of
this program, because it doesn't actually work!
500 DEF FN AA(X) = X * (2 * X + 5) + 1
520 DEF FN AB(X) = LOG ( FN AA(X))
530 REM SINH (X)
540 DEF FN AC(X) = (EXP (X) - EXP(-X)) / 2.0
560 DEF FN AD(X) = 3- FN AC(13 * X + 1)
580 DEF FN AE(X) = ATN (X / SQR (1 - X * X))
: REM ARCSINE
600 DEF FN AF(X) = FN AE( FN AD(X))
620 DEF FN AG(X) = X * X + 1 + FN AF(X)
640 DEF FN AH(X) = EXP ( FN AG(X))
660 DEF FN AI(X) = 1 + X + FN AH(X)
680 DEF FN AJ(X) = FN AI(X) / FN AB(X)
```

```
1000 Z = FN AB(3): PRINT Z
1100 ZZ = FN AC(3): PRINT ZZ
1200 Z1 = FN AD(3): PRINT Z1
1300 Z2 = FN AJ(2): PRINT Z2
```

I'd suggest that anyone seriously interested work through the above seeing how it all builds up to the original large function. It will be difficult to actually learn anything from this article if you don't. In the nature of things this must be a little complex to be at all realistic.

At times, I had various other lines between 1200 and 1300, but these serve to demonstrate the problem. References by one function to another are handled via the stack and this reference is prodigal of memory. It would appear that references by one function to another can be nested not more than seven deep before you run out of stack. (You get an OUT OF MEMORY error, which I have explained elsewhere frequently means OUT OF STACK.)

In the Apple, the user is always in complete control, so you can certainly do something about this limitation. However, it is not the sort of thing most of us would want to get involved in casually. (If anyone does produce a good way around this, please publish it!)

What I did was first to dig out what was going wrong and second to reduce the complexity of the nesting by setting variables to values calculated by some of the functions and continuing calculations in terms of these variables. (Variables Z2 to Z6 in the following program.) In fact this is generally better technique in giving easier to read code and the following program would be improved by some more of it.

The second program came out looking like this. This one will actually run.

```
500 DEF FN AA(X) = X * (2 * X + 5) + 1
520 DEF FN AB(X) = LOG ( FN AA(X))
530 REM SINH (X)
540 DEF FN AC(X) =(EXP (X) - EXP (-X)) / 2.0
560 DEF FN AD(X) =3- FN AC(13 * X + 1)
580 DEF FN AE(X) = ATN (X / SQR (1 - X * X))
: REM ARCSINE
600 DEF FN AF(X) = FN AE( FN AD(X))
620 DEF FN AG(X) =X * X + 1 + FN AF(X)
640 DEF FN AH(X) = EXP ( FN AG(X))
660 DEF FN AI(X) = 1 + X + FN AH(X)
680 DEF FN AJ(X) = FN AI(X) / FN AB(X)
1210 Z4 = FN AE(0.8): PRINT Z4
1215 PRINT FN AD(0.08)
```

```
1220 Z2 = FN AH(0.08): PRINT Z2
1230 X = 0.08
1240 Z3 = 1 + X + Z2
1250 PRINT Z3
1260 Z5 = FN AB(X)
1270 PRINT Z5
1300 Z6 = Z3 / Z5
1320 PRINT Z6 -
```

An additional problem, inherent in this kind of thing, was to find a number for which the complicated function actually exists and is of reasonable size. The value of 0.08 above is not accidental. (You may care to calculate the rather narrow range of values of x for which it is defined.)

In fact this type of procedure can be extended to handle functions of arbitrary complexity (there is enough in the foregoing to allow this), but only if they can be defined in terms of the built in Apple functions. There are plenty of functions that cannot be defined thus and it is then necessary to adopt quite different procedures to define them. However, examples of that kind will have to wait for another article.



## Applesoft Hints

For NEW Applesoft programmers here are some handy hints.

When programming in Basic, place GOTOs at the top of the program. Since Basic searches from the top to the bottom of the program, searching for a particular line number. If the line number it is looking for, is at the top of the program, the computer will find it faster.

Don't use constants in a FOR-NEXT loop.

DON'T--

For A = 1 TO 100 : B = A / 23.12

DO----

C=23.14 : FOR A = 1 TO 100 : B = A/C

and define all your variables at the beginning of the program.

# BACK<sup>4</sup>UP

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## How to Print Specialty Printer Functions into AppleWorks

By Doug Peter, courtesy of Northern Illinois Computer Society

I'm sure that all of us have gone to the local computer store at one time or another - in search of the perfect printer. We bring it home, stars in our eyes, only to find that none of our programs work with it.

Or, the print driver program does work with the printer, but does not access all of the functions we need.

The writers of Apple Works knew of this agony. If we wish, we can re-program AppleWorks to use different printer commands, and use different printers. This sounds like a complex task, but it is really quite simple. Most of the actual programming is done by AppleWorks, all we need is tell which function we want and the sequence of command codes needed to activate it.

The modern dot-matrix printer has its own little computer built right in. It controls functions like different fonts, different line spacings, and so forth. The Apple computer tells the printer to change its print mode by sending signals to the printer along with the text that is to be printed. These signals are numbers, usually from 0 to 127. For example, if the Apple sent the codes 15 72 73 13 10 to the printer, the printer would go to compressed mode, 17 characters per inch printing (15), print "HI" (72,73), and return the print head to the beginning of the next line (13,10). These code numbers are in decimal, and are for the Epson printer. The codes that tell the printer to print letters are called ASCII code (short for the "American Standard Code for Information Interchange"). Like the name says, it's standard - used by all but the most exotic computers. However, the codes that change printer functions have as many variations as there are printers, which is why you must have the printer manual to do any programming. The manual will contain the codes needed to change the printer functions. It should also contain a chart of the ASCII codes. Incidentally, many of today's printers are set up to use the Epson command set. You should try using one of the Epson print drivers that come with AppleWorks before writing your own print driver.

### Writing the Printer Driver

To start with, you will need the manual for the printer, and pencil and paper. You must make a list

of functions your printer has, and the numeric codes that the computer must send to the printer to turn each function on and off. Leave a few lines of space between each function.

Most manuals have a chart like this already in them. You might want to make your own chart anyway, since more information is needed for entering the control codes into Apple Works.

Theoretically, you should be able to enter these codes into AppleWorks and be done with it. However, AW doesn't accept numeric command codes, only ASCII keycodes. Therefore you must translate now your chart of numeric codes into a chart of ASCII codes (now you see why I said to leave some space between functions; this is where you write in the ASCII codes).

For instance, if I wanted to enter a 66 into the print driver, I would press the B key (in ASCII, 66 is B). or, if I needed to enter a 35, I would press the # key (shift-2).

However, the ASCII code has no corresponding letters from 0 to 31. To enter these codes, you must press a combination of a character and the Control key (CTRL). For example, if 18 is needed, I would hold down CTRL and type O at the same time. The common way of writing "CTRL and" is to put a caret sign in its place (^A means "hold down CTRL while pressing A").

Table 1 shows the ASCII table with all the keycodes from 0 to 31 included. Use it to convert the print codes on your table to ASCII keycodes acceptable to AppleWorks.

Table 2 shows you an example list of printer codes and their ASCII equivalents. This chart is for an Epson LX-80 printer, like an MX-80 but with Near-Letter-Quality, and a few other extras thrown in.

I know that making a table like that is difficult, but that is the hardest. Once you have that finished, you are almost through writing the print driver. All that remains is entering the ASCII keycodes into AppleWorks.

### Entry into AppleWorks

We will run through the code step by step. It's not hard at all, only a bit tedious. Plus, we have AppleWorks' user-friendliness on our side, so it will be reasonably quick to enter the values, and

mistakes will be easy to correct. Take it from me, its much better than WordStar at entering new printer codes.

First, boot up AppleWorks. When you come up to the main menu (it will have choices like "Add files to the desktop", etc. for options). Choose option 5, "Other Activities."

The "Other Activities" menu will overlay itself on the "Main Menu". Choose option 7, "Specify Information about your printer".

The "Printer Information" menu will overlay itself on the "Other Activities" menu. Choose option 2, "Add a Printer".

AppleWorks will now give you a list of printers it supports. Choose the Custom Printer option.

NOTE: Although AppleWorks can support 3 printers at the same time, only one can be a custom printer.

The other two must be from a list of pre-programmed printer drivers. This is a big limitation in my opinion, since it forces me to work with at least 3 back-ups (one for my LX-80 printer, one for my mother's MX-80, and one for printing to a disk file instead of a printer).

If there is no other custom printer, AppleWorks will ask you for the name of your printer, and the slot number of the printer card.

### Page Formatting Setup

After entering this information, AW will then automatically go to the "Change Printer Specifications" menu. It will offer you some choices about page formatting and printer codes. We'll start at the top.

The Apple Parallel Interface card (which I have fitted) will automatically add a new line feed command to each Carriage Return, so I answered "No to the question, "Needs Line Feed after each Return?"

Most printers can remember where the top of the page is, and accept a command to go to the page top by themselves. However, even if your printer has this capability, I suggest you answer "No" to this question, "Accept top-of-page command?". This forces AppleWorks to keep track of the pagetop, and allows for better form control.

If you plan to use single sheets of paper, answer "Yes" to "Stop at the end of page?". If (like most of us) you use continuous fan-fold paper, answer "No". If you change paper types some time in the future, you can easily change your answer later.

"Platen" is another word for the rubber tube that the paper rolls on. Plate width is really the width of the paper you are using, and how far the printhead can travel from one end to the other. AppleWorks accepts all measurements in inches, so answer "8.0" inches for a standard printer, or "13.2 for a 132-column printer.

Some printer cards, most notably the Apple Parallel Interface card, need to have some special codes sent to it to print 80 columns (80 letter spaces) wide, or 132 cols., rather than the standard 40. For the Apple card, the code is CTRL-I 80n, where (n) is the slot number of the printer card (CTRL-I 132n for 132 cols.).

### Now for Printer Codes

Now for the biggie... the Printer Codes option! This is where we enter the information from your printer codes chart. We'll go through these slowly.

First, go with the "Boldface' Subscript, and Superscript" option. Then go with the "Boldface Begin" option.

You will then be turned over to the command editor. This editor is not too friendly, but it is workable. Here is where you enter your ASCII keycodes. When you have entered them, hit "shift" and "6" at the same time (the "^" symbol). You will see the keycodes on the screen as you go. If you made a mistake, hit shift-6 and start over.

**DON'T hit the backspace key, or ESC - as AppleWorks will interpret them as keycodes, rather than editing inputs.**

Of course, your printer had better not use shift-6 as one of its codes, because you can't enter it as a keycode. This is very rare!

Enter the keycodes for the "turn-on-boldface" command. There are two different options on our function list in table 2 that will perform boldfacing, the "Emphasised" mode, or the "Double-Strike" mode. Which to use? **Both!** There is no law against turning on two modes at the same time, so let's use them. Hit the "Escape" key, then capital "E", then the ESC" key again, then "G", and finally shift-6 to quit. Esc E starts emphasized mode, and Esc G starts Double-Strike mode. Hitting shift-6 will get you back to the "Boldface,super, and sub" menu.

Now, enter the off-codes for boldface by choosing the "Boldface End" option. Hit Esc F Esc H shift-6 (emphasised off, double-strike off, end editing).

Next go with the "Subscript Begin" option. Once in the editor, enter Esc S^A shift-6. Choose "Subscript

End". Enter Esc T shift-6. Of course these codes are for my printer, from table 2, and may be different for others.

Choose the Superscript begin" option. Enter Esc S ^@ shift-6. Then go to the "Superscript End" option. Enter Esc T shift-6.

All of the codes in this menu have been entered, so lets go back to the Printer Codes" men, by hitting the Esc key. Now choose the underlining" function.

Four choices will show up: (1) don't attempt underlining, (2) printer has underline start/stop commands, (3) print character, backspace, underline, or (4) print line, Carriage Return, underlined. As you can see from table 2, my printer has underline start/stop commands, so I'll go with that one. I would then choose the "Underline start" option and the enter Esc-^A. Then "Underline End", and Esc- ^@.

If your printer doesn't have underline start/stop commands, like most daisy-wheel printers, go with option 4, "Print line, Carriage Rreturn, underlines.". This is way better and faster than option 3.

If you must choose option 1 "Don't attempt underlining.", then go to a hardware store, buy 50 feet of rope, and sell your printer as a boat anchor. It's no good as a printer.

After choosing the underline mode, use Esc to get back to the Printer Codes menu ("Characters per inch," "Lines pere inch," "Boldface, etc.," and "Underlining" are the choices) and choose the "Lines per inch" option. AW will then ask you to enter the codes for changing to 6-lines-per-inch spacing and 8-lines-per-inch spacing . Choose 6 to start with.

You will notice that AW will only accept one code for this mode (no begin *and* end code). This is fortunate for the Epson, because it only uses one code as well (see table 2).

Enter it by pressing Esc 2 shift-6.

#### If You Need Begin AND End Codes

What if your printer requires a begin code and an end code? You will have to include the end code sequence in the other mode's begin code sequence. In other words - say you are in 8-lines-per-inch spacing and you need to switch to 6LPI. The begin code for 6LPI would have to turn off the 8 LPI first before turning on the 6 LPI mode. So, the begin code for 6 LPI would contain the end-8-LPI code, and then the 6-LPI code.

Anyway, now choose the "8-lines-per-inch" option. Enter the begin code by typing Esc 0 shift-6 (for LX-80 example).

After you have finished with the line spacing commands, hit Esc to return to the Printer Codes menu. Choose the "Characters per inch" option.

#### 21 Choices of CPI - Plenty of Spares!

AW will prompt you for the codes for changing the printer to print in different character widths. You can enter codes to change the print width from 4 characters per inch (CPI) to 25 characters per inch. However, my printer only supports 3 of these widths, 10 CPI (Pica), 5 CPI (double wide), and 17 CPI (compressed), so 18 of the above choices will go unused.

Once again, this is a single-code option, where you can only enter the begin-code, and not the end-code. As stated above, each begin code may have to contain the end-codes for all of the other modes, and thus the code sequences may become rather involved. There is, however, an easier solution. Instead of telling the printer to turn each mode, simply include the "Reset" code in all sequences. This will shut off all other modes befor switching to the desired print mode. This will also reset the printer's top-of-page, but that won't really matter since AppleWorks will not send the Top-of-Page command.

#### CPI Commands for Multiple uses

Also, we can include other commands in the characters-per-inch sequence. We can include the command for turning on Near-letter-Quality mode, or the Italic mode, or whatever we want! My Epson doesn't allow for both NLQ and Italic to be on at the same time, but there is a way around that, as you will see.

So...Each code sequence for characters per inch in my print driver will contain - the Reset code (Esc @), the NLQ code (Esc x ^A), and the begin code for whatever print width I want (Pica, compressed, or double-wide).

Choose the 10 option. This is for pica. There is no begin code for pica mode for the Epson, because it's the default mode (it comes on automatically after reset). So, enter the codes by pressing Esc @ Esc x ^A shift-6 (reset, NLQ,end edit).

Now choose the 5 option (Double-wide printing). Enter the codes: Esc @ Esc x ^A Esc W ^A shift-6 (reset, NLQ, double width, end edit).

Then choose the 7 option (compressed). As before - enter: Esc @ Esc x ^A ^O (same as above, but with the compressed code instead of the double-width sequence at the end).

#### All Done - Ready to Test

You have now finished your new custom printer driver. All the codes have been entered, and all you need to do now is hit Esc several times to get back to the main menu. AppleWorks will automatically save your print driver. You should go to the word processor now and enter a short test document that contains examples of all print modes in it. Print it out as a test, to make sure that all your changes work with each other. If there is a problem, you can go back down to the "Change Printer Specs" menu and rework part of th print driver if necessary.

Have fun with your supercharged version of AppleWorks, and remember: the computer works for you and its easy to change things around if things don't suit you.

|    |    |         |     |    |       |
|----|----|---------|-----|----|-------|
| 30 | 1E | ^^      | 94  | 5E | ^     |
| 31 | 1F | ^       | 95  | 5F | ~     |
| 32 | 20 | (SPACE) | 96  | 60 | `     |
| 33 | 21 | !       | 97  | 61 | a     |
| 34 | 22 | "       | 98  | 62 | b     |
| 35 | 23 | #       | 99  | 63 | c     |
| 36 | 24 | \$      | 100 | 64 | d     |
| 37 | 25 | %       | 101 | 65 | e     |
| 38 | 26 | &       | 102 | 66 | f     |
| 39 | 27 | '       | 103 | 67 | g     |
| 40 | 28 | (       | 104 | 68 | h     |
| 41 | 29 | )       | 105 | 69 | i     |
| 42 | 2A |         | 106 | 6A | j     |
| 43 | 2B | +       | 107 | 6B | k     |
| 44 | 2C | ,       | 108 | 6C | l     |
| 45 | 2D | -       | 109 | 6D | m     |
| 46 | 2E | .       | 110 | 6E | n     |
| 47 | 2F | /       | 111 | 6F | o     |
| 48 | 30 | 0       | 112 | 70 | p     |
| 49 | 31 | 1       | 113 | 71 | q     |
| 50 | 32 | 2       | 114 | 72 | r     |
| 51 | 33 | 3       | 115 | 73 | s     |
| 52 | 34 | 4       | 116 | 74 | t     |
| 53 | 35 | 5       | 117 | 75 | u     |
| 54 | 36 | 6       | 118 | 76 | v     |
| 55 | 37 | 7       | 119 | 77 | w     |
| 56 | 38 | 8       | 120 | 78 | x     |
| 57 | 39 | 9       | 121 | 79 | y     |
| 58 | 3A | :       | 122 | 7A | z     |
| 59 | 3B | ;       | 123 | 7B | {     |
| 60 | 3C | <       | 124 | 7C |       |
| 61 | 3D | =       | 125 | 7D | }     |
| 62 | 3E | >       | 126 | 7E | ~     |
| 63 | 3F | ?       | 127 | 7F | (DEL) |

Table 1: ASCII chart; column 1 is the decimal code number, column 2 is its hexadecimal equivalent, and column 3 is the ASCII code (the key needed to enter that code number into the computer).

#### What To Do With The Spare CPI Commands

Remember when I said we could program in any character width from 4 to 25? The above example only used 3 out of the 21 available widths, leaving 18 unused. While Epson LX-80 doesn't support any other character widths, there are many other features that it does support, like italics. We can trick AppleWorks into using these features by hiding them in one of the unused character width control sequences. For instance, when I tell AW to go to a width of 9 CPI (with the CI option), the printer still prints at 10 CPI, but in Italic mode instead of NLQ mode. Similarly, CPI's of 4 and 16 can produce Italic Wide, and Compressed respectively. The only problem is that I can't mix NLQ and Italics on the same line, and the margins are goofed up. Still - my print driver does support them, and my letters have never looked better.

| FUNCTION               | ON-CODES             | OFF-CODES            |
|------------------------|----------------------|----------------------|
| Wide Print<br>(5 CPI)  | 27 87 0<br>ESC W ^A  | 27 87 1<br>ESC W ^@  |
| Compressed<br>(17 CPI) | 15<br>^O             | 18<br>^R             |
| 6 Lines per<br>inch    | 27 2<br>ESC 2        | (no code)            |
| 8 Lines per<br>inch    | 27 0<br>ESC 0        | (no code)            |
| Emphasised             | 27 69<br>ESC E       | 27 70<br>ESC F       |
| Double Strike          | 27 71<br>ESC G       | 27 72<br>ESC H       |
| Subscript              | 27 83 1<br>ESC S ^A  | 27 84<br>ESC T       |
| Superscript            | 27 83 0<br>ESC S ^@  | 27 84<br>ESC T       |
| Underline              | 27 45 1<br>ESC - ^A  | 27 45 0<br>ESC x ^@  |
| Near Letter<br>Quality | 27 120 1<br>ESC x ^A | 27 120 0<br>ESC x ^@ |
| Italics                | 27 52<br>ESC 4       | 27 53<br>ESC 5       |
| Reset                  | 27 64<br>ESC @       | (no code)            |

Table 2: Sample chart of print functions and their control codes for the Epson LX-80. Numeric codes are decimal, and the codes beneath them are the keys you hit to enter the numeric codes. Again, ^ anything means to hit the CTRL key at the same time as the character.

NOTE: A character preceded by a ^ (caret symbol) means that the CTRL key must be held down at the same time (for example, ^A means holding down the CTRL key and the A key at the same time).



## ESCAPE FROM RUNGISTAN

Written by Bob Blauschild,  
Marketed by Sirius Software,

Reviewed by Mike Carlton.

Have you ever had the feeling that you were getting extremely bored of sitting in front of your battered terminal after frying several million aliens, or stabbing hundreds of angry pirates, or defusing endless nuclear reactors, or karate-chopping thousands of mindless Bruce Lee look-alikes, or....?

To tell the absolute truth, I have. As any loyal Apple fan would feel after a particularly drab session of, say, catching little blue horned creatures that put you to sleep whilst you play and hog up sectors on your disk, one is hit by a tremendous feeling to the effect that one would like to pick up the nearest drive and throw it at the monitor. (Sounds nasty, doesn't it!!) I have come across the syndrome more than once more than twice. And it is rightly to be feared and avoided.

There are only a few programs around these days that can confront the syndrome and beat it. Classics like BRÖDERBUND's "LODE RUNNER" and FIREBIRD's "ELITE", that hook you and glue you to the terminal. That enable your hands to endlessly press keys and move joystics. That make you wake up in the middle of the night in a cold sweat, images of Thargoids and GalCop dissipating back into your subconscious after scaring the hell out of even your nightmares. Those readers who have experienced it will know what I mean. It is truly a bad thing if an Apple goes rotten. However, some months ago, in the middle of a particularly severe attack of digital depression, an old friend of mine, The Beta Pirate, came around to my place, and, seeing my plight, gave me a copy of a game published by Sirius Software (before they unfortunately defunked a year later in 1983) called "Escape from Rungistan." He told me to make at least thirty backups of it because he said that as soon as it hooked me, I would wear every copy of it to a frazzle from overuse. And he wasn't far wrong, either! I crawled from the television room upstairs to the room where my faithful 128Kb ][e resided. Floppy in hand, stale cheese sandwich in mouth, I turned the old faithful on, and stuck my newly-acquired game into the drive. It booted up, and told me who it was, who wrote it, published it, (all the usual useless stuff you get on most disks...) when, how, why, and the games' objective.

It starts off by saying you have crossed the border into Rungistan, in Central Africa. (Please note: As proclaimed by most atlases, there is no such place as Rungistan. However, I have my suspicions; I think it's there, and in all likelihood, the South Africans have imposed a media blackout on it.) You have to get out of your prison cell and make it back across the border. It also says to look at things carefully. If you are to make it across the border, as I did, you will most certainly have to, because the game is fiendishly complex and more subtle than a tax increase.

The graphics are all that's needed for this type of game, although a little colour would go a long way. There is also the option of having music, which occurs at appropriate times and places. You can also kill the music if it begins to annoy you. The parser (The part of the program that accepts and interprets your commands) is only adequate, and this is demonstrated when you get to the saloon and try to open the combination lock on the cabinet. I got so angry with it that I reset and changed the listintg near line 500. I had all the clues to open the lock, but I couldn't get it to accept the combination. Four-letter words and tears before teatime abounded. Still, it did highlight the parsers' inadequacy.

The program has its own unique flavor. At various stages you will be hit with a pipe and told to shut up, told that you are a heartless brute, told that the Priest is playing Bingo, told that you have broken your neck on a fish, told that you copped a severe outbreak of splinters in the face, told that you have been ploughed under by a careless farmer, told that you don't want to eat a dirty omlette, told all sorts of things that make you want to pick up the nearest Molotov cocktail and turn your Apple into a flambe. However, there is a respite from all this cheek and computerised idiocy. You can ask the computer for help. A lot of the time, understandably, the machine tells you nothing of any great significance. But occasionally, the machine may give you a vital clue, and this can be most helpful if you are stumped by a particular problem.

In all, I think it is quite a good game for those who like this type of adventure. Despite the graphics and the inadequacy of the parser, it has a well thought-out concept. I think that the Syndrome is on its way out when more like ESCAPE FROM RUNGISTAN hit the shelves. Below, I've included a few hints I found in the hint file on the disk itself using The Sector Editor from Copy ][ plus 5.4. (C) 1985 Central Point Software. I hope you find some of them useful.

### HINTS:

You didn't read the book in the cell!  
The last number is east of the rebel.  
Don't try crossing the river again.  
These doors look like they'll float.  
Wait for the helicopter.  
Did you look in the cabinet in the saloon?  
Try calling the guard.  
Did you look at the food before you ate it?  
Have you gone east for some wood for a raft?  
Find the canteen here and go southwest to fill it.  
Did you catch the mouse in the jail cell?  
You need some dynamite.  
Look in the jungle.  
Go past the end of the road south of the farm.  
You should have read both books in the cell (left one first).  
Have you looked southwest of the gas station?

Did you look southwest of the gas station?  
Look for work on the farm.  
You are cleared for takeoff.  
A smart pilot would look at the controls.  
Have you read the graffiti on the sidewalk in the valley?  
Light the dynamite, throw it, and run!  
You might need the rope later.  
If you see a snake -- don't move.  
You need to run, then jump.  
Follow the path.  
Check out the cave.  
Did you find the knife in the desert?  
Did you find the canteen in the mountain and fill it?  
Did you look in the cave in the cliffs?  
Try violence!!  
Mike Carlton, <THE PREDATOR>



## BULK PURCHASE NOTES



Some very good programs have been provided for the Apple // range. The Beagle Bros. software is very new and has received accolades from reviewers. Other programs are just good value or very popular. These items will be carried for a limited period only, so place your order early, while the US\$ exchange rate is good.

### New TIMEOUT Series - from Beagle Bros.

**TIMEOUT - QUICKSPELL;**  
Check Your spelling without leaving you  
AppleWorks program - \$ 95

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The most powerful Macro program written for  
AppleWorks. \$ 83

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Makes the best desktop tools available from  
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=====

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An adventure game that builds thinking skills  
from The Learning Company \$86

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An exiting Adventure Game \$ 87

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## SETTING UP EPSON PRINTERS WITH THE APPLE IIc

If the Epson Serial Cards are set up to the IIc's default values, (ie 8 Data Bits/2 Stop Bits, 9600 bps & No parity) text is printed in *Italics*. This is due to the way in which Apple treat the eighth data bit. Apple set the eighth bit to a logic 'high'. This selects the alternate character set, which happens to select *italics* characters in the Epson printers international character set.

This can be overcome by setting up the dip switches on the Epson serial card as in diagram 1. This changes the printers serial port to 7 Data Bits/2 Stop Bits, 9600 bps & No Parity.

The result of this is that text is printed normally. Most Application Software Packages will run without problems. A solution to problems with other packages (eg Printshop) will be covered in User Tips #2.

NOTE: This document does not apply to the GX-80 / 8699 PIC.

### DIP SWITCH SETTINGS FOR EPSON SERIAL CARDS.

NOTE: THESE SETTINGS CONFIGURE THE SERIAL CARDS FOR 7 DATA BITS, NO PARITY AND 9600 BPS. THIS IS NOT THE DEFAULT VALUES OF THE APPLE IIC SERIAL PORT No. 1.

### EPSON SERIAL INTERFACES

| 7148    | 7149    | 8141/<br>8143 | 8145    | 8146 | 8148    | 8149    |
|---------|---------|---------------|---------|------|---------|---------|
| 1-1 OFF | 1-1 OFF | 1-1 ON        | 1-1 ON  | W    | 1-1 ON  | 1-1 ON  |
| 1-2 OFF | 1-2 OFF | 1-2 ON        | 1-2 OFF | I    | 1-2 OFF | 1-2 ON  |
| 1-3 OFF | 1-3 OFF | 1-3 OFF       | 1-3 OFF | L    | 1-3 OFF | 1-3 OFF |
| 1-4 OFF | 1-4 OFF | 1-4 OFF       | 1-4 OFF | L    | 1-4 OFF | 1-4 OFF |
|         |         | 1-5 OFF       | 1-5 ON  |      | 1-5 OFF | 1-5 OFF |
| 2-1 ON  | 2-1 ON  | 1-6 OFF       | 1-6 ON  | N    | 1-6 ON  | 1-6 OFF |
| 2-2 ON  | 2-2 ON  | 1-7 OFF       | 1-7 ON  | O    | 1-7 OFF | 1-7 ON  |
| 2-3 ON  | 2-3 ON  | 1-8 ON        | 1-8 OFF | T    | 1-8 OFF | 1-8 OFF |
| 2-4 OFF | 2-4 OFF |               |         |      |         |         |
| 2-5 OFF | 2-5 OFF |               | 2-1 ON  | W    | 2-1 ON  | 2-1 ON  |
| 2-6 OFF | 2-6 OFF |               | 2-2 ON  | O    | 2-2 ON  | 2-2 OFF |
| 2-7 OFF | 2-7 OFF |               | 2-3 OFF | R    | 2-3 OFF | 2-3 OFF |
| 2-8 ON  | 2-8 ON  |               | 2-4 ON  | K    | 2-4 OFF | 2-4 OFF |
|         |         |               |         |      | 2-5 OFF | 2-5 OFF |
|         |         |               |         |      | 2-6 OFF | 2-6 ON  |
| 3-1 OFF | 3-1 ON  |               |         | A    |         | 2-7 OFF |
| 3-2 ON  | 3-2 OFF |               |         | T    |         | 2-8 OFF |
| 3-3 OFF | 3-3 OFF |               |         |      |         |         |
| 3-4 OFF | 3-4 OFF |               |         | 9    |         |         |
| 3-5 OFF | 3-5 OFF |               |         | 6    |         |         |
| 3-6 OFF | 3-6 ON  |               |         | 0    |         |         |
|         | 3-7 OFF |               |         | 0    |         |         |
| 4-1 ON  | 3-8 OFF |               |         |      |         |         |
| 4-2 OFF |         |               |         |      |         |         |
| 4-3 OFF |         |               |         |      |         |         |
| 4-4 OFF |         |               |         |      |         |         |
| 4-5 OFF |         |               |         |      |         |         |
| 4-6 ON  |         |               |         |      |         |         |
| 4-7 OFF |         |               |         |      |         |         |
| 4-8 OFF |         |               |         |      |         |         |



## Timeout ULTRAMACROS for Appleworks

By Colin Rutherford

I bought this program from Chris at the December meeting. It is version 1.1 and was first released by Beagle Bros in September 1987. This is one of a family of TimeOut enhancements for Appleworks and is the most recent of a succession of macro programs that allow a series of keystrokes to be performed in one operation.

Consider how many keys you press to set the left margin in the word processor. This and many more actions can be performed simply by pressing Solid-Apple and another key. The extensive manual describes all the basic functions and notes on the disk go further to introduce you to what is virtually a programming language which can do tasks as simple or as complex as you desire. The installation instructions contain some errors which can confuse at first but when you come to understand the TimeOut system there is no problem. The 5.25 inch disk is not double-sided as they claim.

Timeout is an applications selection program with its own menu inside Appleworks that pops up when you press Open-Apple-Escape. Applications are programs that are loaded from an 'applications disk' when needed. They apply to the whole range of TimeOut programs, not just Ultramacros.

Ultramacros is a modification to the file Appleworks.system on your start-up disk. The installation procedure makes the necessary changes to your Appleworks Start-up disk. The program disk is not altered. When Appleworks is started up a TimeOut title appears and later a second title is displayed just before the main menu. At this point it is trying to find some 'applications' files on a disk, and if you are using the usual two 5.25 disk Appleworks package, it reports an error. The first time user doesn't realise that Ultramacros will still work if you ignore the error.

Later on you will appreciate the following points;

(a) The four files named on the Ultramacros disk and beginning with TO. must be on an 'applications disk'. (The book mentions only three and says they are only required if you have other TimeOut programs.)

(b) If you want to use the start-up disk as an 'applications disk' you will have to copy these files over using a separate copy program. If you don't want to do this then use a copy of the original Ultramacros disk as your 'applications disk'.

(c) The questions you answer in the TimeOut TimeOut will go to when it wants an application. This may be "on start-up disk in slot 6 drive 1" or you could select not on start-up disk but just "slot 6 drive 1" in which case you could use the original Ultramacros disk whenever TimeOut wants them.

I said earlier that Ultramacros can be used even if you ignore the errors when applications can't be loaded. However you would be limited to the set of commands already provided. You will need the applications to alter or make new macros and to use some of the other nice features. All stored macros are kept on disk in wordprocessor files. You use the Compiler application while in the word processor and that set of macros becomes immediately effective. There are no files for compiled versions except that a set of macros is always ready to use when you start up. This set can be replaced by the current set you are using through one of the TimeOut applications.

All the features of Ultramacros are too numerous to list here but some that I like are the screen preserver that blanks the screen if you haven't used the keyboard for a while and the key that prints the date anywhere; similarly if you have a clock card, the time can be put into a document and there are programmed tasks like saving your work automatically every ten minutes. There is an automatic start up that will take you straight to the spreadsheet, database, or wordprocessor file that you want to work on and of course the usual macros like entering your name and address with one key press. The only bug I have found is that the 'rem' token for inserting comments in a compiled version actually prints the comments to the screen.

If you like the thought of using macros then you'll like Ultramacros.

**'APPLEICATIONS'**

Copy is always needed for the user group magazine. This can be; programs, or useful subroutines - with suitable documentation. The greatest value is obtained when a technique can be understood by the readers so that it can be further utilised. Articles on specific topics may be paid for at the discretion of the editor. Reviews are popular because they enable other Apple owners to assess the usefulness of a product. Business techniques or modifications particularly welcome. Hardware modifications should be supplied with clear constructional details, and pictures if possible.

All material is preferred supplied in text file format on a disk, and printout. For Apple // - DOS 3.3 or Appleworks files on 5.25 inch, or Macintosh TEXT files on 3.5 inch disks are preferred. Please keep a master copy in case of loss.

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..... / ..... / ..... / .....

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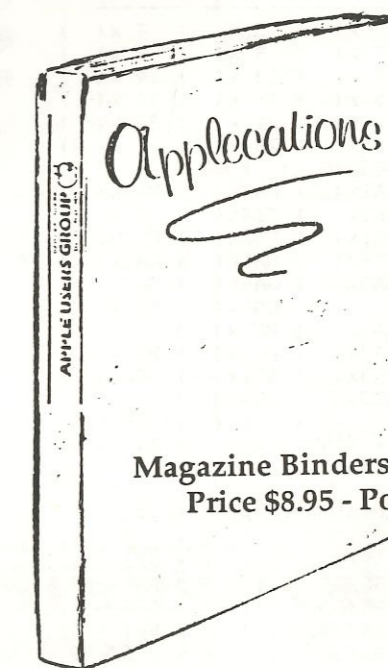
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- 15 x ( ) 16 x ( ) 17 x ( ) 18 x ( ) 19 x ( )
- 20 x ( ) 21 x ( ) 22 x ( ) 23 x ( ) 24 x ( )
- 25 x ( ) 26 x ( ) 27 x ( ) 28 x ( ) 29 x ( )
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- 39 x ( ) 40 x ( ) 41 x ( ) 42 x ( ) 43 x ( )
- 44 x ( ) 45 x ( ) 46 x ( ) 47 x ( ) 48 x ( )
- 49 x ( ) 50 x ( ) 51 x ( ) 52 x ( ) 53 x ( )
- 54 x ( ) 55 x ( ) 56 x ( ) 57 x ( ) 58 x ( )
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- 13 x ( ) 14 x ( ) 15 x ( ) 16 x ( ) 17 x ( )
- 18 x ( ) 19 x ( ) 20 x ( ) 21 x ( ) 22 x ( )
- 23 x ( ) 24 x ( ) 25 x ( ) 26 x ( ) 27 x ( )
- BA1x ( ) CO1x ( ) CO2a/b x ( ) CO3x ( )
- CO4x ( ) CU1x ( ) DA1x ( ) DA2x ( ) DA3x ( )
- DE1x ( ) DE2x ( ) DE3x ( ) DE4x ( ) DE5x ( )
- DE6x ( ) DE7x ( ) FO1x ( ) FO2x ( ) FO3x ( )
- FO4x ( ) FO5x ( ) FO6x ( ) GA1x ( ) GA2x ( )
- GA3x ( ) GA4x ( ) GA5x ( ) GA6x ( ) GA7x ( )
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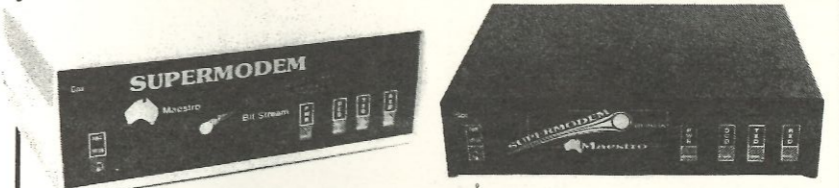
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Cross the threshold between software and hardware - discover the "missing link"!

Very emotive stuff, right? But I did want to get your attention and now that I have it, read on - it gets more interesting.

This is a computer kit based on the Novix 4000 processor. There are many extraordinary things about this chip. For instance: there is no internal micro-code which means there is no delay between your application program in high level Forth, with no speed penalty.

The Novix 4000 has many of the qualities of the Transputor or the RISC-type processors, but even more incredible is its ability to jump to subroutines and back in one cycle!

The board is supplied with an on-board EPROM programmer, programmable (0 to 8 MHz) processor clock and on fire-up, loads its running system from EPROM to fast RAM. It can be plugged into an IBM slot, or used with a serial link with any computer or stand-alone with its own video and keyboard controller.

**PRICE: \$699.00**

*This is not a games machine but an experiment with the future.*

# Applications



APRIL 1988

## HIGHLIGHTS



**Enriching AppleWorks  
Industrial Arts - C.A.I.**



**MacBBS - Screens  
MacPublisher III Review**



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# Enriching the AppleWorks Environment

TurboCharged AppleWorks

By Marc Apfelstadt,  
courtesy of Call-A.P.P.L.E.

AppleWorks established itself a long time ago as the application program for the Apple II. As Tom Weishaar is fond of saying in his "Open-Apple" newsletter, the program meets the needs of about 80% of the users - a very commendable ratio. There are things about the program that can stand enhancement, either to eliminate shortcomings, or to add useful features.

This article will look at a host of relatively new additions to the AppleWorks arena - the TimeOutSeries from Beagle Bros., Printrix from Data Transforms and Graphic Edge and ProFiler 3.0 from PinPoint Publishing. I will try to lay out an overview of the major features of each, so that you will have a chance to decide which might help you to use AppleWorks more efficiently. It is a real pleasure to note that "not one of these programs is copy-protected". Three cheers for common sense, cooperation, and trust in the end user!

## TimeoutSeries

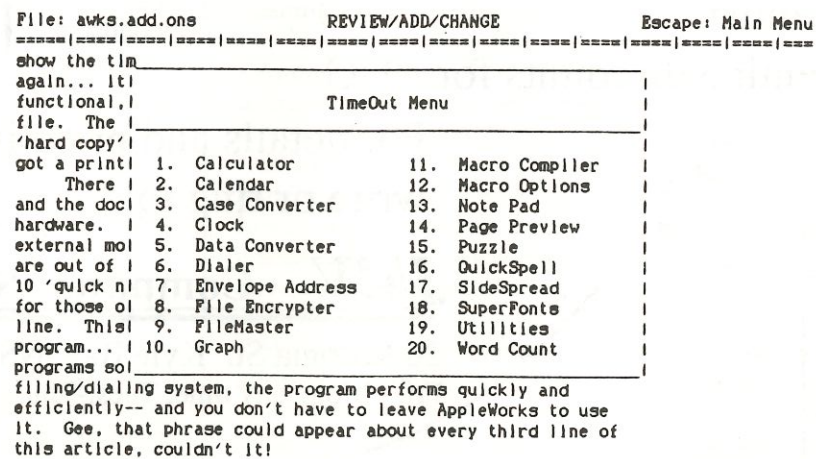
This group of accessory programs builds on the concept of available functions inside AppleWorks. Beagle authors Mark Simonsen and Alan Bird worked cooperatively with a number of others to market. Let's begin by explaining the overall file structure and installation process, and then look at each of the applications individually. In order to save space, please allow the frequent substitution of TimeOut for the full series title.

The TimeOut shell, when in place, hooks into AppleWorks and provides a menu system for all of the various utilities. The listing is accessed by pressing OA and Escape simultaneously. At that point, the available selections pop up on a window inside of AppleWorks, as shown in Figure 1.

I personally find this series very exciting. The problem for you as a user will be deciding "which" and "in which order" to add these to your library. In addition, here is

the sparkle for the //e user who has been feeling neglected during the wave of new IIgs software - a true increase in flexibility and power of the base program for your machine. I used to have the same lost feeling of being behind the times when the Mac first came out, yet my trusty //e is still a superb tool! Every disk comes with the TimeOut utility and installation program. After booting the back-up copy of the software (which you "always" make, right?), you select to "Update AppleWorks" and install the TimeOut system. You need to copy over the appropriate files (listed in your manual) to your TimeOut disk or directory, which you set when installing the system. In talking to Beagle Bros about the installing process, they're finding that users are confused by some of the file copying needed, so you may find a much more automated procedure in place by the time this appears in print. For now, the current versions require the use of Filer, Finder, Copy II+, ProSel, or some other transfer utility in order to set up the disks. Installation then, is a two-step process: place TimeOut on your copy of AppleWorks, then transfer the necessary files to your "application disk". If you are installing the "whole thing" (the entire series), plan on spending a big chunk of the evening - especially if you are using the Finder on a GS. You probably need a good-sized RAM disk, 3.5 inch drive, or floppy too, if you want to run these space-intensive programs. Most of the applications are very compact but the FONT/TYPEFACE programs by nature take up a lot of room on the disk. Beagle Bros. has modified the TimeOut software to allow for multiple TimeOut application disks, so that you can run the whole thing from a floppy if

FIGURE 1



you desire. Personally, I'd use the excuse to ask for a RAM card!

Installing TimeOut on AppleWorks gives you access to the TimeOut Utilities menu, allowing you to configure the various applications for default paths, printer type and slot, and other features. In addition, you can load applications to memory for faster operation, and specify automatic loading of individual programs at startup - most useful on systems with expanded memory. Looking across the entire series, I'd have to say that the attention to programming detail is incredible. In some instances, however, the documentation covers some major features in less than complete fashion. SuperFont picture importing for example doesn't mention the applicability of inverse commands to picture files. It is up to the user to experiment and find the full power and flexibility within each application.

Let's take a look at each of the individual program sets. It will certainly be a quick skim over the top, since the entire environment would take a series of articles and months of use and exploration to cover in-depth.

UltraMacro is an extension beyond SupermacroWorks. Users of the earlier program will feel quite at home and Beagle Bros even has an upgrade path for you upon request. SuperMacroWorks is TimeOut compatible, too if you don't wish to change. Like its predecessors, UltraMacroWorks adds the feature of Reset protection returning to the main Menu - no more heart attacks at the thought of a system lockup. There is an option on the UltraMacroWorks disk to patch AppleWorks for the Control-@ bug, too. UltraMacroWorks has expanded the macro keystroke buffer to over 4,000, and the disk comes with a number of sets of pre-defined macros for the various TimeOut applications. The programming language side of macros has been expanded by the addition of a host of new tokens. Time functions, defied string and numeric variables, and -if-then-else logic are all available, along with the powerful (and dangerous) ability to POKE machine language routines and CALL them. If you plan to write complex macro routines, UltraMacroWorks contains an option to single-step through them during the debugging process.

UltraMacroWorks gives you mouse control, and a new set of additional options too, like automatic screen blanking if the keyboard is not touched for a length of time. Touching a key reveals the current screen again. Personally, I wouldn't mind seeing a "mouse move" flagged to redisplay, but then I'm a mouse person by nature. As the third generation macro product from Beagle Bros. UltraMacroWorks is thoroughly worthy of the name it bears - it's ultra powerful.

TimeOut Desktools is a collection of useful utilities, including the usual Clock, Calendar, Calculator Note Pad, and Puzzle, along with some surprises. The clock pops up to show the time, but must be closed to work on your document again - it is not co-resident. The calendar is functional, and stores the data in an AppleWorks database file. The current Calculator has a minor bug - OpenApple-H for "hard copy" is neither locked out nor properly supported. I got a printout scattered across about 4 pages of paper! There is a Dialer included in Desktools as well, and the documentation isn't clear at all as to the required hardware. The program expects a Hayes compatible or Apple external modem connected to a serial card. The Dialer maintains a set of "quick" numbers and is capable of using a prefix number for those of us who must enter an extra digit for an outside line. This is a simple dialer, not a full communications program - a possibility in the next round of programs sometime in the future. As a simple phone filing/dialing system, the program performs quickly and efficiently, and you don't have to leave AppleWorks to use it. Gee, that phrase could appear about every third line of this article, couldn't it. There is an Envelope Addresser, and a File Encrypter which scrambles and un-scrambles files for sensitive materials. As one possible use, teachers can now scramble those grade spreadsheets, but don't let your students near them unattended, who knows what encryption key they would try! For those who manage to lose access to a file, Beagle Bros. will calculate the key for a \$1.00 charge. There is also a Page Preview mode to let you view formatting of wordprocessor documents. Gone are the days of eternal shuffling of forced new page commands, interspersed with printing to the screen. Actually, I had some problems with this option. It never worked properly with the "custom printer". On the ProWriter at home, the program crashed into the monitor, and at the office, the Brother definition was ignored. Selecting the ImageWriter revealed the expected results - three pages at a time, graphically represented on screen. I haven't had a chance to report the problem, but I have no doubt that it will be fixed as soon as they know about it. The Notepad is quick and efficient, and even supports an Apple-? "help" menu. You can specify the "save-to" file name, so multiple sets of notes are a breeze. While there isn't a "clipboard" copy back to AppleWorks, the files are standard "text" files and can be loaded into the wordprocessor. For me personally, the File Encryptor and Dialer would justify purchase of the Desktools program.

TimeOut Quickspell is similar to many other spelling programs in function, but not in operating characteristics. It scans the current document, comparing against main and custom dictionaries. If you have the memory space, the program can also

hold a set of words searched during the session, so that multiple searches of the same document don't require re-approval of words that have already been bypassed in earlier scans. When Quickspell is activated, the current document is activated. A list of unknown and double words appear, along with options to correct in context, replace, etc. In order to scan the dictionary for suggested alternatives, you need to select Replace, then enter OpenApple-? at the prompt. The earlier release of the program has been revised to allow expanded word lists. The current version of QuickSpell stores a pointer when its word buffer fills up. After checking the first set, it is possible to continue. As with the rest of the series, the mouse is supported. A jog to the right selects words from the list, while a click corresponds to pressing Return. QuickSpell's one quirk is that words are presented in alphabetical order. It can take some thought to remember where you mis-used that word! I find it most efficient to mouse through the list and eliminate the known acceptable choices. The Correct In Context option becomes much more rapid and efficient.

**TimeOut Filemaster** adds disk and file copy options within AppleWorks. So, you say, I can already format a disk and change directories from within a Basic program. What good is it? I, for one am eternally forgetting or mistyping subdirectory headings on my hard disk. File Master offers a "change current drive" option with a twist, "add or drop a subdirectory". You can literally step through the complicated paths, without having to type them from the keyboard. At most (but not all) FileMaster prompts, OpenApple-Return will let you redefine the current disk and/or subdirectory. One caution about that key combination: when files are selected for deletion, etc., OpenApple-Return is an "expert mode" command which eliminates the "do you want to do this?" sort of prompting. FileMaster maintains a set of default paths for file copy, and supports sorted lists of files for viewing. The program has one quirk, which makes it different from the other TimeOut applications - entertaining Escape at the top menu won't exit back to AppleWorks. Instead, you must select the menu option. As I understand, that was a conscious decision to prevent accidental exit on floppy drive systems. Basically, FileMaster eliminates a lot of redundant menu stepping that I used to do when managing files.

**TimeOut SideSpread** duplicates the functionality of several currently marketed products, "but", from "inside" AppleWorks, and with a host of font sizes and type styles supported. It is also very nice to see graphics-based programming which supports a

FIGURE 2

**In CONGRESS, July 4, 1776**

**The unanimous Declaration of the thirteen united States of America,**

When in the course of human events, it becomes necessary for one people to dissolve the political bonds which have connected them with another, and to assume among the powers

printed with SUPERFONT on a C. Itoh ProWriter

variety of printers instead of just the ImageWriter. SideSpread currently suffers from the same vertical limitation as AppleWorks - only a single vertical sheet definition will fit. Of course, that's "sideways" (horizontal) here, and you can play one sort of game - by loading a smaller type style, more lines can be squeezed onto the document. I wish that the program could hold pointers and print an entire spreadsheet in horizontal layers. AppleWorks won't do it either, but my old copy of THE Spreadsheet does and I miss the option. To its credit, SideSpread does its intended function without problem or fanfare.

**TimeOut SuperFonts** is truly a standout within the series of programs. Take Mac/GS ImageWriter font quality, and make the features available from inside AppleWorks. Now add Single Hi-Res and Double Hi-Res pictures, along with inverse, italics, and picture cropping. "Voila", GS quality printouts from a program you already own, and from your //e or //c! Let's go one step further. Remember that "other printers are supported too! Figure 2 was done on my 6 year old ProWriter, with an Apple //e and GrapplerPlus. I am totally amazed at the resolution! Of course, this isn't totally automatic. The first part of each word processing document contains font definition commands, along with picture file names. SuperFont uses imbedded commands placed between "<" and ">" symbols to control the printout. Many of the imbedded AppleWorks style commands are recognised, and several new features are added. Italics, shadow, outline, and inverse printing are all supported through SuperFont commands. The manual isn't very clear in explaining that the inverse command will also affect pictures that are included. In fact, the command is necessary when including a graph from TimeOut Graph. I also experienced some inconsistency when using the "picture cropping" command (you're supposed to be able to specify left, right, top, and bottom pixels as cutoff points). SuperFonts does offer a very good page preview

mode, so you can see the layout before starting a long printing process. If you're running the program on a colour monitor, fuzz and bleed will make the screen illegible. On a GS, exit to control Panel and set the Display to monochrome to eliminate the problem. SuperFont offers great resolution, font flexibility, and support for a variety of printing equipment. I think that it will be at the top of most "wish lists". Besides, you won't have to leave...(I know!)

**TimeOut Graph**, completes the first round of releases for the series. The program offers a real plus over stand-alone packages, because it is easy to get back into your spreadsheet for alterations of data. Standard graph types are available (pie, bar, stacked bar, area), and data is "mouse selectable". Headings are typed in rather than being picked up from the spreadsheet. Headings and legends are placed by the program, so the user has to accept the defaults in that regard. I had one data set overwrite headings in a pie chart, when a small slice occurred at the bottom of the graph. The only other minor bug I encountered was in the data entry - "scaling for X and Y came up with a default zero, which was pushed along as characters were entered. What I intended as a maximum of 70,000 in my test data became 700,000. Gracious, the scales looked insignificant. Print quality is very good. Three sizes are available: "1" produces a reduced image of approximately 3.5 x 3 inches. Selecting "2" gives 6.5 x 5.5 inches, and "3" automatically prints the graph sideways. Resolution is quite acceptable at the smallest size, typical Double HiRes (distinguishable dots) at the "2" setting. I wish that there were an option for "double pass" printing, which might darken the image a bit. On the whole, the quality is very good

FIGURE 3

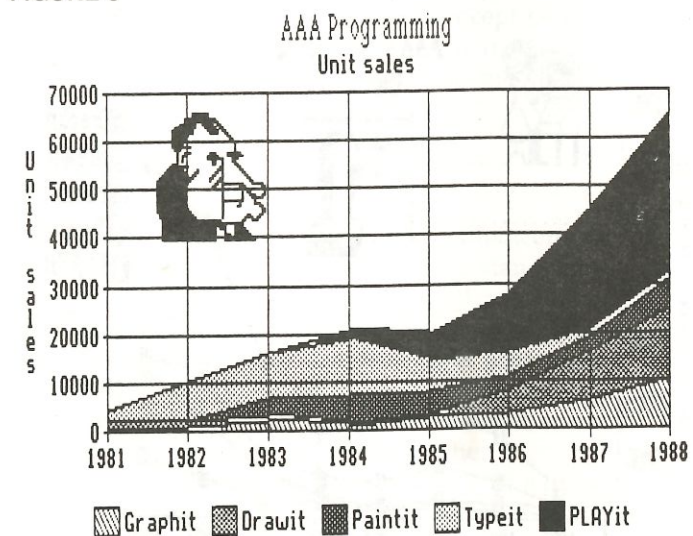


FIGURE 4



**The unanimous Declaration of the thirteen united States of America,**

When in the course of human events, it becomes necessary for one people to dissolve the political bonds which have connected them with another, and to assume among the powers

printed with PRINTRIX on a C. Itoh ProWriter

for most purposes, and is very simple to adjust data and settings. Figure 3 shows a representative printout from TimeOut Graph. Background pictures can be imported (as Nixon was in this case), but you need to plan when the image shows for best effect. As you can see, I'm very pleased with the quality and functionality of the entire TimeOut series. As with most new products, you can expect a certain "settling out period", while features users request are weighed and sometimes added. The entire series of programs belongs inside of every serious AppleWorks users' repertoire!

**Printrix**

Printrix, from data Transforms, is another new printing enhancement available for font-type printing of your AppleWorks files. It also supports files from AppleWriter, WordPerfect, Word Juggler, and plain old ProDOS ASCII files from just about anywhere. The basic concept is the same as SuperFont, except that Printrix is a "postProcessor". You save your document, complete with embedded commands to control print formatting, then run Printrix to produce your printout. In the case of Printrix, "carat" symbols (^) precede format commands. The program's newest release contains the much requested Page Preview function. Having set all of the parameters (and there are a legion), you can select print to screen and see a Hi-Res depiction of your page layout. The program supports a host of different printers and interfaces, and the software seems to milk

maximum from all that I have tried. Figure 4 shows a large font dump with a clip-art graphic included.

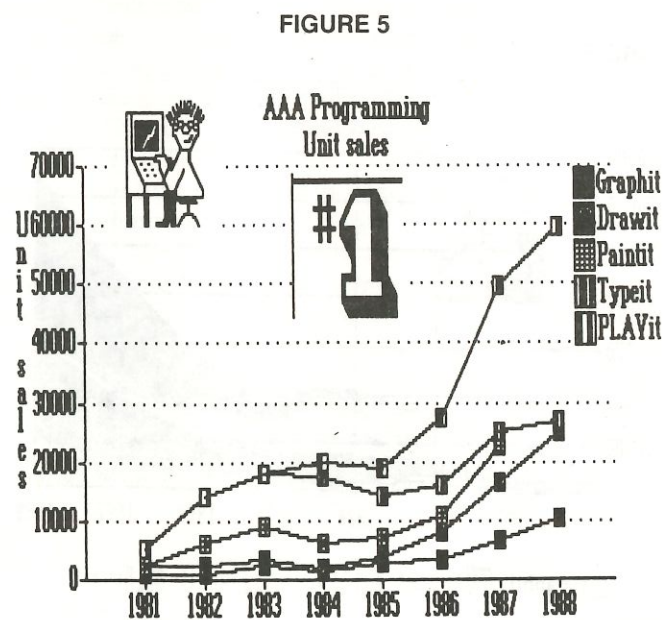
Data Transforms provided the Apple world with the first "larger than one screen" graphics software years ago, with the release of Fontrix. In keeping with the spirit of compatibility, Printrix is able to import and use the entire set of Fonts disks (15 at last count) available for Fontrix. The ImageWriter driver supports quad density printing, and the print resolution is among the best available. If you remember Fontrix, stepping through all those menus becomes a chore at times. Printrix is much more streamlined to operate, with only 3-4 major menus. The program does run more efficiently from a 3.5 inch drive, hard drive or RAM disk drive, since font manipulation is memory intensive. It is possible to run the system floppies, although there is some shuffling of disks involved as you move between the actual program and the configuration section. The program has quite an "IBM" system feel for the menus, with blocks of text, prompts, etc. laid out in the upper portion of the screen. Selections are made by keyboard entry (no mouse), and the system is very efficient to use. Where SuperFonts controlled all aspects from within the text file, Printrix uses blocks of "default" layouts or characteristics. In many ways, that is an effective method of control if you do numerous documents on the same format. Pathname prompting could use a bit of cleaning up - the program does not recognize the Apple Standard of Control-Y = Delete Rest of Entry, so you must "arrow through" extra characters and then delete them with the Delete key. In addition, the program doesn't filter out spaces from the input. A real "no-no" for ProDOS. Printrix is capable of importing clipart and pictures from Single Hi-Res applications only there is no Double Hi-Res support. There are so many programs and clip-art items available that this doesn't need to be a fatal flaw. If you are also a Fontrix user, the GRAFFILE format is accessible after you copy the files over to ProDOS. Two-column printing is supported, providing a basic level of function for newsletters and the like. In operation, you must specify up to four fonts for use in printing the document, the location and any graphics. If an item can't be located the program prompts you to enter a new pathname to search. I'll be frank. I had sort of "retired" my Fontrix program after MultiScribe made font-based wordprocessing so easy.

Printrix addresses many of the features on my wish list for Fontrix, and it gives a great deal of power over the printed output. To be sure, the program may not suit everyone. If you don't mind working with

Single Hi-Res graphics and controlling the printed output at a very basic level, the font variety available and page control at your disposal are truly worth the effort. No other program does large fonts as well at this point. Besides, if you use another ProDOS based word processor, here's a program to give you "Mac Fonts" on your printer, from your software!

### Graphic Edge

Graphic Edge, from PinPoint Publishing, matches basic functionality with TimeOut Graph, but the programs are built around two very different implementations. Graphic Edge is a "post processing" graph tool for AppleWorks spreadsheet files. The primary "twist" to the program is the use of "object graphics" rather than a drawing environment. This means that the user can adjust and relocate the images until the effect is exactly right. In addition, a utility program under development lets the G.E. files be imported "directly to the Mac" for further manipulation by graphics programs! The quality of printed output from Graphic Edge far surpasses anything available. The user can even specify multiple print passes to enhance contrast, and the new ImageWriter LQ is automatically recognized and supported in a 400 dot per inch mode. The program works in Double Hi-Res mode, but a menu option allows direct importation and conversion of Single Hi-Res pictures. Clipart is supported, and background pictures can also be used. Figure 5 uses clip-art from Beagle Bros Mini-Pix disk #1, along with the same mythical data set used for TimeOut Graph. Graphic Edge allows the user to define up to ten sets of graph parameters, which are linked to the spreadsheet file. One caution. "Don't use your



spreadsheet file name by mistake!" I lost a whole set of spreadsheet data when information was overwritten by the configuring file. It would be ideal if the program prompted with a default and a suffix tagged on the end or something. There are a few things in Graphic Edge that make it feel like version 1.0, but PinPoint is being up front about it. Purchasers of the current version up to December '87, are encouraged to provide comments and feedback about improvements, and they will be upgraded for free to the next level of release. I like that approach. Here are a few suggestions I'd make. First of all, the program is keyboard driven, and I miss my mouse. I understand "backwards compatibility" with the //e and //c world, but it is very awkward to step through graphic items one at a time (the illustration included here has about 50 individual objects) to adjust location or parameters. After one is moved, you need to start all over again at the top of the object list. Perhaps Apple-number keys to skip through, or Apple-Arrow skip by data set? The documentation warns not to use "area" graphs with data beyond the scale maximums. "Believe it! [kablooy!] Couldn't that be checked and flagged? You also need to consider setting a section of your spreadsheet aside for "configuration data" - things like scale increments, minimums, maximums, etc. The program also expects contiguous blocks of data, so blank columns between information cause problems. Graphic Edge can be a bit awkward to manipulate around in at first. You start off in a filecard interface, then flip into a graphics environment with menu listings at the bottom of the screen when a graph is plotted. The "learning curve" for this program is definitely longer and steeper, but for a good reason - the program is more powerful and flexible.

Quite frankly, it's hard to recommend Graphic Edge or TimeOut Graph as the "one" product you should have. I'd personally suggest TimeOut Graph if you wish to work from inside AppleWorks, and it is easier to instantly manipulate changes of data and images. Graphic Edge has the best print quality and the most flexibility, due to the object concept behind the program's design. If production quality graphs are your goal, look to Graphic Edge to meet your needs.

### ProFiler 3.0

ProFiler 3.0 is another AppleWorks enhancement from the PinPoint fold. The program is a standalone disk-based data base system. So why look at it here? Well, there are a "few" things that AppleWorks has trouble dealing with in a data base, and there aren't really ways around them. First of all, AppleWorks supports only one screen of fields, and a maximum number of 30. In addition, when there are two columns of headings you need to "fake" the entry of long data strings by typing to the end of the field,

backspacing, then inserting the additional characters to the middle of the entry. There is also the problem of lost configurations when new fields are added, and "mousers" need to get along with add-on patches. ProFiler 3.0 allows an entry area of up to eight pages long, multiple line entries with selectable "word wrap", and built-in (but not required) mouse support. because the program is disk-based, it "does" seem slower than AppleWorks. If you've run into the limitations of the AppleWorks data base, ProFiler may just fill the bill. Calculations, formulas, and group subtotals are all supported, and up to four fields can be designated for indexing or sorting. The screen can be redesigned at any time. Simply close the current file, select "redesign" and move the entries around. The program also offers a limited set of user-defined macros. I had a couple of problems with the program at first, primarily because the file setup process is more complex than AppleWorks. It stands to reason, however, since you gain more power over your data. After the blank form is set up, you can even import AppleWorks files directly - no need to re-key or print to text files as a transitional step. Curiously, the print definition allows for turning Correspondence Quality "on" as a print feature, but there is no option to turn it "off". I had to power the printer down to return to "draft" mode. I also found the "form design" process to be a bit awkward. You need to move the fields into place, then put the cursor on each and press Open-Apple-Equals sign to define the print formatting. When I accidentally entered other keystrokes, the field display took extra characters and the print process went awry. On the whole, ProFiler is a product to consider if your needs for a data base have outreached AppleWorks' ability to meet them. For large data files, complex forms design, and longer field structures, ProFiler 3.0 is a real plus! Well that certainly covers the ground for the current crop of AppleWorks enhancements. I hope that you are better informed of the products and their strengths as a result. All of these programs can fill real needs for users, and each deserves consideration as you move from "plain vanilla" to "Turbocharged AppleWorks".

ED: This article comes from the A.P.P.L.E club magazine Call-A.P.P.L.E.. Although written last year - because of the time lag in programs appearing in Australia I thought it would still be very informative.

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# Industrial Arts Computer Aided Instruction

Since the introduction of Computer Technology into secondary schools over the last few years, there has been a definite need for subject specific software for Industrial Arts, as there is very little known software available for this subject area.

As a result of a successful submission to the 1984 Apple education Foundation, a grant of Apple //e Computer hardware was provided to Lachlan Turner, a teacher of Industrial Arts at Carlingford High School. As the Principal Investigator, and author in this project, he has completed two tutorial Packages of Computer Software that will operate on the Apple // family of computers. The Software is being distributed by The Northern Districts Education Centre, 179 Beecroft Rd., Cheltenham, N.S.W., 2119 (Phone :(02) 868-1533.

Entitled Industrial Arts Computer Aided Instruction (or IACAI), these two tutorial computer packages introduce many elementary processes commonly dealt with in the introductory stages of general Woodwork and Technical Drawing.

Both theoretical knowledge and practical applications are dealt with throughout each package. They are targetted for years 7, 8 & 9 classes in the secondary school, which is the 12 to 15 years age groups.

Whilst the subject material is based on N.S.W. curriculum, the manner in which it is presented would make it equally adaptable to the introductory or basic courses conducted in all states.

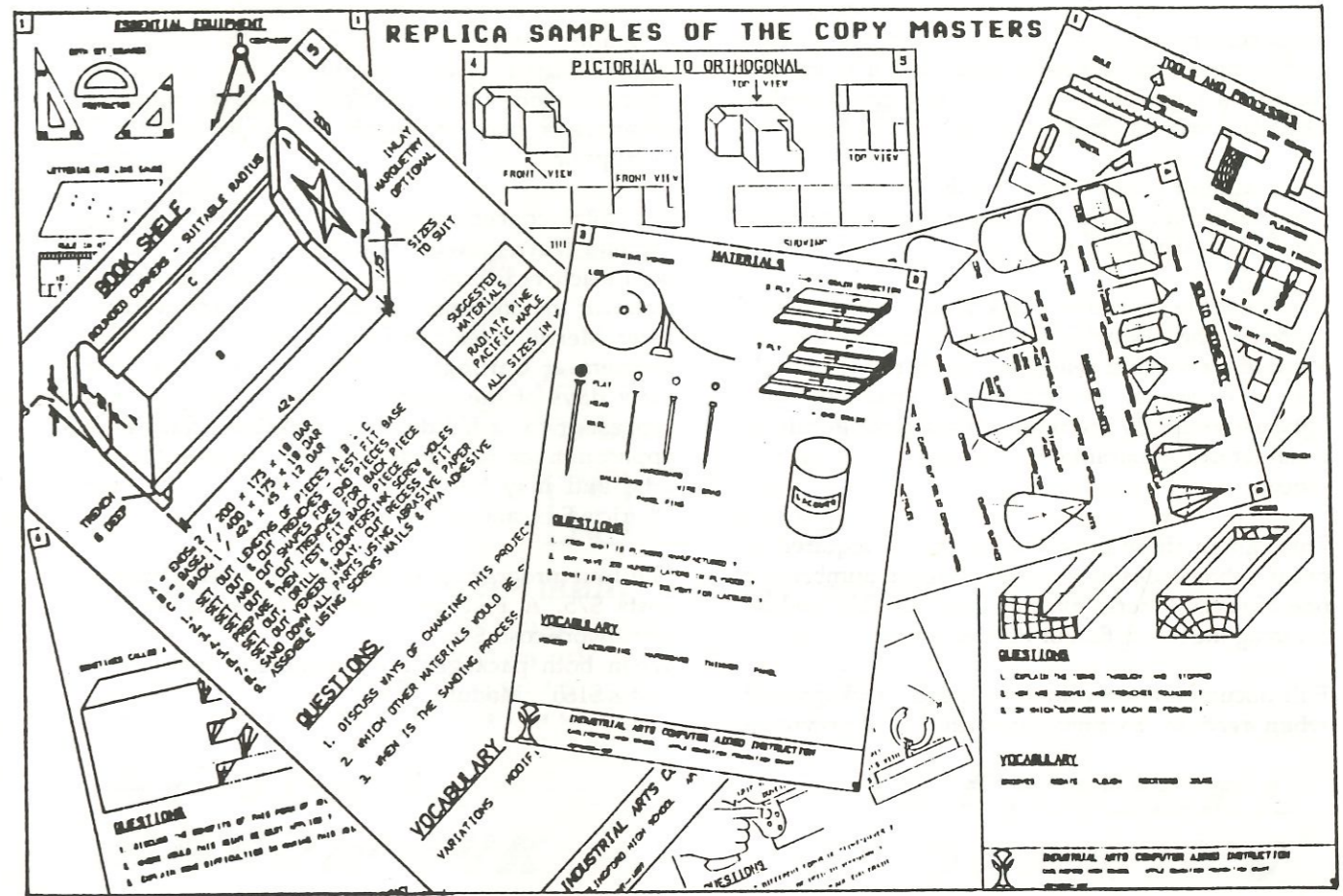
There are FOUR programs in the series TECHNICAL Drawing. The series on General Woodwork contains Five programs. Each program is contained on two double-sided disks. Eight disks for the Technical Drawing package, and Ten disks for the General Woodwork package. Disk 1 of each program is required as the "Start-up" disk, and each session must start disk 1; Disk 2 and 3 of each program are data disk only. Disk 4 is the Pupil Review Module, can be operated on its own or in conjunction with the Tutorials.

The programs have numerous applications, depending on the individual teacher's requirements and approach to the subject material offered.

- Individual tuition (introductory, revision or catch-up for absentee pupils).
- Small group discussion and reinforcement of principles.
- Class group where large screen viewing is available.
- Review "testing" of the tutorial material.
- Allowing quick and convenient repetition of the subject material.

There is a total package contents, as well as an individual program contents supplied within the printed portion of the package. This enables the teacher to select relevant sections within the package that can be used concurrently with his/her teaching program.

As well as introducing new material, each subsequent programs of the Teaching Tutorial section ideally assumes and uses information learned from previous programs.



It is stressed by the authors, that these programs are not designed to replace, or supercede the classroom teacher, but are rather offered;

- To supplement his/her teaching technique.
- As a means of revising pupil skills and knowledge.
- To stimulate calculated discussion.

Both packages supply a Copy master for each of the six Tutorial Modules contained in each program. The computer breaks a module up into a number of separate pictures or sections (ranging from 3 to 7), depending on which module is being viewed. Included on the Copy Master are the 3 discussion or research Questions along with the 5 Vocabulary words (Questions and Vocabulary also appear as options within the Tutorials). The Copy masters are offered as pupil support material and may be used to produce overhead projector transparencies, or copied for any other educational purpose that the teacher wishes.

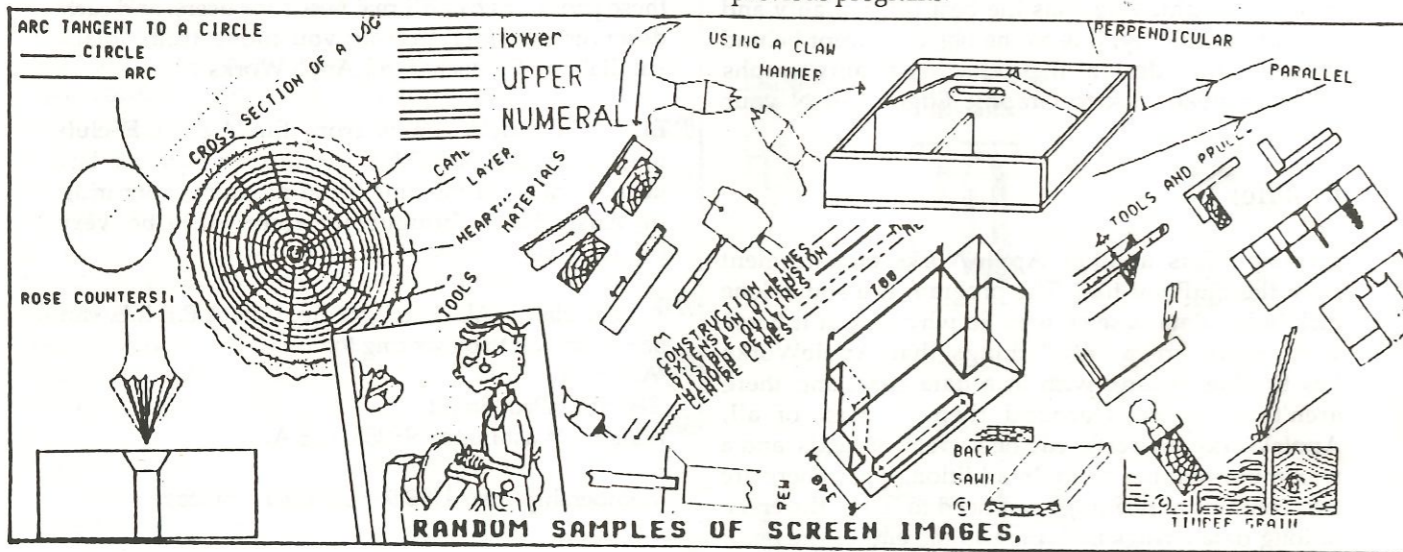
The IACAI Master disks supplied with these packages are copyright, and may NOT be copied, except for the purpose of the back-up made by the purchasers for their own use at their own school.

The Pupil Review Module (operating separately on disk 4 of each program), offers the opportunity to

evaluate pupil understanding and progress. There are Twelve Review screens in each program using diagrams previously encountered in that Tutorial Module. The pupil is allowed two opportunities to respond to each of the Review screens. The computer is programmed to highlight incorrect responses so that correct responses can be determined on the second attempt. When the pupil has finished each Review screen, the correct answers are displayed for verification.

The inbuilt scoring function is a special feature of the Review Module. At the end of each Review screen, the percentage score is also displayed with the correct answers. A copy of the correct responses is supplied with the documentation that comes with the package.

The Pupil Review Module does not comprehensively cover all aspects of any one program, but is representative of the subject material in that program. Choices given on-screen, from which the pupil may select, often reflect typical answers offered by the pupils when completing the more conventional style of written tests. In most cases the pupil needs to enter responses in a given order, in some cases the order is not important. The computer is programmed to sort this out.



At the completion of the Pupil Review Module an Achievement Certificate appears on the screen, displaying the pupil's name and his/her score. If a printer is connected, and identical copy of this certificate may be printed for the pupil to keep.

The teacher may also wish to table this information for his own records which can then assist in pupil assessment.

It is possible to move quickly and conveniently between the Tutorial Module and the Review Module by making selections when the applicable menu is on-screen. Also the ability to move between options whilst in the middle of a tutorial allows considerable flexibility to the teacher using this concept.

Throughout these programs all that is required in order to proceed is to select one of seven numbers, or one of seven letters. Some of these are followed by pressing the Space Bar, or Return key.

Full documentation comes with each package, and when read in conjunction with the abbreviated

on-screen directions, it is easy to work through the programs from start to finish. Even in the event of an incorrect disk being placed in the drive, an appropriated instructional message appears on-screen so that the program can proceed without interruption.

The total concept was devised and written by Lachlan Turner, with assistance by Rolf Ballin, both teachers in Industrial Arts. The programming code for the computer operation was achieved by Peter Merry, a teacher in Mathematics. All were teachers at Carlingford High School during the early days of the project. The IACAI packages represent a considerable flexible classroom application for the Apple // computer in industrial arts, and may be purchased from the Northern Districts Education Centre

The four program package on Technical Drawing costs \$75. A Five program package on General Woodwork costs \$95  
When both packages are purchased together the cost is \$160 Module.



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MENU STYLE OPERATION AND ON SCREEN DIRECTIONS  
SUBJECT MATERIAL SUPPORTS MOST COMPREHENSIVE TEXT BOOKS

\*\*\*\*\*  
THESE IACAI PACKAGES MAY BE PURCHASED FROM --  
THE NORTHERN DISTRICTS EDUCATION CENTRE.  
179 BEECROFT ROAD. CHELTENHAM. N.S.W. 2119.  
Phone 02 868 1533

GENERAL WOODWORK = \$95-00 - TECHNICAL DRAWING = \$75-00  
BOTH PACKAGES WHEN PURCHASED AT THE SAME TIME = \$160-00

\*\*\*\*\*  
The facilities to produce this software were provided by a Grant of equipment awarded from the Apple Education Foundation and the P & C of Carlingford High School, in NSW

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**EDD 4** version which doesn't include any hardware is available, and can be used on Apple IIc and III (using emulations mode) and is priced at \$125.00.

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WARNING: EDD is sold for making archival copies only.

# USA Update



by Graham Clarke

This is the first of, what I hope will be, a regular feature in 'Applications'. As the name implies I will keep you informed on what is new in the hardware and software world of the U.S.A.

Starting off... I will tell you how to purchase goods from the U.S.A. and, in the near future, tell you of the dealers and/or manufacturers successfully dealing with our members. Here is something to think about! If our Australian retailers did their jobs properly there would be no need for this column. So... RETAILERS TAKE NOTE

Most U.S. retail outlets you see in magazines deal in 'MAIL ORDER' ie. They will post, to you, goods which you have ordered and paid for. This procedure of pay before you receive is not very comforting when you have to send money overseas. Here's where this column can help. As I encourage you to participate in this money game (of throwing your money to the wind and hoping something comes back) you will ring or write to me of the pleasure (or pain) of your successful U.S. purchase. Thus heralding the name of dealers who are good and damning those who are not. You see... we all benefit.

Please write to : Graham Clarke  
P.O. Box 224,  
Willoughby, 2068  
or telephone : (02) 958-2709

There are three, recognised, ways of sending money O/S (overseas):

The first is by 'TELEGRAPHIC TRANSFER'. That is, you do the conversion to U.S. dollars at your bank and pay the prescribed amount to match the U.S. dollar value plus a fee. The bank then Telex'es the bank you specify of that amount. This method assumes you have a bank to send too. Who does?

The second is by 'BANK CHEQUE'. For the U.S. this cheque must be made out in U.S. dollars. Once again you do the conversion at the time you buy the cheque at your bank. You get the current rate of exchange, for that day, between the Australian and U.S. dollar.

The third is by 'CREDIT CARD' and for most of the US you may use 'MASTERCARD' or 'VISA'. Rarely may you use 'AMERICAN EXPRESS' or 'DINERS CLUB'. Shopping by credit card is probably the easiest way of doing business. You need only write a letter. Include your credit card 'ACCOUNT NAME', 'ACCOUNT NUMBER', 'EXPIRY DATE' and SIGNATURE.

You will have to include postage in your purchase price so read the advertisement carefully as most mail prices are included. If you wish your purchase to arrive by 'AIR MAIL' you need only inform the retailer and he will add the additional price to the bill. This method of payment differs from the previous two in that the conversion to the U.S. dollar occurs in the U.S. and if the Australian dollar is getting stronger you will get a better rate.

This mode of purchase may be implemented by telephone but be careful there is a difference in time not only between Australia and the U.S. but across the U.S. itself. The telephone can be very useful when you are not positive of price or availability, postal charges or exchange rates. But don't linger long it costs a fortune on I.S.D.

Now that you have decided to make that overseas purchase, what should you buy? Here are a few interesting items.

\* \* \* \* \*

#### Print-Quick version 4.0

Supports the IIgs, ImageWriter II colour printing and improved operating speed. Print-Quick combines font design and downloading, printer-format setup, typewriter emulation, Hi-res picture-file printing, and text-file display and printing. It's good value at US\$50.00

Third Wave Technology  
I.S.D. (0101) 216 671-8991

USA Update continued

#### Multi-Scribe version 3.0

Features on-line spell checking and error correction. The Spell Checker uses a 50,000 word dictionary, lets you search for words, correct spelling, and save new words. Multi-Scribe has a variety of special fonts, character sizes, and styles, as well as editing of individual characters. It runs on the IIe and IIc with 128K RAM and sells for US\$79.95

StyleWare  
Suite 2E,  
5250 Gulfton Street,  
HOUSTON, TX77081,  
U.S.A.  
(0101) 713 668-1360

\* \* \* \* \*

#### PC Transporter (expansion board)

With PC Transporter, MS-DOS programs run on your Apple II like they do on an IBM PC. The card runs three times faster than an IBM PC/XT and, to speed you through number crunching tasks, you can use the optional 8087-2 math co-processor chip. With PC Transporter, MS-DOS programs see your Apple hardware as IBM hardware. This card adds up to 768K of extra RAM. For the Apple II+ you require the optional IBM-style keyboard. PC Transporter reads MS-DOS and translates it into Apple ProDOS. You can store IBM programs and data on any ProDOS storage device including the Apple 3.5 Drive, Apple UniDisk 3.5, Apple 5.25 drive, SCSI or ProDOS compatible hard disks.

#### PC Transporter memory choices

|             |      |          |
|-------------|------|----------|
| Prices \$US | 384K | \$489.00 |
|             | 512K | \$529.00 |
|             | 640K | \$569.00 |
|             | 768K | \$609.00 |

|                        |          |
|------------------------|----------|
| IIgs Installation Kit  | \$ 49.00 |
| IIe/II Plus Instal Kit | \$ 39.00 |
| 5.25 IBM Format Drives |          |

|                         |          |
|-------------------------|----------|
| Single-Drive            | \$269.00 |
| Dual-Drive              | \$399.00 |
| Half-Height             | \$135.00 |
| IBM-Style Keyboard      | \$139.00 |
| IBM Keyboard Cable      | \$ 34.00 |
| 8087-2 Co-processor     | \$229.00 |
| Heavy Duty Power Supply | \$ 69.00 |

Applied Engineering  
P.O. Box 798,  
CARROLLTON, TX75006  
U.S.A.  
(0101) 214 241-6060

ProSel (Disk utility for the Apple II range)  
A startlingly comprehensive collection of more than a dozen disk utilities from disk-file manager to sector editor, file finder, and Mr. Fixit directory repairman. A bargain available only by mail. Price US\$40. Requires: Apple II Plus, IIe, IIc, or IIgs; 64K RAM.

Glen Bredon  
521 State Road,  
PRINCETON, NJ 08540  
U.S.A.

\* \* \* \* \*

#### MouseFile (Disk file manager)

Macintosh-like mouse-driven menus and windows created on an 80-column text screen make MouseFile the favourite of double-clickers everywhere. Efficient to use and skillfully executed. Price US\$69.95 Requires: Apple IIe (enhanced), IIc, or IIgs; 128K RAM.

Harbor Software Inc.  
Suite 8  
403 Great Road,  
ACTON, MA 01720  
U.S.A.

Tel: (0101) 617 263-1870

\* \* \* \* \*

#### Copy II Plus

Yes, Copy II plus does duplicate copy-protected software, but it also includes a library of disk utilities. Works with both DOS 3.3 and ProDOS disks, allows file copying between the two, and takes care of necessary conversions. Also copies smaller disk to image file on larger disk. Price US\$39.95 Requires: Apple II Plus, IIe, IIc, or IIgs; 64K RAM.

Central Point Software  
Suite 100,  
9700 SW Capital Highway,  
PORTLAND, OR 97219  
U.S.A.

Tel: (0101) 503 244-5782

\* \* \* \* \*

#### Diversi-CACHE

Disk-caching program for the IIgs speeds 3.5-inch disk operations by copying disk data blocks to RAM. Cache size is configurable and survives a hard reset. Price US\$35 Requires: Apple IIgs; 512K RAM.

Diversified Software Research Inc.  
34880 Bunker Hill,  
FARMINGTON, MI 48018  
U.S.A.

Tel: (0101) 313 553-9460

## RAMWORKS III by Applied Engineering.

Hardware review by Robert Brown.

Since about three years ago, RAM (Random Access Memory) has dropped dramatically in its price and because of the wide open architecture of the Apple II computers there has been an advent of Ram Cards. One of these in particular has been the RamWorks III from Applied Engineering, who now is one of the most respected third party hardware and software developers for the Apple range of computers including the Apple GS.

The Ramworks III plugs directly into the Auxiliary slot in any Apple IIe whether it be the American model or the European model. The card replaces the normal 80 column card or the extended 80 column card and supplies both an 80 column display as well as new routines to give flicker free scrolling and other various commands to clear the screen and positioning of the cursor. The 80 column display and its commands are compatible with the languages of Applesoft basic, CPM and Pascal.

Ramworks III can come with any memory configuration starting at 64 Kilobytes to 16 Megabytes. The card has provisions for expansion cards such as an RGB card with both APPLE analog and IBM digital RGB monitor outputs, or if you want the full 16 Megabytes, you install Memory Expansion cards. Other expansion cards include 16 bit option and hopefully in the near future, battery backed RAM.

I would like, at this point, to point out about the Ramworks and Ram Cards in general. Some reviews lately of Ram Cards (I won't mention which ones) are pointing out that.. "any Ram Card you install into your Apple computer is a waste of time because the memory is MORE volatile than your main memory and resulting in more frequent crashes and loss of memory.....". This is really a load of rubbish. The memory on these Ram Cards is as volatile as your main memory and usually in a glitch you lose your position in the program such as bombing out into the monitor or just hanging up when in 90% of cases you can press Control Reset and get the prompt back with all data in the extended memory intact.

The card comes complete with two disks, three sides full of programs. The first side gives you all of the

small programs such as PRODRIVE which lets you install your Ram Card as a Ram Drive. The version of Ramworks III I reviewed was 1 Megabyte and I therefore got 960 Kilobytes to use. Why 960K and not 1 Meg? The Ram Card and software allows for 64K for the Apple to function as a standard 128K machine as well as having 960K on top of that, therefore 1 Megabyte. Other software on the first side includes a PARTITION program. If you don't want the 960K Ram Disk, the partition program allows you to have any size Ram Disk between 0K and 960K. The other sides of the disk are all the install software required for AppleWorks version 1.1 to 2.0 including the German version 1.4.

*New AppleWorks 2.0 features (1 Megabyte version).*

Applied Engineering are the only ones that extend all versions of AppleWorks with new and extended facilities. First of all, AppleWorks desktop is increased from the lousy 56K to 750K and AppleWorks uses the 274K left for preloading itself into it and for its house keeping. Therefore once AppleWorks has loaded, about 20 seconds, it never goes back to the disk. The maximum number of records available are increased from 1,350 to over 22,000. For the Word Processor freaks, that run out of lines when they reach 2,250 don't have to worry now because they get over 22,000 lines as well, and for those that get frustrated with 250 Clipboard lines, you now get 2,042 lines to play with. Also included is a built in printer buffer ONLY if you have a printer card that complies with Pascal 1.1 standards such as a Grappler +, Super Serial Card or an Epsom Parallel Card. Auto segmentation is another feature. If you have a file longer than what will fit onto a data disk for example a word processor file that is 150K long, then the auto segmentation becomes active. What it does is to save as much as it can onto one disk as Segment 1, then providing you have a disk formatted with the same name as the first disk, it will save as Segment 2 and so on until you have saved your file. If you have a ProDOS compatible clock in your system that AppleWorks won't look at, the Applied Engineering software allows you to configure AppleWorks to recognize it. It is placed down the bottom right of the screen in the form of MM/DD/YY HH:MM AM or PM. Other commands are incorporated in the Database such as if you have a Category such as DATE or TIME but not both, typing '@' will automatically place the date or time into that Category, without you typing it.

Also, apart from having AppleWorks installed into the Ram Disk, you can stick in Pinpoint or other software you use in conjunction with AppleWorks into the Ram Disk as well but of course your desktop size reduces. In my case with AppleWorks 2.0 and Pinpoint with 12 desktop accessories installed and a Ram Disk I get 350K for the AppleWorks desktop which is still far more than I need.

### Conclusion

The Applied Engineering Ramworks III is by far the best Ram Card for the Apple IIe computer. It is the easiest to use and to install AppleWorks with the user-friendly software is a breeze. I thoroughly recommend that you have a look at this card before you buy your extra memory.

Review copy courtesy of Brian Robinson,

POWER TECHNIK, P.O. Box 143, Killara, NSW.  
PH: 498 - 4711 (Business hours).

## SILENT SERVICE GS

A Review by John Paske.

Recently I had the opportunity to look at a very good product from Microprose entitled Silent Service GS. It is a good product for two reasons, user-friendliness and price.

In this simulation you captain your own World War II Submarine through the dangerous waters of the Pacific Ocean. The program is structured so that ever a humble reviewer can ease his way into a full-blooded simulation. Ranging from simple target practice, to a campaign lasting several months, SS incorporates such features as, degrees of difficulty from Midshipman to Captain and Reality levels such as limited visibility, dud torpedoes, expert destroyers and port repairs. Once you are confident at shooting "ducks on a pond" you can graduate from torpedo practice to some thing more difficult such as one of the Convoy Actions or perhaps a War Patrol.

The simulation is run from a series five screens depicting, the bridge, the instruments, the map room, damage reports and quartermaster's log. It is on the bridge that most of the action occurs, firing torpedoes and issuing orders while keeping an ever-watchful eye on the enemy through the periscope. This simulation is historically correct to the extent that prior to August 1943 maximum safe

diving depth was 300 ft. after August 1943, 425 ft. was safe. Also in late 1944 the electric torpedo was introduced, although slower this didn't have the tell-tale wake of the steam torpedo.

Silent Service was released some years ago for Apple II+, IIe and IIc and the transportation of a successful program to the GS mode has been more than worthwhile. The GS version with its improved graphics and sound make this simulation easy to play with the aid of the mouse and at a price of less than \$50 it has to be very good value.

Review program by courtesy of IMAGINEERING.

## Letter to the Editor

Dear Sir,

I am presently in my first year as a member of the Apple Users (Group Sydney) and, as well as enjoying the benefits and expertise which the club has to offer, I try to attend as many meetings and special interest groups as possible despite the irregular hours which my primary job demands.

However, *the reason for my letter is to voice my concern and annoyance at the number of club members, particularly those in the younger age group, who persist in displaying their ignorance by continuously talking amongst themselves, whilst persons are out the front addressing the meeting.* This is not an isolated occurrence and appears to happen at most Apple II meetings.

Last night was a typical example when, during the TimeOut demonstration, a minority in the back rows showed little respect to the speaker or other club members who were trying to hear what was being said. I'm sure that if this recurring problem distracts and annoys me then surely it must do the same to others.

I request that you publish my complaint in Appications, so that those involved will hopefully get the message and therefore give everybody else a fair go.

I thank you for your time.  
Yours sincerely,

Lance Haslewood - Panania

## ProDOS 16 Hints

By Mark Bouthillier

If you have looked at the public domain libraries lately you will have noticed that there are a growing number of Apple //GS programs appearing. Unfortunately you can't just RUN or BRUN most //GS programs.

Those with a \$B3 filetype can only be run under ProDOS 16. If you wish to use \$B3 programs, here's a list of the steps you should follow..

1. Make a copy of your Apple //GS System master. Most programs will specify the version of ProDOS 16 that is required.
2. Delete all files in the main subdirectory with a \$B3 file type. DO NOT delete any fonts, desk accessories, and tools. If you delete a necessary subdirectory, the ProDOS 16 programs you transfer to this disk may not work.
3. Copy your ProDOS 16 (\$B3) files into the main subdirectory. Now whenever you boot the disk, you will be shown the Apple //GS program Launcher with your newly added programs listed.

To run one, simply double-click its filename. If you only have one program on a disk, the Program

Launcher becomes a nuisance rather than a convenience. In such a case, you may wish to make that program self-loading. To do this, simply...

1. Rename the file you wish to self-load with a ".SYS16" ending.

For example, if you were using a program entitled "FREPAINT", you would rename it "FREPAINT.SYS16".

2. Delete the file named "START" in the SYSTEM subdirectory. Now whenever you boot that ProDOS 16 disk, your program will automatically load.

If you wish to make Paintworks Plus or another copy-protected program self loading, you should not tamper with the original disk. Instead, make a working copy with Copy II+ and alter that disk.

Now, you may be thinking to yourself, "If Paintworks Plus is copy-protected, how can I make a copy?". Most copy-protected programs have only one protected block. If you try to make a back-up copy, you will be able to copy all but one block. When you boot this back-up disk, the program will load but will prompt you to insert your original disk for verification. Because the computer only accesses the original disk to make sure you really own the program, all changes you make to the working copy without fear of harming your original disk. In addition, if you have access to any desk accessories, you can add them to your working copy. I hope this gives you a few helpful hints for getting more out of ProDOS 16 and your Apple //GS.

## Teacher's Best Appleworks Tips

By David Chesebrough,  
courtesy of "The Works"

*Two most useful, yet little known Open-Apple commands;* OpenApple-Y will work throughout AppleWorks to delete from the cursor to the end of the line or category.

In the data base, OpenApple-" allows you to copy a category entry down through existing records in multiple record format.

*Print Single Sheet from Multiple Page Document;* Imbed print command OpenApple-O PE (pause each page) at the beginning of the file. Press OpenApple-K to calculate page breaks. Place the cursor on the first line of the desired page. Press OpenApple-P to print, and select "This Page". When the page is printed and printer pauses, press ESC to exit printing.

*Use OpenApple-K Prior to Saving Word Processing File;* When you print a file, its status will remain SAVED allowing you to keep better track of changes and need to save.

*Arrange Data Base File Before Printing Report;* (do this within Report format) If printing process is aborted (jammed paper, etc.), printing can be picked up from point of aborted record using OpenApple-R and selecting records "greater than".

*Create Flexible Data Base;* When creating new, add extra categories (mark with :) which can then be modified later with new names. You won't lose special formatting as you would in adding new categories.

*Use OpenApple-L in Single Record Format;* Alter form for easy entry and readability, more or less space per category.

*Print Mail Labels Right;* Enter printer options OpenApple-O, set page length (PL) to length of individual label, platen width (PW) to width of label, "No" to print heading (PH), and "Yes" to both Omit Heading (OL) and KS Keep No. of lines same.

*Spreadsheet Layout Tip;* To change layout (such as having numbers appear in standard dollars format so that all subsequent entries will also be affected, use OpenApple-L "Block" to highlight the area. Choosing Rows or Columns only affects existing entries.

*Spreadsheet Power for Data base Info;* Print report of data base information to DIF file on disk. Create "New" spreadsheet from the DIF file and information will be organized in columns. Use spreadsheet functions as needed. A student gradebook can be created from data base of students, reducing duplicate typing. Refer to the manual for an explanation of how to use PathNames.

*Error Trapping in Spreadsheet;* Order of calculation is critical. Try to keep calculated numbers to lower right of values needed in formula for calculation. When in doubt, press OpenApple-K to recalculate values, check sample values with calculator.

*Single Word Processing File for all Individual Students;* After writing and editing student reports, add printer options NP (New Page) and PE (pause each) at the beginning of a file. Show with OpenApple-Z, copy to Clipboard with OpenApple-C, and insert between each report by pasting from the Clipboard. When printing, position report form and press "Space" to print. When the form is completed, printing will stop until you place new form, and press space again.

*Keep Sections Together;* Use printer options OpenApple-O GB (group begin) and GE (group end) before and after each section, such as matching, to avoid having them split between pages. Be careful though - this can cause too much skipping with large sections.

*Templates Save Time;* Create templates of forms, reports, schedule calendars you create, etc., and save to a TEMPLATE disk. Start task by adding template from disk and change name with OpenApple-N.

*Lock Files for safety;* Use System Utilities Disk (came with the computer) to LOCK files on template and Resource Disks to avoid saving changes over them accidentally. Files can be UNLOCKED with System Utility before necessary changes.

*Free desktop calculator;* Add a new spreadsheet file CALC when starting up with AppleWorks. Use OpenApple-Q to access and use it as a calculator when needed.

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# Applications



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## The Red Fan

(or - At last "Applecations" gets a touch of culture!)

An introduction by Michael Bannigan.

Last October members who attended our regular monthly meeting in the Stephen Roberts Lecture Theatre were surprised to find some scaffolding erected along the right-hand side of the auditorium. It seemed clear that it was there to enable the mounting of an unusual piece of art. In response to many requests for more information about this art work, I managed to prevail upon the Curator of the University Art Collection, Mrs Pamela Bell, to write a few paragraphs about it. Perhaps after reading Mrs Bell's article, readers may have yet other interpretations of the work.

### Tim Storrier: The Red Fan

By Pamela Bell, Curator of the University Collection.

Tim Storrier's diptych "The Red Fan" of 1983 when hung side by side creates a fan-shaped object which can at present be seen in the Stephen Roberts Theatre. Storrier is a print maker, sculptor and painter; he is on the board of Trustees for the Art Gallery of New South Wales and was a judge in the 1988 Archibald Prize. He is perhaps best known to the general public for a series of fetishistic or ritual objects which represent a link with the landscape tradition in Australian art. As such these objects, although products of the 1980s have an aspect of romanticism in the desire expressed by the artist to capture something of the past of this country.

"The Red Fan" had its genesis in Central Australia, and is part of a series which includes "Bushfire Danger Fan" 1980 and "Sunset Fan" of 1981. The principal inspiration for this work derived from an object commonly seen in the outback, the bushfire indicator, with its half-circle of coloured segments and a pointer like a clock hand indicating bushfire conditions which Storrier has interpreted in media such as canvas, rope thongs and crude bush sticks. These materials are traditionally used for bush camps, but canvas and paint are also, of course, the traditional materials of the artist. The

shape and colour of the work also allude to the frequently-used sunset motif in Australian culture. Two common instances of this are the logo of the now defunct Sun newspaper and the rising sun badge of the Australian Army used in the two World Wars. On a more prosaic level "The Red Fan" may also suggest the searing heat of inland Australia.

This interesting work with its many layers of possible interpretation was a gift to the University of Sydney Collection from Mr G Hassall in 1980 through the Tax Incentive for the Arts Scheme.

## PC 89

After the 1988 absence of any Apple attendance, and the resulting comments from members, it was decided that the group should have a presence at this year's show. The success of our attendance at the MacWorld show in November 1988 caused the committee to be optimistic about the financial outcome of PC 89.

I feel, with many others, that our presence at these shows is a real service to our members. Judging by the many overseas and out-of-town members we spoke to, this is true. For many of these members - who make up two-thirds of our numbers - their only contact is through the magazine. A computer show can be the excuse needed to keep in touch with others, as well as seeing what is new in their hobby.

We also assisted many members from other - smaller user groups, whose club had membership in AUG(Sydney), and thus were treated as members.

The overall cost of this show, which saw us hiring a double stand - one side Apple // and the other Mac - was beyond our available budget, so we must thank Apple Australia, and notably Frank Revill for their support.

### What did we offer to callers;

In line with our stated aims - to support members, special prices were obtained for disks, and assorted software/ hardware, both for Apple // and Mac.

Again our Librarians excelled themselves in offering the latest public domain goodies on disk.

To attract new members, Sample Bags were available for purchase by non-members. These contained software, club disks, novelty items, etc. Although no final tally was available at this time, I believe that we sold about 400 bags in all.

### Members' Support;

The attendance and support by members was excellent. At all times we had at least four persons

present. Those who came for just a short period, often staid on because of the rush.

*Many thanks to all who helped.*

It was pleasing to have both Apple //, GS, and Mac users present, because of the many involved questions we had to field. President Ken wondered what qualification was needed to be a user these days, after trying to answer so many complex questions.

### About the show;

Largely an IBM-compatible affair, there was however a Mac on most stands, since that was probably the best computer to show graphics capability (a little bias here).

StatusGraph and PC Extras were the only retailers of "Apple" items.

Because of the total absence of "Apple" dealers, the User Group became the 'de-facto' Apple dealer, particularly in regard to Apple // computers.

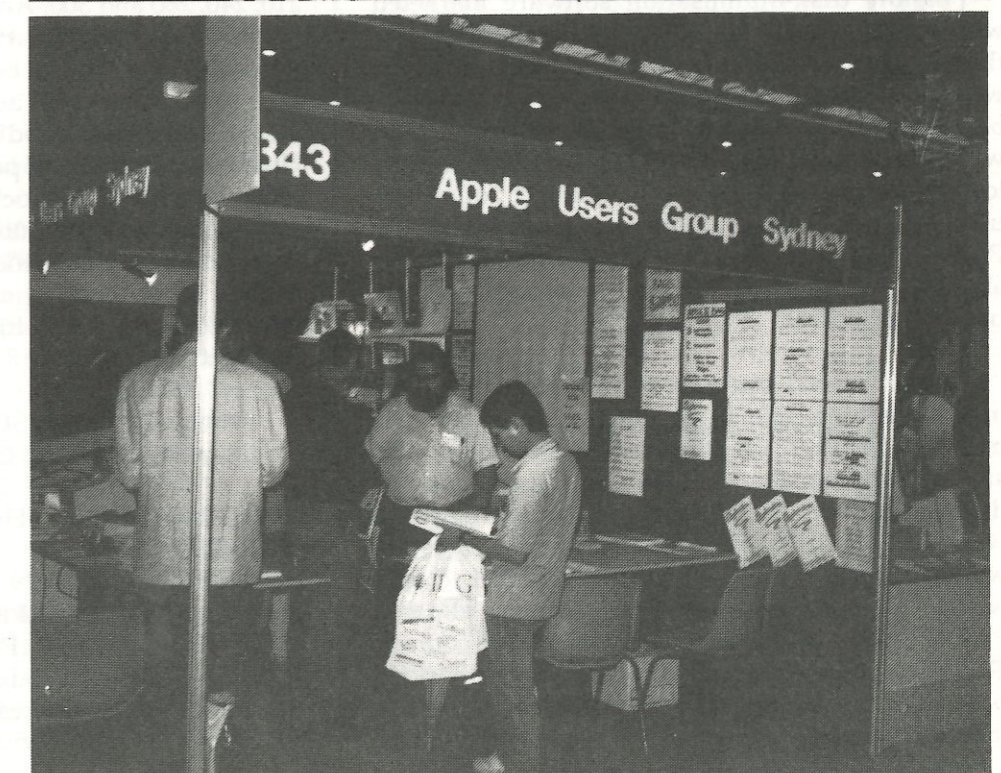
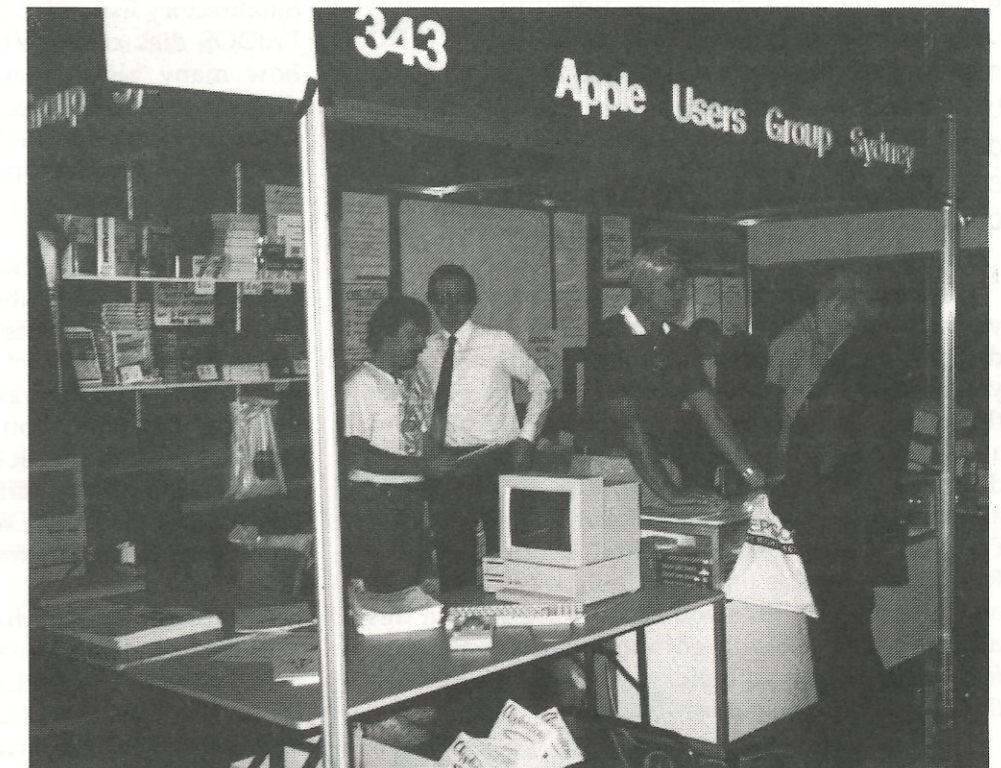
Had commissions been paid, our sales would have been high.

Notably the only dealers who promoted themselves with the group were Seahorse and Dataflow. They had a good advertisement in the current magazine and made available promotional material, avoiding us telling inquirers to look in the phone

book. Other information came from Roger Keating and Firmware Design.

### What about next show;

1. Yes we need to be there!
2. We must have more contact with other user groups to promote local attendance.
3. We must go in with at least one Apple dealer at a nearby stand.





## BASIC Utilities

By Lewis Pritchard.

As some of you are no doubt aware, the speed advantages of ProDOS are soon eroded by directory blocks being allocated all over the disk surface, resulting in much unnecessary and time-wasting head movement. (Note that these problems rarely become very significant on a 140K floppy disk, but once you move on to larger capacity storage media, the delays can be quite noticeable, and annoying.)

This can be avoided in many cases by creating all your subdirectories before placing any files on the disk. It's a good idea to >create a couple more than you need, to allow for future use. Unfortunately, even this doesn't help if you copy more than 12 files into a subdirectory, in which case the single allocated directory block is insufficient, and so another is allocated. As usual when allocating disk blocks, ProDOS simply takes the first available block. Regrettably, by this time that could mean anywhere on the disk. Next time you access something in this directory, ProDOS will go hunting across the disk for these further directory blocks, before even thinking about looking for the file.

Possibly disk-optimisation software marketed with (or at least for use with) hard disks addresses these directory-fragmentation problems, but I wouldn't know. I have found that these delays can be overcome by creating large directories to start with, say 5 blocks long if you are expecting to put a lot of files in them. Since I have never found any utility which would allow me to do this, and ProDOS certainly doesn't want to know anything about it, I have for some time been performing the process manually.

To start with, I created a subdirectory, then went into something like Copy II+ sector editor and manually marked off blocks in the bit map, also storing appropriate values in the blocks, as determined from 'Beneath Apple ProDOS'. After a while I decided the risks of mucking up a directory were not worth it, and came up with another scheme which, using Copy II+ file utilities, allowed ProDOS to do all the work (a lot safer, of course). This involved a rather complicated and laborious process of creating a subdirectory, creating files in the root directory to reserve disk space, copying files

into the subdirectory until it was about to require another block allocated to it, deleting one of the files from the root directory to free a block, then copying another file into the subdirectory, which had to be expanded first, thus using the freed block at the start of the disk.

As you can imagine, this takes some time and some care to ensure you get everything in the right order, etc. So I finally decided to automate the process. The result was the accompanying program, Subdirectory Expander. It should be used on a blank ProDOS disk called '/BLANK'. After asking you how many blocks you wish to allocate to the directory, it creates a subdirectory named 'BIGDIR' with that number of blocks allocated to it, all at the start of available disk space to speed access as much as possible.

I think you will know if you have the sort of problems I'm talking about. When you access files, the drive spends ages whining back and forth getting blocks of directories and files all over the place. If this is the case, Subdirectory Expander may be just what you need. Format yourself a ProDOS disk, calling it '/BLANK', check out how many blocks your subdirectories currently use, then run the program once for each of them, renaming BIGDIR after each run to match your existing ones.

If your large subdirectories are inside other subdirectories, you can simply modify Expander by changing '/BLANK/BIGDIR' to '/BLANK/directory1/directory2' and so on. This would involve modifying the pathnames in lines 210, 240, 260 and 300. Although this program is a lot faster than creating these large subdirectories yourself, you should be aware that it could still take some minutes to accomplish. For example, to create a 5 block subdirectory on a blank 800K Unidisk 3.5 took approximately 3 minutes 11 seconds, while a 10 block directory under the same conditions took 8 minutes 52 seconds. If you care to try it yourself, you'll find there are one hell of a lot of files to be created and deleted. Nevertheless, when your drive is getting too slow it can be well worth it.

Listing of program SUBDIR.EXPAND  
by Lewis Pritchard, Oct. '88.-

```
10 NORMAL :D$ = CHR$(4): PRINT D$"PR#3"
20 PRINT : HOME
30 INVERSE : HTAB 29: PRINT "Subdirectory
  Extender": NORMAL : PRINT
35 POKE 34,2: PRINT : PRINT
40 PRINT " Since a subdirectory packed up against
  the root directory is accessed a"
50 PRINT "lot faster, without grinding back and
```

```
forth all over the disk so much, this"
60 PRINT "program allows you to create, preferably
  on a blank disk, a subdirectory with"
70 PRINT "as many blocks allocated as you like, all
  in a bunch at the start of available"
80 PRINT "space. That way, you can start with a
  big subdirectory, and not have blocks"
90 PRINT "allocated all over the disk as it's
  extended, slowing things down."
95 PRINT
100 PRINT " Note that this is particularly useful if
  you use the utilities in Copy II+,"
110 PRINT "as every time you access a disk it
  thoroughly reads all directories on the"
120 PRINT "disk. If they're split up as normal,
  you'll hear GRIND...GRIND...GRIND... as"
130 PRINT "it checks them all out. Making them
  big enough to start with avoids this."
135 PRINT : PRINT " WARNING: This program is
  written to work with a ProDOS disk call /BLANK"
140 PRINT
150 INPUT "How many blocks do you want to
  allocate to the subdirectory ==>":A$4
160 IF A$ = "" THEN PRINT D$"CATALOG":
  GOTO 140
165 IF A$ = "NONE" OR A$ = "0" THEN PRINT :
  PRINT "Please yourself.": END
170 IF VAL (A$) = 0 THEN CALL - 151: PRINT
  "Please enter the number of blocks or 'NONE'":
  GOTO 140
180 A = VAL (A$):BLKS = A - 1:FILES = BLKS * 13
190 HOME : PRINT "Please wait, this could take a
  while (I'll give you a countdown)...": PRINT :
  PRINT
195 PRINT : PRINT "Setting up to create "A" block
  subdirectory..."
200 REM To start with, create the dir.
  (hopefully disk block 0)
210 PRINT : PRINT D$"
  CREATE/BLANK/BIGDIR"
215 REM Reserve the next 'n' blocks of the disk
  by creating files.
220 FOR K = 1 TO BLKS: PRINT D$"CREATE/
  BLANK/DELETE.ME."K",TTXT": NEXT
225 PRINT : PRINT "Working...";
230 FOR K = 1 TO BLKS: HTAB 11 + ((A > 10) AND
  ((A - K) < 10)): PRINT A - K: REM The countdown.
235 REM Create 12 files within the subdir. 1 more
  will extend it.
240 FOR J = 1 TO 12: PRINT D$"CREATE/BLANK/
  BIGDIR/DELETE.ME."J + (K - 1) * 13",TTXT":
  NEXT
245 REM About to allocate block to dir, so free a
  reserved disk block.
250 PRINT D$"DELETE/BLANK/DELETE.ME."K
255 REM Creating the 13th file actually
  allocates another dir. block
260 PRINT D$"CREATE/BLANK/BIGDIR/
  DELETE.ME."K * 13
```

```
270 NEXT
280 PRINT : PRINT "Directory blocks allocated.
  Now deleting "FILES" files I created.": PRINT
290 FOR K = 1 TO FILES: CALL - 998: PRINT
  "Deleting "; INVERSE : PRINT DK;: NORMAL :
  PRINT " of "; INVERSE : PRINT FILES;: NORMAL
  : PRINT
300 PRINT D$"DELETE/BLANK/BIGDIR/
  DELETE.ME."K: NEXT! 310 PRINT : PRINT "All
  done!"
320 END
```

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# Comparison of 6502 and 65816

## Episode 4

By Simon Walmsley.

Welcome! We've covered a bit of territory so far. Over the last few months we've looked at various aspects of the 6502 - zero page, the stack, registers, I/O etc. Now its time to be a little theoretical (not for too long) and look at a few features of the chip that aren't so hot.

### Orthogonality:-----

This is a measure of the degree to which any instruction can be used with any addressing mode. Although there are 56 general instructions and 13 different addressing modes (remember that data sheet for the 6502), not all the 13 addressing modes can be used with the 56 instructions. Some opcodes would not be able to use all of the address modes by their very nature ie some combinations of instruction and addressing mode are inappropriate. However it is not only the fact that the instruction/ addressing combinations are non-orthogonal, it is important to see that the addressing modes THEMSELVES are not orthogonal. This month will examine two issues with the 6502's orthogonality. Firstly the orthogonality of the addressing modes, and secondly the orthogonality of the instruction/addressing mode combinations.

### 1) - Addressing modes:-----

An examination of the 13 addressing modes (see 6502 data sheet) reveals that the set of addressing modes is 'nearly' orthogonal, and contains a fair number of different modes apart from the fact that the accumulator cannot be used as an index register. Immediate, relative and implied addressing are provided. The direct zero page addressing modes are orthogonal in that any (or none) of the index registers may be used to generate the effective address of the operand in zero page.

These modes are:

- Zero Page addressing

- Zero Page Indexed addressing, using either X or Y Similarly, direct absolute addressing modes are orthogonal in that any (or none) of the index registers may be used to generate the effective address of the operand anywhere in memory.

These modes are:

- Absolute addressing

- Absolute Indexed addressing, using either X or Y Indirect addressing is not orthogonal however, as there are certain restrictions on the index register which can be used in a particular addressing mode.

ie:

- There is NO plain indirect addressing mode using a zero page location as the pointer to the data. ie there is NO addressing mode of the form (IND) where IND is a zero page location.

- Indexed Indirect addressing exists, however this can only be used with the X index register, and the indirect address MUST be on page zero. There is NO addressing mode of the form (IND),Y).

- Indirect Indexing addressing exists, however this can only be used with the Y register, and the indirect address MUST be on page zero. There is NO addressing mode of the form (IND),Y).

- Absolute Indirect addressing is possible, however this cannot be used with index registers. There are NO addressing modes (where IND is an absolute address) of the form:

- (IND),X

- (IND),Y

- (IND),X

- (IND),Y

These restrictions arise for two main reasons. There is limited space for logic on the chip, and there are only 256 different instruction combinations available in the instruction encoding space. This poses a problem in writing assembler code in terms of designing the data structures. Although many structures are possible, the ways to access the data are limited by the lack of orthogonality of the addressing modes. Consequently the Y register must be the one containing the index in an instruction of the form (IND),Y and so register use must be more carefully considered than it might otherwise have been, when writing assembler code or designing a compiler that needs this type of data access. The addressing mode (IND),Y is one of the most useful modes for array processing. Although there is no way to specify a base address in a register (as an 8 bit register cannot hold a 16 bit address, and there is no way to combine registers), the zero page is used in a special way to hold base addresses. This is the zero page indirect set of addressing modes, which give the 6502 so much of its processing power. In these modes, the base address of data is stored in two zero page locations (lobyte of address first), much in the same way as the address registers are used in the 68000. The index registers can then be used to access consecutive locations from these base addresses, or data in locations pointed to by consecutive 'address registers'. This gives rise to powerful array and pointer capabilities. In my opinion, a major shortcoming of the addressing modes is the lack of addressing mode to be indirect from the stack, thus allowing for easy parameter passing to subroutines, reentrant, or recursive code.

Lack of logic space on the chip was most likely the reason for this, together with the fact that this chip was not designed for supporting high level languages. Of course it is possible to simulate the stack relative addressing modes, but it makes programming more difficult, and programs are harder to understand.

### 2) - Instructions/addressing modes:-----

Simple arithmetic leads us to assume that the 6502 is far from orthogonal in its instruction matrix. There are 56 instructions and 13 addressing modes. The fact that there are only 151 valid opcodes means that there are, on average, fewer than 3 addressing modes available to a particular general instruction. However the picture is not as gloomy as it might seem, for the use of certain addressing modes with some instructions logically precludes the use of other addressing modes. For instance: The opcode INX has an addressing mode of implied. It would not be logical to have an instruction of the form INX <address>, for the instruction itself implies the operand. Similarly, the LDA instruction needs an operand. It would not be logical to have an instruction as simply LDA, for the instruction does not imply the operand. Consequently some instructions and addressing modes are mutually exclusive. This accounts for some of the non-orthogonality. It is possible to LDA (\$EE),Y but it is not possible to LDX (\$EE),Y. While this might initially seem a drawback, and it is to some extent, it is necessary to recall the uses that the particular registers have in the architecture of the machine (Note that it is possible to simulate the LDX (\$EE),Y instruction using two instructions : LDA (\$EE),Y and TAX. If the accumulator must be preserved, then 4 instructions are necessary: PHA, LDA (\$EE),Y, TAX and PLA). All logical functions and arithmetic operations are performed in the accumulator. This register therefore, needs to have the most addressing modes available to it. In the 6502 this is the case. If the index must be calculated, this can be done in the accumulator. However index register increments and decrements are common in array processing, so special instructions (INX, INY, DEX, DEY) are included in the instruction set to accomplish these tasks.

Unfortunately however, even though there are a large number of unused opcodes, certain addressing modes are not possible with the accumulator for various instructions. In particular, any instruction that performs a read/ modify/ write sequence, eg ROR <address>, INC <address> can only use the X register as its index (if it uses one) in both absolute and zero page references. Otherwise all logical and arithmetic operations can use both the X and Y registers for indexing in absolute addressing. Strangely enough, the only instructions allowed to use the addressing mode ZeroPage,Y are the LDX

and STX instructions. No instruction exists for the accumulator to access memory using this addressing mode. In the author's opinion, this should not be the case, although the same effects can be achieved using other instructions. It is a great pity that relative addressing is only available to branch instructions.

While it is possible to write position independant code using branches (so long as the branches are +128 bytes to -127 bytes away), it is not possible to write easily position independant code concerning data. It is possible to write the code to access all data indirectly using zero page memory, and fill in the actual address of the data at run-time. However it is quite cumbersome to write code to achieve this, and the finished program will run considerably slower than if relative instructions were available. Similarly there are no indirect subroutine calls, although there is an indirect jump.

### Pipelining: -----

The 6502 was one of the first microprocessors to use pipelining to increase performance. All instructions take at least 2 cycles, one to fetch the opcode, and 1 to interpret the opcode, and with few exceptions, the number of cycles that an instruction takes is equal to the number of times that memory must be addressed. Two examples are shown below to illustrate the way that this is achieved. The first is a simple add instruction, and the second is a branch to show the effects on the pipeline when the branch is not taken, and the bubble that occurs when the branch is taken. The major point to be noted here is that every clock cycle in the 6502 is a memory cycle in which memory is either read or written. Simultaneously with the read or write of memory, and internal operation of the microprocessor is also occurring. (Note that 16 bit addresses are stored LO/HI)

See Examples 1 & 2

In the first demonstration, where the branch is not taken, the effective number of cycles needed to execute the instruction is 2. This is because because the next instruction is being fetched in cycle 3, and effectively, this is only 2 memory cycles after the branch instruction was fetched. However if the branch IS taken, then a 1 cycle bubble occurs in the pipeline (seen at cycle 3) where the opcode following the branch is read. Thus any branch that does not cross a page boundary requires 3 cycles to execute. Similarly, if a branch crosses a page boundary, then the 4th cycle generates an invalid read as well, as the PCH is incorrect. Thus the effective cycle time for this kind of branch is 4 cycles.

This can be summarised:

Example 1: -----

8000: ADC <16 bit address>  
8003: STA <16 bit address>

| Clock Cycles | External Operation                                        | Address | Data | Internal Operation                               |
|--------------|-----------------------------------------------------------|---------|------|--------------------------------------------------|
| 1            | Fetch Opcode                                              | 8000    | ADC  | Increment PC.                                    |
| 2            | Fetch first address<br>half from memory                   | 8001    | ADL  | Increment PC.<br>Interpret ADC.                  |
| 3            | Fetch second addr<br>half from memory                     | 8002    | ADH  | Increment PC.<br>Hold ADL.                       |
| 4            | Fetch operand from<br>memory                              | ADH,    | Data | Load data<br>ADL                                 |
| 5            | Fetch next opcode<br>from memory<br>(A + M + C)           | 8003    | STA  | Increment PC.<br>Perform ADC                     |
| 6            | Fetch first address<br>half from memory<br>-> Accumulator | 8004    | ADL  | Increment PC.<br>Result of add<br>Interpret STA. |

The above illustration shows that although the actual time taken to perform the add instruction is 6 cycles, the effective time due to the pipelining is only 4 cycles. This means a significant increase in speed over a non-pipelined processor when considering that all the instructions are similarly affected.

Example 2: -----

8000: BCC +40 8002: STA <16 bit address> Demonstration of pipelining effect if branch not taken:

| Clock Cycles | External Operation              | Address | Data | Internal Operation |
|--------------|---------------------------------|---------|------|--------------------|
| 1            | Fetch Opcode                    | 8000    | BCC  | Increment PC.      |
| 2            | Fetch offset<br>Interpret BCC.  | 8001    | +40  | Increment PC.      |
| 3            | Fetch Opcode<br>Offset ignored. | 8002    | STA  | Increment PC.      |

Demonstration of pipelining effect if branch taken and no page boundaries are crossed.

| Clock Cycles | External Operation              | Address | Data | Internal Operation                |
|--------------|---------------------------------|---------|------|-----------------------------------|
| 1            | Fetch Opcode                    | 8000    | BCC  | Increment PC.                     |
| 2            | Fetch offset<br>Interpret BCC.  | 8001    | +40  | Increment PC.                     |
| 3            | Fetch Opcode<br>Add +40 to PCL. | 8002    | STA  | Increment PC.                     |
| 4            | Fetch Opcode<br>to PCL.         | 8042    | OP   | Transfer Results<br>Increment PC. |

- branch not taken (2 cycles)
- branch taken, no crossing of page boundary (3 cycles)
- branch taken, page boundary crossed (4 cycles)

This information is critical in loops that depend on timing, but in average programs, can be ignored.

However the fact that invalid reads and writes occur due to pipelining mean that the memory designers and any I/O devices (since the 6502 uses memory mapped I/O) must take these invalid reads and writes into account. This actually led to problems with the introduction of the 65C02 concerning the read/modify/write instructions such

as DEC <address>. What was happening was the 6502 was issuing 1 read, 1 valid, and 1 invalid write. The 65C02 produced by NCR produced 2 reads (1 valid, 1 invalid) and 1 write. The systems that relied on the 6502 read/write cycles failed when the 65C02 was used. Similar problems occurred with the instructions that used indexing across page boundaries. This is why some versions of the 65C02 won't work in Apples.

Next month we wrap up our look at the 6502, so we can get on with the 65816. See you then!



## Timeout Quickspell

Reviewed by Godfrey Gamble

The *Timeout* programs are utilities that work with Appleworks, and from within Appleworks on //e, //c and //GS machines. The process is as follows, you modify a copy of your Appleworks startup disk using the menu driven program on the Timeout disks. Then when you load Appleworks next time - the process will pause and ask you to insert your Timeout application disk (or disks) after reading the index information from these disks Appleworks will continue loading. You then can run Appleworks normally.

Now for the differences.

At any time while running Appleworks (even during the 'Main Menu' screen ) pressing Open-Apple-Escape will produce a menu on top of

the current screen display. Selections can be made on this menu with the up and down arrows or by directly typing the item number. The contents of this menu depend on which applications were loaded during the Appleworks boot process.

TimeOut Quickspell is a spell checker for use within Appleworks. It allows you to check spelling within context or just simply via a word list. (Excellent for getting rid of all the proper nouns before actually checking the document). You approach it in the standard TimeOut manner (Open-Apple-Esc.) and it immediately begins checking against its three dictionaries.

- (1) An internal dictionary of commonly used words.
- (2) The custom dictionary which you expand as you go.
- (3) The main dictionary of 80,000 words.

When it has finished it gives you a list of the "unknown" words and asks if you want to replace, ignore, add to custom dictionary or correct in context. It has an added feature in

that it will also highlight 'double' words. When correcting "in context" it will give you the option of directly typing in an alternative, skipping the word or most importantly it will get suggestions. This produces on screen list of 29 possible words that you might have been trying to spell. You simply highlight the one you want and it will be replaced in the document. If its not on the list selecting 'more' will produce another 29 possible spellings.

The Spellchecker works quite fast and is an obvious asset to the Appleworks word processor. The disk also includes a utility which will do a word count on your document, useful for school and university assignments! However as the main dictionary takes up nearly on whole 5.25inch disk as your custom dictionary grows some disk swapping during the spellcheck process is required. Its a program which would benefit from 3.5inch disks or a memory expansion system. The program is very good value for money and worth searching-out at your favorite software supplier. The Beagle Bros "TimeOut" series are now distributed by Dataflow.

| File: Sample File                  | SUGGEST SPELLINGS | Escape: Correct word |
|------------------------------------|-------------------|----------------------|
| Suggested spellings for "BULLETEN" |                   |                      |
| 1. BULLETIN                        | 16. BAFFLEMENT    |                      |
| 2. BULLETINS                       | 17. BALED         |                      |
| 3. BULLPEN                         | 18. BALLERINA     |                      |
| 4. BALLET                          | 19. BALLERINAS    |                      |
| 5. BELLWETHER                      | 20. BALLETS       |                      |
| 6. BILLETED                        | 21. BALLOON       |                      |
| 7. BILLETING                       | 22. BALLOTTED     |                      |
| 8. BLATANT                         | 23. BALLOTTER     |                      |
| 9. BLUEING                         | 24. BALLOTTERS    |                      |
| 10. BULLET                         | 25. BALLOTING     |                      |
| 11. BULLETS                        | 26. BELATED       |                      |
| 12. BULLHEADED                     | 27. BELLIED       |                      |
| 13. BULLIED                        | 28. BELLIES       |                      |
| 14. BULLIES                        | 29. BESEECH       |                      |
| 15. BULLION                        | 30. More          |                      |

Type number, or use arrows, then press Return 353K Avail.

| File: Sample File           | QUICKSPELL  | Escape: Review/Add/Change |
|-----------------------------|-------------|---------------------------|
| 17 unknown / 2 double words |             |                           |
| Select words to:            | CHOCALATE   |                           |
| 1. Correct in context       | COPYS       |                           |
| 2. Replace                  | HENDERSEN   |                           |
| 3. Add to custom dictionary | HOPEFULLY   |                           |
| 4. Ignore                   | HOPELESLY   |                           |
| Or:                         | INSTRUCTION |                           |
| 5. Remove double words      | KITCHEN     |                           |
| 6. Correct ALL in context   | MANUEL      |                           |
|                             | MANUELS     |                           |
|                             | MYCH        |                           |
|                             | PRONTODOS   |                           |
|                             | RECIENT     |                           |
|                             | SINSERELY   |                           |
|                             | SIRUP       |                           |
|                             | SOSIAL      |                           |
|                             | SUETE       |                           |
|                             | UTILITY     |                           |

Type number, or use arrows, then press Return 353K Avail.



## Apple II Hints

By courtesy of Apple Computer Australia.

### Apple II Family: 80-Column Card Control Codes

A "CHR\$(21)" response to a "GET A\$" input statement in a BASIC program may disable the 80-column card on an Apple IIGS, Apple IIe, Apple IIc, (but not an Apple II Plus with Applied Engineering's Viewmaster 80).

The 80-Column Text Card Manual for the Apple II contains a table of CONTROL character functions for the text card:

CONTROL-Q CHR\$(17) Sets display to 40 cols

CONTROL-R CHR\$(18) Sets display to 80 cols

CONTROL-U CHR\$(21) Deactivates 80-Column Text Card, homes cursor, and clears screen

These functions are part of the 80-column ROM routines. Any time the codes are entered, these actions take place.

To halt the CONTROL-U function, the CONTROL-U keystroke needs to be trapped on input. Using the "GET A\$" method:

```
10 GET A$
20 IF A$ = CHR$(21) THEN A$ = "" :REM traps
   the CONTROL-U, sets it to blank
30 PRINT A$;
40 GOTO 10
```

### What Version ROM Shortcut

When you want to see if a //c has the new ROMs, from the BASIC prompt just type PR#7. If it comes up with, "APPLETALK(R) OFFLINE" then you have the new ROMs.

I'm not sure how scientific that is, but I know it sure is a lot easier to remember."

### AppleWorks Access to ImageWriter LQ Proportional Font

AppleWorks offers the option of using either the Proportional 1 or Proportional 2 font. The printer must be set correctly (DIP switches 1-6 and 1-7 set closed), and both lights on the Print Quality button (on the control panel of the printer) must be on.

It appears that the only major differences between a sample printed with "Proportional 1" and one printed with "Proportional 2" are line length and spacing. The fonts look identical. One example shows some anomalies in spacing--underlines do not align properly, and tabs are misaligned. There seems to be some difference in the way the application handles spacing and the way the Imagewriter LQ fonts handle spacing, which causes the problems.

### AppleWorks 2.0: Custom Printer Driver and Control-@ Print Command

When configuring a custom printer driver in AppleWorks 2.0, you can't enter a CTRL-@ (ASCII 0) in a printer command string. This is because AppleWorks 2.0, in order to ignore input processed by an accessory, looks for CTRL-@'s ASCII value in the accumulator after the AfReadTest routine.

Because of the obvious need to enter Control-@'s, the program has been changed to test the status of the carry bit rather than the accumulator when AfReadTest returns. In addition, a BASIC program ("AppleWorks Control-@ Patch Utility for AppleWorks 2.0 ONLY", March 1987 - supplied to dealers and support personnel) patches existing AppleWorks 2.0 disks to ignore the test for a Control-@ and process the character normally. The lines that perform the patch are:

```
20 D$ = CHR$(4)

360 PRINT D$;"BLOAD APPLEWORKS/
APLWORKS.SYSTEM,A$2000,T$FF"
370 IF PEEK (13055) <> 46 THEN 525 : REM Check
the version number
380 POKE 13057,112 : REM Changes the version
number
390 POKE 11760,242 : REM Replaces 54 with F2 in
ODED offset
400 PRINT D$;"BSAVE APPLEWORKS/
APLWORKS.SYSTEM,A$2000,L8531,T$FF"
410 GOTO 999
525 PRINT "This is not an AppleWorks 2.0 disk"
999 END
```

Implemented to facilitate communications between AppleWorks and add-ons like PinPoint utilities, the new feature works like this: once read from the keyboard, a character is passed to the routine AfReadTest. Here an accessory can examine the character. If the accessory decides to do nothing with the character, it is passed back. If the accessory does perform some action based on which key was pressed, then the accessory sets the accumulator to zero, which also happens to be the

ASCII value of a Control-@. Therefore, if a user were to type Control-@ from the keyboard, AppleWorks would ignore it because it assumes that that keypress had been handled by an accessory.

### AppleWorks 2.0: Memory Management on the Apple IIGS

After recognizing that it is running on an Apple IIGS, AppleWorks 2.0 uses the built-in memory manager to allocate all memory use. If the Apple IIGS is cold started, several of the tools in ROM are initialized and given small portions of memory for their own use. These tools include the Tool Locator, Memory Manager, and Desktop Manager. Also, the RAMDisk is defined, either as the number specified as the 'Minimum RAMDisk size' or 10K, whichever is larger.

When AppleWorks runs, it starts by allocating most of the first 64K bank and portions of the second 64K for itself. The rest of the memory remains free, available for expansion by the AppleWorks desktop and the RAMDisk.

Therefore, the amount stated by AppleWorks as 'nK free' is the sum of:

- the memory not allocated by the memory manager
- plus the memory already owned by AppleWorks
- less the memory owned by AppleWorks but occupied by documents currently on the desktop.

As AppleWorks runs, this nK of free space gets consumed either by AppleWorks, by the RAMDisk, or by add-on accessory programs.

AppleWorks allocates memory to:

- files that appear on the desktop
- portions, or all, of the AppleWorks program
- free space

As in all earlier versions, AppleWorks removes portions of itself from its portion of RAM if the memory is needed to store data files.

### Printing From an Apple IIGS to ImageWriter LQ on an AppleTalk Network

System 3.1 (the current version) does not support printing to an ImageWriter LQ on a network. You can print only to an ImageWriter II. Your dealer can get a patch that allows you to print only to an ImageWriter LQ on the network.

The next release of Apple IIGS System software is

expected to allow users to print to both the ImageWriter II and ImageWriter LQ--the same as with a Macintosh.

The manual says that you can print to the ImageWriter LQ on the network with no problem; however, because the system disk that supported this feature has slipped, this is incorrect.

### Other Fonts for the ImageWriter LQ and ImageWriter SC

A few companies are working on 3x and 4x fonts for the ImageWriter LQ and LaserWriter SC; however, none is available at this time. Fontastic Plus 2.0 gives users the ability to do bitmap editing and create their own 3x and 4x fonts. We haven't tested this yet. At this time, Apple doesn't have any.

### Apple IIGS: Printing To A LaserWriter Using ImageWriter Emulation

Apple IIGS users who want to print to any type of LaserWriter using an application that does not support PostScript (such as AppleWorks) need to follow the following instructions:

Run Chooser II BEFORE using the LaserWriter from your application on an Apple IIGS. Chooser II works much like the Macintosh Chooser desk accessory, except that it is a stand-alone application. When the LaserWriter is selected, Chooser II will check the LaserWriter to verify the presence of the ImageWriter Emulator.

The ImageWriter Emulator (IWEM) is a PostScript file that is downloaded into the LaserWriter. If the IWEM is not present, Chooser II will download the file. If IWEM is present in the LaserWriter, Chooser II will acknowledge and not download.

The ImageWriter Emulator understands all of the standard features of the ImageWriters I and II, including boldface, underline, superscript and subscript in the default font, Proportional-1 font and Proportional-2 font.

The ImageWriter Emulator defaults to Courier at 12 characters-per-inch, unless you have specified Proportional-1 or Proportional-2 in the Open-Apple-O printing options.

With ImageWriter Emulator version 1.1.2, Times Roman will be selected for Proportional-1 and Times Bold will be selected for Proportional-2. If you use the characters-per-inch option, this will cause Courier to be selected and printed at the CPI you specify.

## Speed Advantages of Using Diversi-Cache on the IIGS

Thanks to Steve King for the following information.

Here are the results of the testing I did using the Diversi-Cache program from DSR Inc. in Farmington MI on the Apple IIGS.

The hardware configuration was:

- Apple IIGS with new ROMs and 1.25M RAM
- HD20SC Hard Disk attached through slot 1,
- Two (2) Apple 3.5 floppys on the Smartport
- One (1) Apple 5.25 drive daisy-chained on the 3.5 drives.

I did not disable slot 6 for this test. This would have speed up the booting process because the 5.25 drive would not have been accessed during the boot. Disabling the slot would have decreased the times approximately 2 1/2 seconds.

This software stays intact in the Apple IIGS's memory even after a warm-boot!

For instance, you can warm boot to go from floppy boot to Hard Disk and still use Diversi-Cache. However, after you power down, you must boot up with a disk that has been installed with the Diversi-Cache software.

I tested such things as the time to mount a diskette, eject a diskette, boot a floppy, launch a program, etc, both with Diversi-Cache off and on. With Diversi-Cache on, I also tested with the cache set at various increments, 0 thru 364K. I tested Diversi-Cache no cache allocated to determine if any improvements exist when are RAM constraints.

Following are the results for the normal Finder and Diversi-Cache (D-C):

| Finder                 | D-C    | D-C    | D-C  | D-C  | D-C  |
|------------------------|--------|--------|------|------|------|
| -Cache Setting         | 0k     | 0k     | 128k | 256k | 384k |
| Mount a Diskette       | 6.5    | 5.4    | 4.6  | 4.4  | 4.5  |
| Eject a Diskette       | 4.3    | 4.1    | 4.2  | 4.5  | 4.7  |
| Copy the ProDOS File   |        |        |      |      |      |
| Diskette to Diskette   | 8.3    | 7.2    | 6.2  | 6.1  | 6.1  |
| Copy the ProDOS File   |        |        |      |      |      |
| Diskette to HD20       | 6.7    | 5.7    | 4.2  | 4.2  | 4.2  |
| Boot a Floppy          | 1:23.4 | 1:10.6 | 47.5 | 47.1 | 44.7 |
| SCSI Boot              | 47.4   | 47.2   | 47.2 | 47.3 | 47.4 |
| Launch Paintworks Plus |        |        |      |      |      |
| from HD20              | 38     | 36.5   | 35.6 | 35.6 | 35.6 |
| Launch Paintworks Plus |        |        |      |      |      |
| from Floppy            | 42     | 42     | 33.6 | 31.8 | 31.8 |

You may set up a cache using the Diversi-Cache Classic desk accessory in increments of: 8, 16, 24, 32, 40, 48, 56, and 64K. Cache settings past 64K are in increments of 32k up to 800k. I only tested 0, 128, 256 and 384K to save time and because when the cache is set to more than 384k, the available RAM begins to shrink and some programs won't run. For instance, when I set the cache to over 416K, I had some peculiar problems with programs like Paintworks Plus and Appleworks. These programs would not load properly. (I forwarded those results to the manufacturers for correction.)

The main thing I found was, with a cache of 128K, the disk drive access became significantly faster. The time to boot from floppy, mount the 5.25 drive icon and mount my hard disk icon (the disk window was closed) was cut by 23 seconds! This alone made the product well worth its price. My results suggest a cache setting of more than 128K though gives you only an incremental additional increase in speed.

You will note that this product is designed primarily to speed up floppy access ONLY. The times illustrate the software does practically nothing to speed up access of a HD20SC.

I talked with the programmer, president and main salesperson for the company--in other words THE COMPANY--Bill Basham. He said his software patches the memory manager sections that control disk I/O to achieve what it does. Bill also stated the Apple engineer who wrote this manager liked the way the software worked, but was concerned that Bill patched into some routines preventing a warm-boot from clearing the cache. I don't know what this will mean for any updates to the Apple IIGS, but for now it works fine.

## Apple IIGS: Printing Low-Res/High-Res Graphics Files

A low-resolution graphics file on the Apple IIGS can be printed from BASIC without using any special interface cards (for instance, an Apple IIGS with an ImageWriter II connected to the serial port) using Triple-Dump from Beagle Brothers.

This application lets any Apple II prints not only low-resolution, but high-resolution, double-high-resolution, and double-low-resolution files, as well as 40-column and 80-column text. Triple-Dump routines can also be used as part of BASIC programs.

## Apple IIGS: Characters Print Larger Than Specified Point Size

The Apple IIGS screen can display 320 by 200, or 640 by 200 pixels. The Apple IIGS print driver's default is to match the vertical resolution of the screen. This does not give you a true point size -- a "point" being 1/72 inch -- as the Macintosh does. The Apple IIGS print driver's default is to print in screen pixels, not in points. This causes the characters to print larger than the Macintosh characters of the same font and size.

If You Choose 'Condensed' in the Page Setup dialog, the print driver will print in points instead of screen pixels. The printed characters will approximate the size of the equivalent Macintosh characters.

## How to PRINT TAB on an ImageWriter Using a IIGS

Q. How do you get a BASIC "PRINT TAB" statement like:

```
PRINT TAB(10);"A"; TAB(20);"B"; TAB(30);"C"
```

to work on the Apple IIGS and ImageWriter II? The same statement works on the Apple IIe and ImageWriter II, provided the statement:

```
PRINT CHR$(9);"T E"
```

(Tab Enable) is issued before the PRINT TAB statement is executed. Using the Apple IIGS, the statement results in spacing 10 or 20 spaces rather than tabbing to those columns.

A. When printing hardcopy, PRINT TAB appears to be tabbing the specified spaces from last character. For example:

```
50 PRINT TAB (20);"Column 20";TAB (40);"Column 40"
```

causes the first tab to be placed at column 20, but the second tab is placed at column 68. "Column 20" is 9 spaces, first character is placed at 20, adding the next 8 characters, placing the last character at column 28. When the TAB 40 statement is executed, 40 spaces are added to the last cursor location (column 28), placing the cursor at column 68.

When using PRINT TAB for screen formatting, we consistently got good results. Only when this statement was used for hardcopy, it did not work.

For hardcopy printouts, use the HTAB statement to format columns correctly:

```
40 HTAB 40:PRINT "Column 40":HTAB 60: PRINT "Column 60"
```

Old Apple II manuals state that this is not possible, but the HTAB statement works correctly on the Apple IIGS, both on the screen and on the printer.

Overall, TAB and HTAB work as expected on the screen. When TAB and HTAB are used for printing, three factors must be considered:

- the Apple II being used
- the interface card it has
- the printer being printed to

Each of these variables affect the TAB and HTAB commands when used in hardcopy printing.

## Printing From Apple IIGS to LaserWriter

Connecting a LaserWriter IINT via LocalTalk cables to a Macintosh Plus with a 20MB hard drive, a Macintosh SE with an HD20 SC, and an Apple IIGS.

Q. When printing with AppleWorks from the Apple IIGS, will the LaserWriter IINT respond correctly to printing options, such as characters per inch, boldface, underline, superscript, and subscript?

A. Before using the LaserWriter from AppleWorks on an Apple IIGS, run Chooser II. Chooser II works similar to the Macintosh Chooser desk accessory except it is a stand-alone application. When the LaserWriter is chosen, Chooser II checks the LaserWriter to verify that the ImageWriter Emulator is present. The ImageWriter Emulator (IWEM) is a PostScript file that is downloaded to the LaserWriter. If the IWEM is not present, Chooser II downloads the file. If IWEM is present in the LaserWriter, Chooser II acknowledges and does not download.

The IWEM translates all standard features of the ImageWriter I and ImageWriter II, including boldface, underline, superscript, and subscript in the default, Proportional-1, and Proportional-2 fonts. The LaserWriter font default (12-point Courier) is selected when using the character-per-inch (CPI) option. When selected, the CPI determines the horizontal size of the Courier font.

The Proportional-1 font is Times Roman.  
The Proportional-2 font is Times Bold.

**Q.** What happens if the Apple IIGS sends something to be printed, and the LaserWriter IINT is already in use; will I have to wait?

**A.** The Apple IIGS responds the same as a Macintosh without background printing or spooling. The Apple IIGS takes its place in line and waits until the LaserWriter IINT is available. Then the Apple IIGS prints its documents.

**Q.** In this configuration, will the LaserWriter print in the Courier font when I print from AppleWorks?

**A.** Yes, the ImageWriter Emulator defaults to 12-point Courier, unless Proportional-1 or Proportional-2 is specified in the Open-Apple-O printing options. With ImageWriter Emulator version 1.1.2, Times Roman is selected for Proportional-1, and Times Bold is selected for Proportional-2. If the characters-per-inch option is used, Courier is selected and printed at the characters-per-inch that is specified.

### Sharing a Common Hard Drive

**Q.** I'd like to have two IIGs' use the same files on AppleWorks. If I purchase a SCSI drive and run MacServe, can I partition the hard disk?

**A.** At the current time, there is no Apple solution to this problem. A SCSI drive can only be connected to one system at a time. MacServe or AppleShare(TM) are products that run on a Mac, and do not work with the IIGs.

We have heard, however that CMS Enhancements, Inc. (714/529-9555) has a SCSI II Interface Card (TM) which will support two CMS SCSI Hard Disk Systems or two partitions on the same drive. In addition the SCSI II card can be set to allow for Mac and ProDOS(TM) partitions to reside on a common CMS SCSI(TM) hard drive. A CMS Conversion Utility allows text files to be shared between ProDOS and the Mac Systems. It supports both the //e and IIGs has Host "ID selectability. You may wish to get in touch with CMS for further information.

### Recovering a Hard Disk When Directory is Damaged

**Q.** I have run across a serious problem with an HD-20SC and data. My Apple IIGS will not recognize the drive as a ProDOS device. It has about 10MB of AppleWorks data on the drive with no way to access it and no backups. Yes, I know that I should have backed up the drive, but didn't.

I was unable to get any of the standard filer tools to work with the drive, and Copy II Plus was unable to read the directory. I was able to use the Bag of Tricks Program (Quality Software) to partially restore the directory and now am able to get a partial catalog. However, the problem remains: AppleWorks will not read the files because the first parts of the directory are too scrambled.

Bag of Tricks generates a "directory too large" message when trying to rebuild it. I suspect that this is because it is an old piece of software, and it expects the directory to be the size of what one might find on a 5.25" floppy.

The gentleman has his complete psychiatric practice records and information on the drive in addition to a book he is writing. Needless to say, he would appreciate any help that might lead to a solution to restoring this drive. I realize that the problem is not necessarily one you can solve, but I thought you might be able to point to a source that could manually rebuild the directory. I suspect that the data is fine, just the directory is trashed.

**A.** By using a copy of the AppleWorks file format document and a disk editor, some of the files may be able to be rescued from this disk. Restoration of the AppleWorks file header information is not easy, but it can be done.

Another possibility is to change the file type information on the files via a disk editor or anything that can read the directory blocks of the hard disk. If the file type can be changed to text, then it could be read into AppleWorks as a text file. AppleWorks database files possibly could be read into Profiler by PinPoint as AppleWorks files. If changed to text files, they could be read into AppleWriter.

If Bag of Tricks did some good restoring directory information on some files, we might also suggest moving any files that can be read to another disk and also removing them from the hard disk. This would ease the task of whatever utility may be used later. The possibility exists, although slim, that eventually Bag of Tricks could complete a directory rebuild if enough files were removed.

### Understanding SCSI or Who Gets Terminated?

By Sue Goodin

The best resource to date that we've found for information on how to hook up SCSI devices is still the Apple SCSI Cable System that is included in the box with every SCSI cable sold by Apple.

#### THE COMPONENTS

1. The CPU - If you are connecting a SCSI device into an Apple II computer ([+] , //e or IIGs), you will need an Apple II SCSI card. On a Macintosh, you do not need a SCSI card: You can hook up SCSI devices directly to the SCSI port of your CPU (Macintosh Plus, Macintosh SE, Macintosh II).
2. A SCSI device - most frequently, this will be a hard drive, some Laser printers (Apple's LaserWriter IISC), although other types of SCSI devices are available as well.
3. System Cable (M0206) - This is the cable you will use to connect the first external SCSI device to your CPU.
4. Peripheral Interface Cable (M0207) - This is the cable you will use to make a connection between two external SCSI devices.
5. Cable Extender (M0208) - You may require a longer cable between your CPU and a SCSI device, or between two SCSI devices. The cable extender gives you this extra distance. The maximum length of a SCSI cable (including cable extenders) is 21 feet (7 meters).
6. Terminator (M0209) - The terminator is a noise damper, and keeps signals from bouncing back from the end of the line which can cause interference with new messages and damage the SCSI chip inside your computer.

#### NON-APPLE SCSI CONNECTIONS

Apple External SCSI devices are not terminated. Some third party SCSI devices may be terminated, and you will need to check your documentation on the third party device to determine whether or not termination is built in or not. If there is no internal termination, follow the procedures as though for an Apple SCSI device. If the device IS terminated, and there is no way in which to disable the termination (there is usually some provision for removing the termination), then you should connect the device as the LAST device in the SCSI chain, and NO additional termination at the end is required.

**IMPORTANT!** You can have no more than TWO terminators in the entire SCSI chain.

#### IIGS and SCSI Drive Problems

**Q.** Some users have complained that they are having problems with their HD 20SC drives on the

Apple IIGS. It does not seem to happen on all systems, however. Do we have a rash of bad hard drives?

**A.** No, not in the least. The problem occurs on systems with old versions of the SCSI controller card. The IIGS seems unable to recognize these cards as boot devices. Check the ROM at location A3 on the SCSI controller card and determine its version number. If this ROM is part number 341-0112A, you have the old ROM and you will need to upgrade to the Rev B (341-0112B) ROM. This is a free upgrade available through Apple Authorized Dealers.

#### How To Use GS/OS With a ProFile

When using GS/OS under Apple IIGS System Disk 4.0 with a 5MB ProFile, be sure you are using the latest ProFile ROM revision.

A 5MB ProFile needs the 341-0299 ROM revision to work correctly with GS/OS.

If you have problems formatting, or receive a message stating that your drive appears to be damaged, you need the new ROM.

(NOTE: This ROM is a service part, and is available from your Apple dealer)

Before using GS/OS with a ProFile:

- Ensure that the ProFile Interface Card has the 341-0299 ROM
- Ensure that the ProFile Interface Card has been modified for use with the Apple IIGS.

#### Procedure for Using GS/OS With a ProFile

NOTE: The Partition and Zero option of the Advance Disk Utility does not work with the ProFile; it works with SCSI drives only.

1. Select a slot for the ProFile Interface Card (slot 7 is used in this procedure).
2. Install the ProFile Interface Card and turn on the Apple IIGS:
3. Press APPLE-CONTROL-ESC to enter the Control Panel. In the Control Panel, under the SLOTS item:
  - a. Set SLOT 7 to "Your Card".
  - b. Set STARTUP SLOT to "5".
  - c. Press RETURN, ESC, RETURN to exit from the Control Panel.
4. Turn the computer off.

5. Insert the Apple IIGS System Disk in the first 3.5" drive and the System Tools disk in the second 3.5" drive (if available).

6. Turn the computer on.

7. After the system starts up, the SYSTEM.DISK, SYSTEM.TOOLS, and ProFile are on the desktop.

NOTE: If the ProFile was not formatted for ProDOS, GS/OS asks if the volume should be initialized.

To initialize:

- a. Select "Initialize".
- b. Name the volume.

This should take only a few seconds.

8. Open the System Tools disk and run the Installer program.

NOTE: If you have only one drive, eject the System Disk and insert the System Tools disk. The Installer program prompts you with Eject/Insert dialog boxes.

- a. A list of items to install appears.
- b. Select "Install System Files".
- c. Use the "Volume" button to bring the ProFile disk name to the top right of the screen.
- d. Select "Install".

The Installer program copies the System files from the SYSTEM.DISK and the SYSTEM.TOOLS disks to the ProFile. Old System files are replaced, but Desk Accessories, Fonts, and other files in "SYSTEM FOLDER" are not deleted.

9. To add other items, such as the SCSI card or 5.25" drive:

- a. Select the item.
- b. Click Install.

10. Install a printer driver:

- a. Select the item.
- b. Click Install.

11. Set the Control Panel to start up from slot 7.

12. Restart the system using the ProFile.

The ProFile is now set up for use with GS/OS.

NOTE: If you copy applications to the ProFile, copy only the program and data files--DO NOT copy the System Folder from the application disks.

### Hooking Up Two Joysticks on the IIGS?

There is no Apple solution to this, but alternatives

are available from third party sources. At least one such solution is available from CRG (California Research Group) at 805/529-2082. They advertise a product called "Paddle Adapple".

### MS-DOS on the IIGS?

Applied Engineering has announced their "PC Transporter" that allows MS-DOS to run on the IIGS. Prices vary depending on memory configuration.

They are also selling a 5.25" 360K PC compatible disk drive. For full details, contact Applied Engineering, Carrollton, TX (214/241-6060).

### Formatting a SCSI drive on a IIGS

The answer to this lies in the Technical Procedures Manuals under Hard Disk 20SC. In the basics section, there is a heading 'Reinitialising with an Apple IIGS or Apple IIe'. In brief, the section tells you to first initialise with Apple II SCSI Diagnostic Diskette and then use the System Utilities. Both disks must be used in conjunction with the Tech. Procedures to format the disk properly.

### AppleCD SC Is Compatible With ProDOS

Concerning the Apple II, current ProDOS applications can use the AppleCD SC. For example, an AppleWorks database on CD-ROM can be accessed as though the file resides on a hard disk. Because CDs are read-only, you can't record any changes made back to the CD-ROM, though these changes can be written to other media with no difficulties.

Some things to keep in mind:

- The Apple II SCSI card requires the Rev "C" ROM.

- There is a volume limit of 32MB, resulting in several partitions on a single CD-ROM.

- The AppleCD SC appears the same as any SCSI drive to ProDOS

### Apple IIGS: Changing Control Panel Settings

Toolbox routines, explained in the Addison-Wesley manuals Apple IIGS Toolbox Reference and Programmer's Introduction to the Apple IIGS, allow Pascal, assembly, and Apple IIGS BASIC programmers to change Control Panel settings from within a program. Changing the settings from Applesoft, however, is not possible.

### Apple IIGS Chooser

Q. When using Apple IIGS's on an AppleTalk network with ImageWriter II's with AppleTalk cards, how will a person be able to choose which printer they will print their files on from within programs such as AppleWorks or Print Shop?

From within either program you can select slot, machine, and interface, but not which networked machines to print on. I have used CHOOSER on the GS system utilities to choose the LaserWriter or ImageWriter before booting AppleWorks, is that what must be done for each machine each time the machine is turned on?

A. Currently, this is the only way choose an AppleTalk Printer (by using the Chooser on startup). Future solutions could include: a startup application that will let you choose a printer or automatically choose a default printer; a Classic Desk Accessory that will act like the Macintosh Chooser and let you change the printer on the fly. The Apple IIGS Printing Manager will offer the ability to choose and remember a printer, but will only work from the Super Hires interface.

### GS/OS and Boot Volume Name

Q. I encountered a problem with GS/OS (System disk 4.0, Finder 1.2) when I changed the boot volume name:

1. Started up in the GS Finder.
2. Changed the name of the boot volume from "system.disk" to "ralph".
3. Ran a ProDOS 8 program.

After quitting the application, a dialog box appeared asking for the "system.disk" to be inserted. Since this was not possible, I had to press the "cancel" button. GS/OS reported an error, and the system had to be restarted.

A. All portions of GS/OS that need to know of a disk name change are notified when the change is made--except one, the Loader. After quitting an application, the Loader reloads the Finder. Because the Loader is not notified of the name change of the start-up disk, the dialog box you saw is generated.

### Apple IIGS: Composite and analog video

The Apple IIGS has two video ports: an RCA phono jack and a 15-pin D-Type connector. An EIA-standard composite video signal (2.0V white, 0.75V black, 0.0V sync., 75-ohm impedance) is available from both connectors. This composite signal drives many monitors such as the AppleColor

Composite Monitor, the Apple Monochrome Monitor, and a TV unit with an RF modulator. While composite video monitors can be used with the Apple IIGS, they don't fully render the 320 x 200- and 640 x 200-pixel color graphics potential of the new system.

The 15-pin connector analog RGB signals provide full color graphics display capability. Note that the Apple IIGS outputs analog, not digital, RGB signals. The designers preferred the unrestricted character of an analog signal for the ability of the Apple IIGS to support 4096 colors. Apple offers a new platinum Apple Color RGB Monitor for the Apple IIGS. Other analog RGB monitors known to work with the Apple IIGS include several models by Hitachi, Panasonic, Sanyo, Mitsubishi, Conrac, and Commodore.

To check if your monitor is analog RGB, consult the manual. Check the pinouts before connecting the monitor to an Apple IIGS to make sure your monitor is compatible with pins 7 and 8. The Apple IIGS's 15-pin RGB video signals are as follows:

Pin Signal

- 1 Signal ground (Red)
  - 2 Analog RED with sync
  - 3 Composite sync
  - 4 No connection
  - 5 Analog GREEN with sync
  - 6 Signal ground (Green)
  - 7 -5 volts DC
  - 8 +12 volts DC
  - 9 Analog BLUE with sync
  - 10 No connection
  - 11 Sound 1V peak-to-peak
  - 12 NTSC/composite color video out
  - 13 Signal ground (Blue)
  - 14 No connection
  - 15 No connection
- Shield System ground

There's no simple, straightforward way to invert sync or to separate horizontal and vertical sync on the composite signal for incompatible monitors, but it could be done as an interface product.

Some types and makes of monitors won't work at all. Digital RGB monitors either won't work at all or will work with unpredictable results. Digital RGB monitors with these problems are Apple's older Color Monitor 100 and IBM RGB monitors (IBM's RGB monitors need inverted sync in addition to TTL video signals.). Apple's Flat Panel Display has incompatible signals.

Do NOT assume that a DB-15 connector on your color

monitor means it's analog RGB.

WARNING: THIS INFORMATION IS PROVIDED FOR YOUR INTEREST ONLY! ANY WIRING TO YOUR C-COMPUTER SHOULD BE CARRIED OUT BY AUTHORISED APPLE PERSONEL, TO AVOID BREACHING WARRANTEE.



## Appending Machine Language Routines To Apple BASIC

By Steven Zanker

This article will show you how to append machine language routines to either Applesoft or Integer basic. Why append the routine?

Appended routines use less space in memory and on disk than DATA or POKE statements. Execution time is also reduced. In Applesoft, using a FOR/NEXT loop to read and poke DATA can use up to 5 times the space taken by the resulting routine.

By appending the routine much space can be saved, both in RAM and disk memory.

Routines to be appended either should be relocatable, that is execute in any portion of RAM, or have a short move routine prefixed ( an example is given later).

### Applesoft BASIC:

An Applesoft program line appears in memory under the following format: the first 2 bytes contain the absolute address of the next line; bytes 3 & 4 contain the line number; the tokenised line then appears; and an end of line indicator (0) follows.

For the end of the program both address bytes contain zero.

To append, first run the existing program to get the routine poked into memory, or key it in using the monitor. Append 3 zeros to the routine, then BSAVE it onto disk and delete the now un-needed POKE and DATA statements, then enter the following program line, exactly as shown:

```
63999 R0 = PEEK(121) + PEEK(122)
* 256 + 33 : RETURN
```

Line number 63999 is used because it is the

highest permissible line number, and any appended routine will be lost if a line is added between it and the appended routine. Locations 121/2 will contain the address of that line when executed, and the constant 33 is the lines length. Any 2 character variable name may be used. To set variable, GOSUB 63999.

Now enter the monitor with CALL-151 and locate the end of the program using the end of program pointer (175/6 dec) by keying:

```
*AF:B0 <return>
```

The monitor will respond with the lowbyte of the address on one line and the highbyte on the next.

Now BLOAD the machine language routine, using the A\$ parameter, at that address, then find the end of the routine by keying successive list commands (\*L <return> ). The first location following the 3 zeros is now the end of the program. Change the end of program pointer by entering:

```
*AF:lb hb <return>
```

where lb & hb are the low & high bytes of the location. The LOMEM pointer must also be changed; enter:

```
*69:lb hb <return>
```

and re-enter Applesoft with control-C.

The appending is now complete, and any line, with the exception of the last, may be added, changed or deleted without loss of the routine.

WARNING: using RENUMBER will cause loss of routine, BSAVE and re-append the routine.

Where the routine must be moved to a specific location to execute properly, prefix with the following routine:

```
300- 20 58 FF JSR $FF58 ;save address
303- BA TSX
304- BD 00 01 LDA $0100,X ;get low-byte
of address
307- AB TAY
308- CA DEX
309- BD 00 01 LDA $0100,X ;high-byte
of address
30C- 18 CLC
30D- 69 38 ADC #$32 ;this routines length
30F- 90 01 BCC $0312
311- C8 INY
312- 85 3C STA $3C ;start low
314- 84 3D STY $3D ;start high
316- 18 CLC
317- 69 11 ADC #$11 ;11
```

```
319- 90 01 BCC $031C
31B- C8 INY
31C- 18 CLC
31D- 69 12 ADC #$12 ;12
31f- 90 01 BCC $0321
321- C8 INY
322- 85 3E STA $3E ;end low
324- 84 3F STY $3F ;end high
326- 18 CLC
327- A9 d1 LDA #d1 ;dest low
329- A0 dh LDY #dh ;dest high
32B- 85 42 STA $42
32D- 84 43 STY $43
32F- A0 00 LDY #0 ;must be zero
331- 4C 2C FE JMP $FE2C ;mem move
```

The bytes 11, 12, d1, & dh must be supplied by you: 11 + 12 must add up to the length of your routine less 1. Two additions enable routines of up to 510 (dec) bytes to be moved. For less than 256, use zero in 11. Bytes d1 & dh are the low & high bytes of the destination address.

### Integer BASIC:

Appending to Integer is entirely different. The program loads from HIMEM (\$4C & 4D) down, the start being pointed to by \$CA & CB. The program is stored in the following format: the first byte indicates the length of the line; followed by a two byte line number; then the tokenised line; with a end of line indicator (1) byte bringing up the end.

Integer basic does not have read or data statements, therefore each byte of a machine language routine must be POKEd into memory wasting an incredible amount of space.

To append, first BSAVE the routine onto disk, making a note of its exact length, then delete all unnecessary poke statements, and insert the following line, exactly as shown:

```
32767 R0 = PEEK(228) + PEEK(229) * 256 + 30 :
RETURN
```

Line number 32767 is used, to prevent insertion of line between it and the routine, which would be destroyed. As with applesoft, GOSUB 32767, and the variable will be set to the starting address of the routine. Now enter the monitor with CALL -151 and locate the beginning of the program:

```
*CA:CB <return>
and also HIMEM:
```

```
*4C:4D <return>
```

The program must now be moved down the length of the routine, using a memory move command; eg if the program begins at \$7E33 and ends at \$8000 and the routine to be appended is \$52 (82 dec) bytes long,

enter:

```
*7DE1 < 7E33.8000M <return>
```

(\$7DE1 = \$7E33 - \$52). Now reset CA & CB to point to the new starting location, and calculate the new end location (eg \$8000 - \$52 = \$7FAE), then BLOAD the routine at that location.

Re-enter basic with control-C. The program can now have lines deleted, inserted or changed (with the exception of the last) with no ill effect. Unfortunately the Integer basic interpreter will list the program from start to HIMEM, meaning the routine appears as garbage lines at the end of the program.

Warning: HIMEM must never be > 32768 (\$8000) otherwise a fatal error message will generate.

### NOTES:

1. Routines may be moved to a location away from either basic program instead of BSAVEing it.
2. Where 2 or more routines need to be appended, combine before actually appending. To find the starting address of each routine add the length to its start address, giving the next, eg: 100 GOSUB 63999 : R1 = R0 + 36 : R2 = R1 + 20 ;routines start at R0,R1&R2
3. Shape tables and other data can also be appended.

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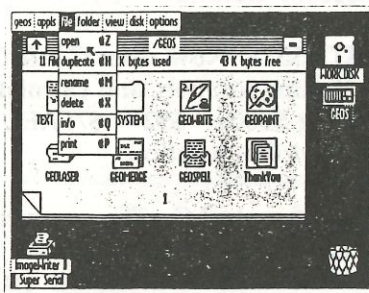
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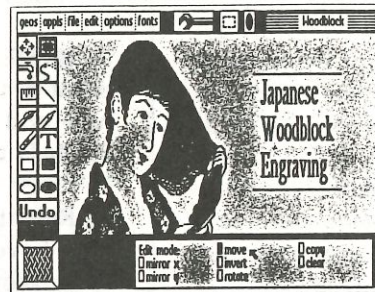
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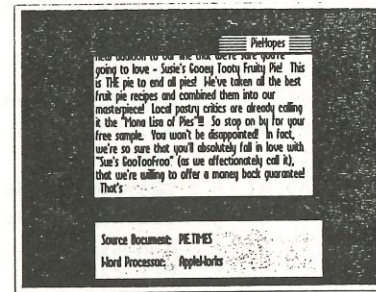
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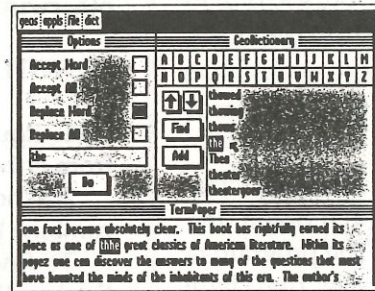
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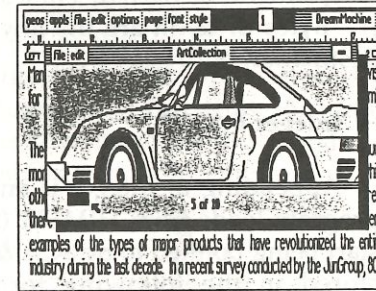
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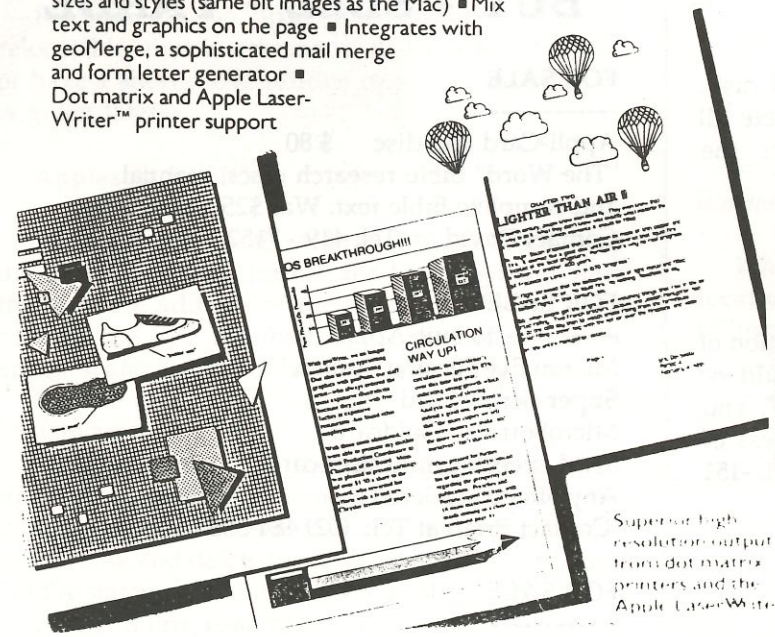
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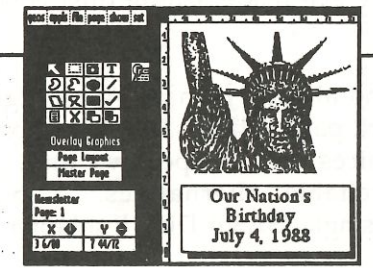
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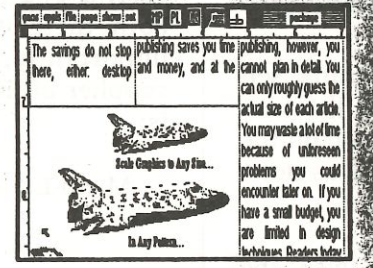
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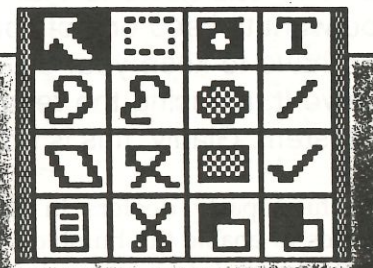
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# Daisy Chaining 5.25" Disk II's to a IIGs

By Michael Hickey

No doubt there are a few of you out there surviving, even thriving on older model Apple II's. Many of you will be considering upgrading to the newer Apple IIGs computer. But what about the large hardware and software investment you've put into your beloved Apple II!! The good news is that the Apple IIGS IS highly compatible with Apple II, ][e and ][c software. The sad news is that it appears that if you want to keep one of your Disk II's you'll also have to keep your disk controller card to drive it, reducing the resale value of your old system. Gladly, this is not the case!

Several third party dealers in Australia sell adapter cables to enable the humble Disk II to run from the smart port / daisy chain port on both the IIGs and ][c. This enables the Disk II to run as slot 6 drive 1 without an interface card in slot 6.

If you only need one 5 1/4" disk drive this is the way to go.

## First SWITCH OFF YOUR APPLE!!

Remove the Disk II interface and disconnect the drive you wish to alter. Then carefully unscrew and open the case on your Disk II and replace the 20 way ribbon cable with the new cable making sure that the notches line up on both the interface board in the Disk II and the connector on the new cable. Replace the case and plug the 20 pin connector into the last device on the smart port daisy chain. When you have tidied up and are ready to try it out, turn your IIGs on and alter the Control Panel to show slot 6 Disk Port and the Start up slot to Scan. Now when you startup your IIGs the computer will attempt to boot from the terminating Disk II first and if no bootable disk is found it will poll the Apple 3.5 drive.

If you have two Disk II's to daisy chain the problem is a little more difficult in that you should get a cheque drawn on a US bank to the order of \$US25 and send it to:

Applied Services

7474 Hickory Log Cr., Columbia  
MD 21045 USA

They will promptly return to you a DB19 to 20 pin disk drive converter which will connect two Disk II's to an Apple IIGs's smart port. In this case the Disk II's to run as slot 6 drive 1 and drive 2 respectively, once again without an interface card in slot 6.

The connection is even simpler in this case; no case to open and no cable to replace. The DB19 to 20 pin disk drive converter is a double sided printed circuit board with mountings for two standard Disk II connectors. Simply unplug the Disk II's from the slot 6 interface card and plug them onto the PCB. This time making sure that the notches on the 20 pin plug face away from the DB19. The PCB is naked to the

world but with a little mucking about with a Dick Smith zippy box I've made a little dust cover for mine.

For those who already own an Apple IIGs and want to add third party (cheap) Disk II compatibles both these choices are inexpensive and, more importantly, reliable alternatives. A prolific supplier of the single (\$A30) Disk II adapter cable is:

Micro-Educational Unit 8, 235 D

## MEMBERSHIP SURVEY

The management of AUG (Sydney) often wonders about the wishes and interests of its members. To be able to get the facts, a questionnaire has been placed in the centre of this months 'Applications'.

Please complete the questions by CIRCLING the appropriate answers (for you).

Then pull the form out of the staples and fold it in thirds along the dotted line so that the return address is on the front, and AUG logo is on the back.

NO STAMP is needed for posting.

### Be a WINNER

Your name is NOT needed on the survey form, but if you enclose your mailing label with the survey, you will be eligible for the *lucky draw*.

Please write the computer of your choice on the back of the label.

## The Apple Users' Group (Sydney) Inc.

### Membership Survey

In order to improve our facilities and services to you would you please answer all questions by placing a circle around the answers which are correct for you. All replies will be kept strictly confidential.

### A) INTERESTS

The following question is critical to this survey and must be answered.

1. What are your computer interests.  
(NOT what you own please)
- |                  |   |
|------------------|---|
| APPLE II+,c,e,gs | A |
| MACINTOSH        | B |
| BOTH             | C |

### B) MEETINGS

In the following questions, you are asked about your use of our MEETING facilities provided by the A.U.G.

2. During the past twelve months, how many main meetings have you attended?
- |                    |   |
|--------------------|---|
| NONE               | 1 |
| 1 - 2              | 2 |
| 3 - 6              | 3 |
| 7 - 11             | 4 |
| ALL APPLE II & MAC | 5 |
| DON'T KNOW         | 6 |
3. How often do you believe MAIN Meetings should be held?
- |                      |    |
|----------------------|----|
| RETAINED AS IS       | 7  |
| ABOLISHED COMPLETELY | 8  |
| SPECIAL REASONS ONLY | 9  |
| DON'T KNOW           | 10 |

### 4. How important are these meeting events?

|                                                 | Very Important                    | Important         | Not Important | Don't know |
|-------------------------------------------------|-----------------------------------|-------------------|---------------|------------|
|                                                 | 11                                | 12                | 13            | 14         |
| Demonstrations of hardware                      | 11                                | 12                | 13            | 14         |
| Demonstrations of software                      | 15                                | 16                | 17            | 18         |
| Question & answer sessions                      | 19                                | 20                | 21            | 22         |
| Tea and coffee breaks                           | 23                                | 24                | 25            | 26         |
| Special Interest Group reports                  | 27                                | 28                | 29            | 30         |
| News and coming events                          | 31                                | 32                | 33            | 34         |
| 5. Which Special Interest Groups do you attend? | APPLE II                          | Business Group    | 35            |            |
|                                                 | MACINTOSH                         | IIGs Group        | 36            |            |
|                                                 | (If your answer is NONE go to Q9) | Hypercard Group   | 37            |            |
|                                                 |                                   | Programmers Group | 38            |            |
|                                                 |                                   | Business Group    | 39            |            |
|                                                 |                                   | NONE              | 40            |            |

6. How often are S.I.G.s you want to attend held at the same time?  
(Special Interest Group)
- |                |    |
|----------------|----|
| ONCE A MEETING | 41 |
| LESS OFTEN     | 42 |
| NEVER          | 43 |

7. Would you attend a S.I.G. on SATURDAY's
- |     |    |
|-----|----|
| YES | 44 |
| NO  | 45 |

8. Is there a S.I.G. which you would like us to start?
- |  |    |
|--|----|
|  | 46 |
|--|----|

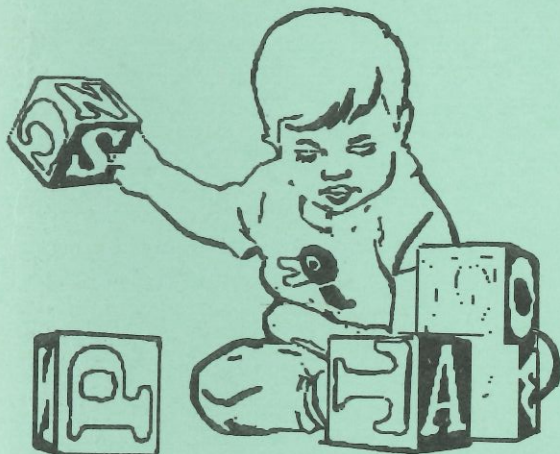
9. We record all general meetings on audio cassettes. Are these of any value to you?
- |            |    |
|------------|----|
| YES        | 47 |
| NO         | 48 |
| DON'T KNOW | 49 |

# Applecations



LETRA STUDIO -

Jan/Feb 1990



CHILDS PLAY

- Review by Jan Howley

THE PUBLICATION OF THE  
APPLE USER GROUP (SYDNEY)  
Incorporated in N.S.W.

Reg. by Aust. Post.  
No. NBH 3716

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# Apple // File Type Notes

Developer Technical Support File Type Assignments November 1989

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Assignments with a date indicate the release date of the File Type Note for that assignment, and all file types and auxiliary types which are not listed in this Note are reserved and should not be used.

\* = Finder identifies for System Software 5.0 New \*\*\*  
 + = Finder identifies for System Software 5.0 only on machines Revised \*R\* with more than 512K memory

| File Type Description | File Type Auxiliary | TypeDescription Date |
|-----------------------|---------------------|----------------------|
|                       |                     | \$00* Unknown        |

|              |                                               |
|--------------|-----------------------------------------------|
| \$01*        | Bad blocks                                    |
| \$02+        | Apple /// Pascal code                         |
| \$03+        | Apple /// Pascal text                         |
| \$04*        | ASCII text                                    |
|              | Random-access record-length                   |
| \$05+        | Apple /// Pascal data                         |
| \$06*        | Binary                                        |
|              | Load address in bank 0                        |
| \$07+        | Apple /// Font                                |
| \$08*        | Apple II or /// Graphics 05/89                |
| \$08+ \$4000 | Packed Hi-Res Image Image Format 11/88        |
| \$08+ \$4001 | Packed Double Hi-Res Image Image Format 11/88 |
| \$09+        | Apple /// BASIC program                       |
| \$0A+        | Apple /// BASIC data                          |
| \$0B+        | Apple /// Word Processor                      |
| \$0C+        | Apple /// SOS System                          |
| \$0F*        | Folder                                        |
| \$10+        | Apple /// RPS data                            |
| \$11+        | Apple /// RPS index                           |
| \$12+        | Apple /// AppleFile discard                   |
| \$13+        | Apple /// AppleFile model                     |
| \$14+        | Apple /// AppleFile report format             |
| \$15+        | Apple /// screen library                      |
| \$16+        | PFS document                                  |
| \$16+ \$0001 | PFS:File docu-                                |

| ment         | Program Specific                                         |
|--------------|----------------------------------------------------------|
| \$16+ \$0002 | PFS:Write document Program Specific                      |
| \$16+ \$0003 | PFS:Graph document Program Specific                      |
| \$16+ \$0004 | PFS:Plan document Program Specific                       |
| \$16+ \$0016 | PFS internal data Program Specific                       |
| \$19*        | AppleWorks Data Base Upper-/lowercase in name 09/89      |
| \$1A*        | AppleWorks Word Processor Upper-/lowercase in name 09/89 |
| \$1B*        | AppleWorks Spreadsheet Upper-/lowercase in name 09/89    |
| \$20+        | Desktop Manager document                                 |
| \$29+        | Apple /// SOS Dictionary                                 |
| \$2A+        | Apple II Source Code Specific                            |
| \$2B+        | Apple II Object Code Application Specific                |
| \$2C+        | Apple II Interpreted Code Application Specific           |
| \$2D+        | Apple II Language Data Application Specific              |
| \$42*        | File Type Names Search order 07/89                       |
| \$50*        | Apple IIGS Word Processor                                |
| \$50+ \$8001 | DeluxeWrite document Application Specific                |
| \$50+ \$8010 | AppleWorks GS                                            |

# APPLEWORKS

By Claris Corporation

*Reviewed by Robert Brown.*

**For a while now, there have been new AppleWorks programs brought out for the GS computers but none that will run on the Apple ][e's and Apple ][c's.**

**After a year and a half wait, Claris finally introduced the new version of Appleworks for the ][e's and ][c's.**

Although it is still largely an in house development of Apple's, there are some familiar names that pop up now and again renowned for their work with Beagle Brothers and while using Appleworks 3.0, you notice some nice additions, one which comes to mind is that of pressing RESET. Now, you don't loose your work, you just pop back to the main menu.

Basically Appleworks 3.0 is the same as Appleworks 2.1 with some exceptional nice features. It now incorporates preloading of a Ramdisk that is not just Apple's. Ramcards such as Applied Engineering's Ramfactor and Ramworks are now recognised. There is no preloading of any ramdrive or configuration software, Appleworks 3.0 will automatically find the ram, then configure itself to the available ram. In the case of a one megabyte board, you will end up with a desktop of around 690 to 720 kilobytes. Other main features incorporated into Appleworks 3.0 is a Spelling Checker. If anyone uses or has seen the Timeout Spelling Checker, then will instantly recognise this spelling checker.

The Database looks the same on the outside but inside it has changed. In the older versions of Appleworks, when not zoomed in, you could only see the fields or categories that were on the screen. The new version will scroll left or right allowing the user to view all of the categories defined. Title highlighting and highlighting of category names is another added feature. You can now sort on multiple categories, and find on just one. Remember when you had a Report Layout and wanted

to transfer it to a Record Layout and you couldn't. Well Appleworks 3.0 will let you do transport a Report Layout to a Record Layout or Vice Versa.

The Spreadsheet is much the same as the Database with little to see on the outside but wait to you see the inside. There are now 26 new functions including @ACOS, @ASIN, @ATAN, @EXP, @LN, @LOG, @MOD, @DEG, @RAD, @PI, @IRR (Internal Rate Of Revenue), @FV (Future Value), @PV (Present Value), @TERM, @PMT, @RATE, @FALSE, @TRUE, @NOT, @ISBLANK, @ISERROR, and @ISNA with the ability of the formulas to use either a LABEL or a VALUE. An example could be @IF(A6<56,"Working","Retired"). Depending on the value in A6, Appleworks would display either WORKING or RETIRED. It's copy and move features have been changed slightly and you now have the

ability of copying or moving not just rows or columns, but blocks as well.

The Word Processor has slightly changed. It now has a new looking tab line, with REAL tabs such as left, right, centre or decimal. It has more commands when adding printing commands to your document. There are now some formatting shortcut keys (Macros, but not in the real sense), and as mentioned before, a Spelling Checker with "context" and "list" modes, as well as a summary that can go to the printer, screen or into your file that you are working on.

Remember the time that you wanted to transfer some info from one module such as the Spreadsheet to another such as the Database through the CLIPBOARD. It was a hassle. You had to print it to the clipboard, you just couldn't move it. Now with Appleworks 3.0, you can MOVE it to the clipboard, then change to the other module and move it from the clipboard to that file you are using.

Other small enhancements include an unlimited clipboard (lines in clipboard and according to how much available memory), enormous files on machines with 256K or greater (9999 spreadsheet rows, 16,000+ database records or word processor lines), improved ASCII import/export handling, and last but not least subdirectory navigation

(which unless you don't read the manual and know how to use subdirectories you won't get very far. If you are like me and have four drives plus a Ramdrive, you cannot pick where you want to go looking for a subdirectory. Apple-

works 3.0 looks for you and it usually starts at the drive least to have what you want). The greatest feature that's a plus for Appleworks 3.0 is the speed of the program. Overall speed has been boosted but now the Spreadsheet flies through calculations. Most calculations will now be cut down by half.

Only a small amount of features (main ones and as much room allowed for the magazine) have been mentioned.

#### GRIPES:

- Since there are now six sides to Appleworks 3.0, unless you have a 3.5" drive or hard disk, disk swapping is heavy and tiresome.
- There are a lot of additions in Appleworks 3.0 so where do they fit into the machine? In the 10K you lose from the desktop. On a 128K machine you are left with 46K to lay with. Machines with large memory don't need to worry.
- COMPATIBILITY - Appleworks 3.0 will read files made on older versions and vice versa UNLESS you use Appleworks 3.0's new features such as the Word Processor tabs, or the Spreadsheet's new formulas. Then the older versions of Appleworks won't be able to read the files.
- There is no way you can tell Appleworks 3.0 where the Spelling Checker can be found. For instance, if you put the Spelling Checker into a Ram Disk, when you call up the Spelling Checker, the one from the Appleworks disk in a physical drive will be read, and not the Ram Drive file.
- Appleworks 3.0 will recognise all PRODOS clocks, but will not display it onscreen.
- If you have early versions of Timeout other than Version 3, then you will not be able to use the Timeout at all.

**PROGRAM COURTESY OF  
DATAFLOW, SYDNEY PHONE  
(02) 331-6153. 🍏**

# Street Sports Soccer

A review  
By Grant Kwai

The local bunch of kids are out and its time for that long awaited soccer match! Choose your team from a group of 8 players. All have there own special characteristics; some are top goal shooters, others are good goal keepers. There are 5 male and 3 female players and any combination can win.

This fast moving arcade style game can be played by you matching your wits and skills against the computer, or against a friend in a 2 player match. For first time players, there is a beginners level, and intermediate and finally, the difficult level.

You have a team of three players. You can either choose a preset team, create your own teams or let the computer pick 2 teams at random. You are then faced with the option of which field you want to play on. Do you want to play on the streets or on the park field? Beware of all the obstacles on the street though!

The game can end after a certain amount of time which you set, or if you hate playing to a time limit, you can play to a certain goal score is reached( 20 goal maximum). After that menu, it's on with the game!

You control one of the players with either the joystick or the keyboard controls. The player you have control of appears with a white shirt on to distinguish it from the other players. Like in real soccer, you can pass, dribble, take shots at goal, steal the ball

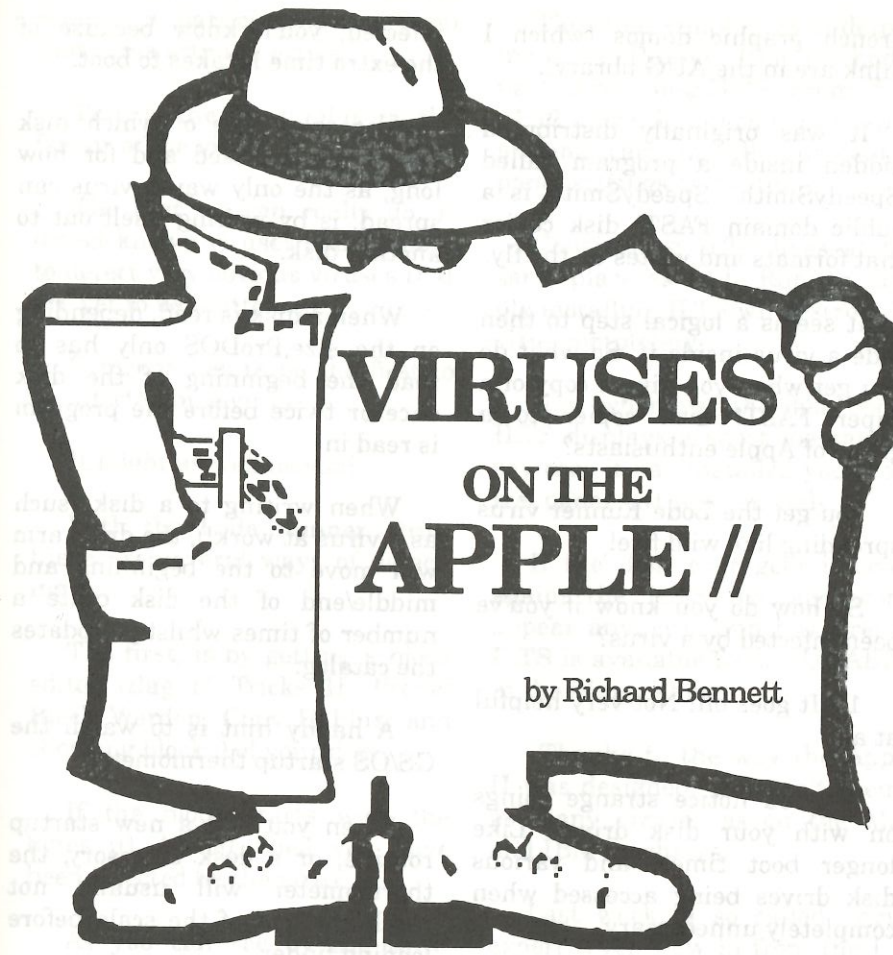
and even do headers. You can allow your goalie to run as well to create a 3 on 2 encounter but beware, if the opposition gain possession of the ball, they you have an open goal!

The double hires graphics are excellent and provide a free flowing game. The manual is only a few pages. It provides information about the controls, a statistics file on each of the eight players, techniques of play and also the rules. The package includes 1 program disk, 1 manual, 1 warranty form (Mine was for the US though), and a quick reference card.

It takes a long time to load up since it is copy protected. No back up is provided, nor an option in receiving a back-up copy. While loading, it makes the disk drive 'whirl' due to all the protection. Which makes me wonder how long my disk will last, especially with no back up.

Overall, this is a fantastic arcade game which will keep you peering into the screen for hours on end. There is little sound except for when you kick the ball and when you score a goal.

|                   |   |
|-------------------|---|
| GRAPHICS:.....    | 9 |
| SOUND:.....       | 5 |
| PLAYABILITY:..... | 8 |
| VALUE:.....       | 8 |
| OVERALL: .....    | 8 |



by Richard Bennett

Although it's better late than never, I'm going to discuss viruses on the Apple //. And since most viruses were set to go off in 1989, it's probably bad timing to now come out with an article on the subject.

The various points I'm going to raise are collectively from personal experience, a virus warning note from Big Red Computer Club, and a talk/discussion I gave at a recent IIgs SIG meeting.

My main emphasis will be on a virus called 'Lode Runner', which went off in October 1989.

Apart from the fact that it's already gone off, it's probably the best example of how a virus would infect an Apple II.

Lode Runner sits (or sat) on the boot blocks of a ProDOS disk.

When the disk is booted, it installs itself into memory and infects every other disk that is booted.

It does this by hooking into the \_BootInit code in the ROM,

through the Memory Manager Tool Pointer Table.

Hence it is a IIgs only virus.

The beauty of this, is that it's undetectable while it's going about it's business, and an open-apple-reset won't disturb it in the slightest.

It takes about a quarter of a second to infect each disk, and it is done whilst the disk is actually booting.

Before you know it, you could have infected disks all over the place.

The only way to stop it, is by turning the computer off, or by doing a self-test (option-open-apple-reset).

Another well known virus, which came out well before Lode Runner, was called 'Festering Hate', and spread by attaching itself to .SYSTEM files while they were being run.

This virus worked on all Apple IIs, but was easier to find, since the virus would copy itself to every disk it could find when it was activated.

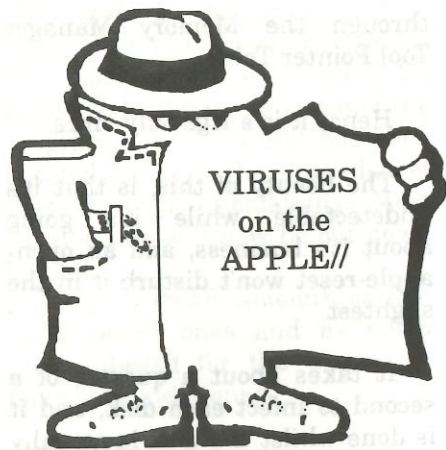
Any program that boots up and accesses all your disk drives one at a time, and spends a couple of seconds on each, is surely suspect!

At this stage, I am yet to see this virus, and actually doubt that it made it into Australia. [These Americans!]

The final one I'm going to mention is one called FONT.BUILD.

It sits in the SYSTEM.SETUP directory of a ProDOS disk, and hooks itself into the IIgs system loader.

Whenever a program is loaded, the virus writes itself out to any



disk it can find with another SYSTEM.SETUP directory.

Once again, it's detectable because of all the drives being accessed, but considering GS/OS has a general practice of doing this (especially on the new CMS hard disk ROMS!), most people don't suspect a thing.

After all, it could be Finder simply saving off those annoying Finder droppings!

### When a virus "goes off", you'll know about it!

The usual method is to erase your catalog for you, or some other destructive technique. But by being careful in the first place, you'll be lucky enough never to see one "go off".

And one more thing, don't be dazzled by the pretty screens and neat displays that viruses generate, as these are all tricks to take your attention away from what they're really doing, and that's destroying your programs and data!

The Lode Runner virus was written in France. Most probably by friends of the guys who wrote Nucleus and the various other

French graphic demos (which I think are in the AUG library).

It was originally distributed hidden inside a program called 'SpeedySmith'. SpeedySmith is a public domain FAST! disk copier that formats and writes on the fly.

It seems a logical step to then hide a virus inside it. So what do you get when you give a copy of a super FAST! disk copier to a group of Apple enthusiasts?

You get the Lode Runner virus spreading like wild fire!

So how do you know if you've been infected by a virus?

1 - It goes off! Not very helpful at all.

2 - You notice strange goings on with your disk drives. Like longer boot times, and various disk drives being accessed when completely unnecessary.

3 - You actually look for one, and find it!

The first is a sure fire method of finding a virus.

Unfortunately, it's not very helpful apart from letting you know that you're about to spend your weekend reconstructing all your disks again.

The third method is the preferred one, and I'll talk about that a bit later.

The second method is the most important. Most people ignore the early warning signs of a virus, even when they're completely obvious.

You should take note of (roughly) how long it takes to boot a program.

This means that if you are

infected, you'll know because of the extra time it takes to boot.

Also take note of which disk drives are accessed and for how long, as the only way a virus can spread, is by writing itself out to another disk.

When a disk is read, depending on the size, ProDOS only has to read the beginning of the disk once or twice before the program is read in.

When writing to a disk (such as a virus at work!), the drive arm will move to the beginning and middle/end of the disk quite a number of times whilst it updates the catalog.

A handy hint is to watch the GS/OS startup thermometer.

When you add a new startup routine, or a desk accessory, the thermometer will usually not reach the end of the scale before loading finder.

Subsequent boots however will be ok, as the correct timing for the startup has by then been calculated. If a virus writes itself out to GS/OS in some way, the thermometer will obviously change it's length the first time after the virus has infected the disk.

Actually looking for, and finding, a virus can be quite involved. If you know you've been infected, then you'll obviously know roughly where to look.

If you don't know where, then you'll basically have to check your entire system.

It seems logical that if a particular method of implementing a virus has been worked out, then there would either be a virus detector or an actual virus to take on the method. It therefore seems unlikely that virus detectors can

predict how to detect and/or remove a particular virus until that virus actually exists.

This is the main plus in the favour of the virus.

The best we can really do, is detect known viruses and attempt to detect very obvious viruses that are yet to be written. i.e.

Someone has to be the first to be infected by a virus.

It might as well be you!

With the Lode Runner virus, there are several ways of detecting it.

The first, is by getting a block editor (Bag of Tricks II, ProSel Block Warden, Copy II Plus) and checking block 0 of your disk.

If the block starts with the bytes 01 A9 50, then you have been infected by the virus.

As you can see by the third byte, Lode Runner will only infect disks in slot 5.

This rules out 5.25" drives and hard drives.

Another way of checking for the virus is as follows, and our thanks to the Big Red Computer Club for this method:

Get your original Space Quest I disk (that has probably ruled most people out), and write protect it.

Now boot each disk you suspect as being infected, and boot Space Quest after each of them.

If Space Quest bombs with an error #206 instead of getting to the joystick centering routine, then the last disk you booted was infected.

The other simple way of detecting Lode Runner (the method I use), is by using ILTS. From ILTS v1.12 upward, you can set it up to automatically install your control panel settings on bootup.

Considering ILTS lives at the same place as Lode Runner, simply installing ILTS will destroy the virus completely.

Now whenever the disk boots, ILTS displays a short message to say that it has installed your control panel settings correctly.

If the disk ever gets infected again, the ILTS message won't appear anymore, and hey Presto! ILTS is available from AUGABBS in the filing cabinet.

Thanks to the way the Apple II was designed, we aren't seeing as many viruses as on the Mac and IBM machines.

Last week, a so called "virus expert" even flew in from the UK to give some lectures on viruses.

We can probably therefore think ourselves lucky that we own Apples and not IBMs!

Although there are no laws yet governing computer viruses, there are several cases ready to stand trial in 1990.

Most notably, the case of a Swinburne Institute student who tried to infect their PC network.

Ignoring the legal and moral arguments involved, the facts remain the same; If you are sensible about using public domain and/or (dare I say it) pirated software, then chances are you won't have any problems.

If you only use software that you've bought from a computer

store (i.e. not public domain, shareware, freeware, or pirated), then you have no need to worry at all.

Of course if you are infected, let someone in the club know about it.

By simply being aware that it exists, a detector can then be written to destroy the virus.

If you want to contact me, I am user #19 on AUGABBS.

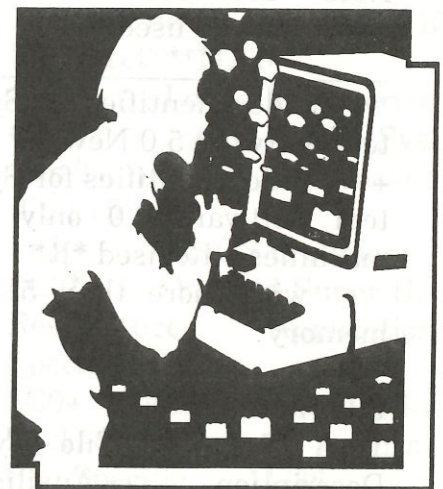
Various virus detectors are available from AUGABBS as well as ILTS, and I think they're also in the AUG disk library.

The SpeedySmith that I have (version 2.1) is clean, and I think this is the one that the club has in the library also, so that is ok to use.

### But be careful...

Isn't a virus detector or copy program the best way to distribute a virus?!

*Sub-Editor's note: A virus can NOT be transmitted to a disk that is write-protected!*



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 \$0B+ Apple /// Word Processor  
 \$0C+ Apple /// SOS System  
 \$0F\* Folder  
 \$10+ Apple /// RPS data  
 \$11+ Apple /// RPS index  
 \$12+ Apple /// AppleFile discard  
 \$13+ Apple /// AppleFile model  
 \$14+ Apple /// AppleFile report format  
 \$15+ Apple /// screen library  
 \$16+ PFS document  
 \$16+ \$0001 PFS:File docu-

ment Program Specific  
 \$16+ \$0002 PFS:Write document Program Specific  
 \$16+ \$0003 PFS:Graph document Program Specific  
 \$16+ \$0004 PFS:Plan document Program Specific  
 \$16+ \$0016 PFS internal data Program Specific  
 \$19\* AppleWorks Data Base Upper/lowercase in name 09/89  
 \$1A\* AppleWorks Word Processor Upper/lowercase in name 09/89  
 \$1B\* AppleWorks Spreadsheet Upper/lowercase in name 09/89  
 \$20+ Desktop Manager document  
 \$29+ Apple /// SOS Dictionary  
 \$2A+ Apple II Source Code Specific  
 \$2B+ Apple II Object Code Specific  
 \$2C+ Apple II Interpreted Code Specific  
 \$2D+ Apple II Language Data Application Specific  
 \$42\* File Type Names Search order 07/89  
 \$50\* Apple IIGS Word Processor  
 \$50+ \$8001 DeluxeWriter document Application Specific  
 \$50+ \$8010 AppleWorks GS

Word Processor Application Specific  
 \$51\* Apple IIGS Spreadsheet  
 \$51+ \$8010 AppleWorks GS Spreadsheet Application Specific  
 \$52\* Apple IIGS Data Base  
 \$52+ \$8010 AppleWorks GS Data Base Application Specific  
 \$52+ \$8011 AppleWorks GS DB Template Application Specific  
 \$53\* Drawing  
 \$53+ \$8010 AppleWorks GS Graphics Application Specific  
 \$54\* Desktop Publishing  
 \$54+ \$8010 AppleWorks GS Page Layout Application Specific  
 \$54+ \$DD3E Medley document Application Specific 05/89  
 \$55\* Hypermedia Application Specific  
 \$55+ \$8001 Tutor-Tech document Application Specific  
 \$55+ \$8002 HyperStudio document Application Specific  
 \$56\* Educational Data Application Specific  
 \$56+ \$8001 Tutor-Tech Scores Application Specific  
 \$57\* Stationery  
 \$58\* Help File  
 \$59\* Communications File Application Specific  
 \$59+ \$8010 AppleWorks GS Communications Applica-

tion Specific  
 \$5A\* Configuration file Application Specific  
 \$5A+ \$8001 Master Tracks Jr. preferences  
 \$5A+ \$8010 AppleWorks GS configuration Application Specific  
 \$5B\* Animation file  
 \$5B+ \$8001 Cartooners movie Application Specific  
 \$5B+ \$8002 Cartooners actors Application Specific  
 \$6B+ PC Transporter BIOS  
 \$6D+ PC Transporter driver  
 \$6E+ PC Transporter pre-boot  
 \$6F+ PC Transporter volume  
 \$A0\* WordPerfect document WordPerfect 01/89  
 \$AB+ Apple IIGS BASIC program  
 \$AC+ Apple IIGS BASIC TDF  
 \$AD+ Apple IIGS BASIC data  
 \$B0\* Apple IIGS source code APW Language type  
 \$B0+ \$0001 APW Text file  
 \$B0+ \$0003 APW 65816 Assembly source code  
 \$B0+ \$0005 ORCA/Pascal source code  
 \$B0+ \$0006 APW command file  
 \$B0+ \$0008 ORCA/C source code  
 \$B0+ \$0009 APW Linker command file

\$B0+ \$000A APW C source code  
 \$B0+ \$000C ORCA/Desktop command file  
 \$B0+ \$0015 APW Rez source file  
 \$B0+ \$001E TML Pascal source code  
 \$B1\* Apple IIGS object code  
 \$B2\* Apple IIGS Library file  
 \$B3\* GS/OS application 09/89  
 \$B4\* GS/OS Run-Time Library  
 \$B5\* GS/OS Shell application 09/89  
 \$B6\* Permanent initialization file Not loaded if bit 15 set  
 \$B7\* Temporary initialization file Not loaded if bit 15 set  
 \$B8\* New desk accessory Not loaded if bit 15 set  
 \$B9\* Classic desk accessory Not loaded if bit 15 set  
 \$BA\* Tool  
 \$BB\* Apple IIGS Device Driver File Not loaded if bit 15 set\*\*\*11/89  
 \$BC\* Load file (generic)  
 \$BD\* GS/OS File System Translator Not loaded if bit 15 set  
 \$BF+ GS/OS document  
 \$C0\* Packed Super Hi-Res picture Application Specific  
 \$C0+ \$0000 Paintworks Packed picture Application Specific 11/88  
 \$C0+ \$0001 Packed Super Hi-Res Image Applica

tion Specific 11/88  
 \$C0+ \$0002 Apple Preferred Format picture Application Specific 11/88  
 \$C0+ \$0003 Packed QuickDraw II PICT file Application Specific 11/88  
 \$C1\* Super Hi-Res picture Application Specific 11/88  
 \$C1+ \$0000 Super Hi-Res Screen image Application Specific 11/88  
 \$C1+ \$0001 QuickDraw PICT file Application Specific 11/88  
 \$C2+ Paintworks animation Application Specific  
 \$C3+ Paintworks palette Application Specific  
 \$C5\* Object-oriented graphics Application Specific  
 \$C5+ \$8000 Draw Plus document Application Specific  
 \$C5+ \$C000 DYOH: Architecture document Application Specific  
 \$C5+ \$C001 DYOH pre-drawn objects Application Specific  
 \$C5+ \$C002 DYOH custom objects Application Specific  
 \$C5+ \$C003 DYOH clipboard Application Specific  
 \$C5+ \$C006 DYOH: Landscape Document Application Specific  
 \$C7\* Control Panel document Not loaded if bit 15 set 09/89  
 \$C8\* Font

\$C8 \$0000 Font (Standard QuickDraw II Font) Reserved 01/89  
 \$C9\* Finder data  
 \$CA\* Icons 07/89  
 \$D5\* Music sequence Application Specific  
 \$D5+ \$0000 Music Construction Set song Application Specific  
 \$D5+ \$8002 Diversi-Tune sequence Application Specific  
 \$D6\* Instrument Application Specific  
 \$D6+ \$0000 Music Construction Set inst. Application Specific  
 \$D6+ \$8002 Diversi-Tune instrument Application Specific  
 \$D7\* MIDI data Application Specific  
 \$D7+ \$0000 MIDI standard data Application Specific  
 \$D8\* Sampled sound Application Specific  
 \$D8+ \$0000 Audio IFF document Application Specific 03/89  
 \$D8+ \$0001 Compressed sound Application Specific  
 \$D8+ \$0002 ASIF instrument Application Specific 03/89  
 \$D8+ \$8001 HyperStudio sound Application Specific  
 \$DB\* DB Master document Application Specific  
 \$DB+ \$0001 DB Master document Application Specific  
 \$E0\* Archival library Application Specific  
 \$E0+ \$0000 ALU library

Carolina System Software  
 \$E0 \$0001 AppleSingle File Application Specific 03/89  
 \$E0 \$0002 AppleDouble Header File Application Specific 03/89  
 \$E0 \$0003 AppleDouble Data File Application Specific 03/89  
 \$E0 \$8000 Binary II File Application Specific 07/89  
 \$E0+ \$8001 AppleLink ACU document Application Specific  
 \$E0+ \$8002 ShrinkIt (NuFX) document Application Specific 07/89  
 \$E2\* AppleTalk data  
 \$EF+ Pascal area  
 \$F0+ BASIC command  
 \$F1\* User #1  
 \$F2\* User #2  
 \$F3\* User #3  
 \$F4\* User #4  
 \$F5\* User #5  
 \$F6\* User #6  
 \$F7\* User #7  
 \$F8\* User #8  
 \$F9\* GS/OS System file  
 \$FA+ Integer BASIC program  
 \$FB+ Integer BASIC variables  
 \$FC\* AppleSoft BASIC program  
 \$FD\* AppleSoft BASIC variables  
 \$FE+ Relocatable code  
 \$FF\* ProDOS 8 application



# DYNAMIC UPDATE OF CLASSIC DESK ACCESSORIES

by Richard Bennett

If you've ever written a CDA, you'll know how frustrating it is to reboot after each assembly, just to test the darn thing.

If the CDA gets fairly big, development starts to slow down quite considerably. What is needed, is a way to re-install CDAs dynamically. Also, considering that it's a CDA, you could then test, debug, and re-assemble the entire thing without ever leaving the assembler.

There are currently NDAs available to re-install NDAs, but nothing for CDAs. With the release of System 5.0 however, the job of dynamic re-installs becomes fairly easy.

First off, we have to consider a few posing questions;

- 1 - How do we invoke the re-install?
  - 2 - What tools and environment are necessary for the re-install?
  - 3 - How do we perform the re-install?
- The first is easy.

Simply install an option into the CDA to re-install itself. When that option is selected, the CDA should reload itself from disk, install it into the CDA menu, and remove the current entry.

For the second, we'll obviously require GS/OS, and the Desk Manager to perform the CDA manipulations. We may also need the Memory Manager, and obviously the System Loader.

How do we do it?

There are a few problems here. The first, is that we have no idea who we are, pathname wise.

This is where the System Loader comes in handy, as the tool call `_LGetPathname2` will return a GS/OS pathname when supplied with the UserID (`_LGetPathname` will also do, but will only return a class 0 string pathname).

This is great, but how do we get the UserID?

The original UserID that the System Loader used to load the CDA, is unknown to the CDA at the moment, but the easiest way to get it is as follows;

```
FindMyUserID PHA          ;Push some space
PHA
PushLong #FindMyUserID ;Push my address on the stack
_FindHandle          ;Find my handle (allocated by the
                    ;System Loader on bootup)
PullLong 0           ;Retrieve my handle
LDY #6              ;Offset in HandleRec of UserID
LDA [0],Y           ;Get my UserID
STA MyID
RTS
```

This is necessary, as all memory allocations the CDA does, are allocated by the UserID obtained from the startup. eg. if your CDA requires a UserID to allocate memory, you should do the following;

```
GetNewUserID PHA          ;Push some space
_MMStartup          ;Get a new Master ID
PLA                ;Retrieve it
STA UserID         ;Save it
ORA #$100          ;Make a new Aux ID
STA AllocID        ;Use it for allocating memory
RTS
```

Now, we've got the UserID, all we need now is the pathname;

```
FindMyPath PHA          ;Some space
PHA
PEI MyID           ;First parameter is UserID to find
PEA 0              ;Next is the segment number
_LGetPathname2
PullLong PathAdr   ;Retrieve the address of the path
RTS
```

Ok, now to load the file.

To do this, we call `_InitialLoad2`, which loads the file and returns with it's address, which we can find the handle for, and use it to install it in the CDA menu by using `_InstallCDA`.

The next step, is to discard myself. To start off, we should dispose of any memory we've allocated privately.

Now, the hard part is to dispose of myself, delete my UserID, discard my entry in the System Loader pathname table, and either return to the CDA menu, or call the new CDA directly (we have the pointer to it remember!).

The call to do all this, is `_UserShutdown`.

The Memory Manager won't move or purge any memory if the system is currently running under an interrupt request.

This includes the Desk Accessory menu so theoretically, we can simply dispose of ourself, and THEN either return, or call the new CDA.

Unfortunately, it isn't that simple.

If, in future versions of the system software, the `_UserShutdown` call decides to allocate any memory (for work areas such as re-building the pathname table, or the Memory Manager re-building the UserID list), and the CDA memory was already purged, and memory is almost full, the allocations it makes could overwrite where I was calling from.

When the System Loader returns, I may not necessarily be still there!

Also, executing code from a purged memory segment isn't very clever programming.

A way around this, is to call

`_UserShutdown` from somewhere in bank 0 (say at 00/0200) where the Memory Manager can't touch you, or simply play the odds (like I

do) that the above will never happen (after all, it's only a debugging feature that'll be removed when you've finished writing it!).

### So, to summarize, these are the steps to follow:

- 1 - Get the UserID that the CDA was loaded with (`_FindHandle`).
- 2 - Get my pathname from the System Loader (`_LGetpathname2`).
- 3 - Call `_InitialLoad2` to load myself from disk.
- 4 - Install it into the CDA menu (`_InstallCDA`).
- 5 - Remove myself from the CDA menu (`_RemoveCDA`).
- 6 - Dispose all of the memory that I've allocated privately.
- 7 - Call `_UserShutdown` to dispose of everything, and optionally call the new CDA.

The entire code (in Merlin format, WITHOUT supermacros) follows;

```
ReloadCDA PHA ;Find me PHA
          PushLong #*
          _FindHandle
          PullLong MyHandle
          LDY #6
          LDA [MyHandle],Y
          STA MyID
          PHA ;Push space for _InitialLoad2
          PHA
          PHA
          PHA
          PHA
          PEA $5000 ;UserID type for loaded file
          PHA ;Push space and UserID for _LGet
          PHA
          PHA
          PEA 0 ;Segment number
          _LGetPathname2 ;Leave results on stack
          PEA $FFFF ;Don't use special memory
          PEA 1 ;Loader type 1
          _InitialLoad2 ;Load the CDA
          PLA ;Get the UserID assigned
          _FindHandle ;Address and DP/S on stack still
          _InstallCDA ;Install the CDA
          PushLong MyHandle ;Now remove myself from the menu
          _RemoveCDA
          PHA ;Space for _UserShutdown
          PEI MyID ;Shutdown who?
          PEA 0 ;Kill everything!
          _UserShutdown
          PLA ;Remove the UserID
          RTL ;Return to Desk Manager
          ;(normal CDA quit)
```

Here is the list of tool calls used;

|                             |        |                |
|-----------------------------|--------|----------------|
| <code>_FindHandle</code>    | \$1A03 | Memory Manager |
| <code>_LGetPathname2</code> | \$2211 | System Loader  |
| <code>_InitialLoad2</code>  | \$2011 | System Loader  |
| <code>_InstallCDA</code>    | \$0F05 | Desk Manager   |
| <code>_RemoveCDA</code>     | \$2105 | Desk Manager   |
| <code>_UserShutdown</code>  | \$1211 | System Loader  |

# APPLE ANNOUNCES NEW MICRO LINE

By Ken Chapman

Reprinted from Maple Orchard Vol 8, No 3; May/June 1988

**Apple Computer, Inc. recently announced the release of a completely new product line.**

**The new series of micro-computers will be based on the earlier Apple /// system, using an enhanced Motorola 65816e processor, as well as math, graphics, sound and HyperTalk co-processors.**

**The new series will have the same look and feel as the earlier Apple ///, although there will be a completely new revolutionary sound system installed at the optional discretion of the purchaser.**

Apple /// enhanced model."

Another spokesperson inside Apple Computer who wished to remain unidentified confirmed that parts and supplies for the Macintosh products have not been re-ordered, and minimum stocking levels have been considerably reduced.

"We just want to get out of that mess. We know that the new Apple ///e will be a winner. We all feel it. The excitement around here is so intense, everyone is actually running into work every morning, and the only grumbling heard around here now is at quitting time and we're ordered to leave by the armed security personnel."

Rumours of the new product line first began circulating when some third-party developers began talking about new developments they were working on. For example, Supermac Technologies is said to be ready to announce a new 150-gigabyte, 5.25" floppy drive system that just happens to fit snugly into the earlier Apple /// drive casing.

Rumours have alas leaked out of Redmond, Washington, that Microsoft is already working on a new Presentation Manager system for the Apple /// and that Excel had originally been designed to run under SOS but had to be slowed down to accommodate the Macintosh User Interface.

Bill Gates was once heard to remark to a group of IBM supporters that he only wished the new OS/2 could come close to the power and speed of "good old SOS".

Microsoft is also rumoured to be developing a speedier version of Unix for the Apple ///e, as well as Fortran, COBOL, BASIC and

"The simple fact is", says John Sculley CEO of Apple, "The Apple /// was ahead of its time. But we didn't abandon it, just as we will never abandon the Apple // series. We truly believe the Apple ///'s time has come."

Rumours that Apple Computer may be phasing out the Macintosh line are denied by Apple officials.

"However," says Jean Louis Gasee, "we simply cannot sacrifice innovation for the sake of compatibility."

"The Apple SOS environment is simply too powerful and flexible to abandon," Gasee continues, "We just never gave it a proper chance before. But some of our fellows have been continuing to work with the system, and have come up with some truly remarkable capabilities we never before dreamed were possible for a little box that sits on the top of the desk."

Del Yocam, V.P.-manufacturing, noted that it may be true that production of the Macintosh product line may have to be severely curtailed.

"We simply don't have the production capacity to handle the anticipated demand for the new

LOGO packages.

Asked if their new product developments included a Pascal compiler, Microsoft Chairman Bill Gates replied "No comment!"

Steve Jobs of NeXT Inc., when asked if there could be any substance to the reports, replied, "No comment!"

However it is known that someone in his company recently placed an order with Motorola for 1,000,000 of the new 65816e chips.

Industry analysts have responded to the news with enthusiasm.

DataQuest Research claims, if the rumours are true, Apple Computer will clearly outpace IBM in "gross sales" within six months.

Wall Street analysts, on the other hand, are more cautious. "If it's true", commented one rue savante, "there could be major upheavals in current market trends that could have far-reaching effects in the long-term outlook.

The thought of the potential market penetration is absolutely staggering. I simply cannot imagine anything of this magnitude happening in our time."

Asked if there would be a gala introduction show similar to the Mac II rollout, Scully replied, "We've invited The Woz to do this one. We feel it needs his touch to kick it off properly."

"But," Scully went on, "this does not mean that we are planning on changing advertising agencies.

We just want to do the rollout thing right, that's all"

When asked why Apple was thinking of abandoning the Macintosh, Gasse explained,

"There are two reasons, really. First of all, the Apple IIIe is unquestionably the most powerful micro system we've ever seen, anywhere.

We simply cannot ignore the obvious implications of going with it all the way.

"Secondly," he continued, "we have been listening to our cus-

tomers. They will incorporate the graphics for the GS and Music using Mini.

With the ongoing enthusiasm of the members who attended last year and any new attendees this year, we will produce a disk for our club library.

This year we will continue to demonstrate new hardware and software to our members.

tomers. They are tired of having to work with a toy. Sure, the Macintosh Users Interface was friendly and all that, but our customers just didn't feel that they were getting a real day's work done with it.

They want a computer.

They want to know they've got a computer.

Well, now they know they're going to get one. And they'll know they've got one."

It has been suggested that the new Apple IIIe will be capable of processing 500 MIPS at 75 MHz.

It has been further rumoured that Apple Computer is already working on model IIIe+ that will employ an expanded keyboard (347 keys, including function keys and 3 Command keys), and will feature the yet-to-be announced Motorola M66816e chip that will process up to 650 MIPS at 85 MHz.

**CAMERONS GAMES CORNER** will continue to dazzle everyone and is continued this year due to "HEAVY" requests.

Our meetings are bright, friendly, informative and we are ALWAYS on the lookout for NEW MEMBERS.

Why not come along to our next meeting make some new friends and be part of the fun.

## Apple // Technical Notes

Developer Technical Support  
Apple IIGS

#53: Desk Accessories and Tools

Revised by: Dave Lyons November 1989

Written by: Matt Deatherage & Jim Mensch March 1989

This Technical Note describes new guidelines for developers to help applications and desk accessories live together in the same system at the same time.

Changes since March 1989: Added additional discussion and minor revisions; corrected tool set numbers for Event Manager and QuickDraw Auxiliary.

Desk accessories vary widely in complexity.

Classic Desk Accessories (CDAs) range from simple status-reporting programs to complete system level debugging utilities, and similarly,

New Desk Accessories (NDAs) range from static windows with pictures to nearly full-fledged applications.

This Note presents some new guidelines aimed at helping developers of both applications and desk accessories to get their products to work together now and in the future.

### Tool Sets

The greatest conflict between applications and desk accessories, especially NDAs, is the use of system tool sets.

The Apple IIGS Toolbox Reference, Volume 1, defines which tools are available for use by NDAs.

The Desk Manager requires

starting the following tool sets before calling FixAppleMenu (which installs the names of the NDAs in the Apple menu):

Tool Locator (#1)  
Memory Manager (#2)  
Miscellaneous Tools (#3)  
QuickDraw II (#4)  
Event Manager (#6)  
Window Manager (#14)  
Menu Manager (#15)  
Control Manager (#16)  
LineEdit (#20)  
Dialog Manager (#21)  
Scrap Manager (#22)

Since the Desk Manager requires starting these tools before calling FixAppleMenu, NDAs may assume that these tools are all present and running, so they do not need to check for their presence.

In addition to these requirements by the Desk Manager, Apple strongly recommends that all applications start the following tools:

QuickDraw Auxiliary (#18)  
Font Manager (#27)

These two additional tools are so widely used by desk accessories that they should be present.

NDAs may not assume their presence, but it is reasonable to write an NDA that checks for them, with the assumption that they will usually turn out to be available.

## Golden NDA Guideline

Developers who wish to maintain maximum compatibility between their NDAs and applications, both now and in the future, should consider every environment change they make with the following Golden NDA Guideline firmly in mind:

"I, an NDA, pledge not to alter the environment of the application under which I run, and I will behave in such a way that the application runs the same whether I am present or not."

Of course, this guideline does not include such necessary tasks as the normal (and reasonable) allocation of memory.

An application must be prepared to handle a memory allocation call by a desk accessory, operating system, or even a tool at unexpected times.

The guideline does, however, mean that your desk accessory cannot change the operating environment, including such things as the presence of tools and operating system parameters.

The following sections detail some of the most important ways to follow the Golden NDA Guideline.

### D/A Guidelines

#### Extra Tools

o If an NDA needs to use a tool which is not guaranteed to be available (e.g. Standard File), it should check to see if the tool is already running.

If it is not running, the NDA must use LoadOneTool to load it, then it must start the tool before using it.

When finished with the tool, the NDA must shut it down and

# GS SIG

We will soon start discussing our projects for the year.

unload it with UnloadOneTool. (A tool is already running if its xxxS-status function returns TRUE and no error.)

- o If an NDA needs to start up a tool and keep it started while letting the application continue to run, things quickly get complicated.

The Golden NDA Guideline shows why this is true.

If your NDA starts a tool which the application is going to use but has not yet started (i.e., the Font Manager), and your NDA does not shut it down before the application regains control, the application will (in this example) get error \$1B01 (Font Manager Already Started) when it makes an FMStartUp call.

Many applications stop gracefully on getting a tool startup error.

In this case, the Golden NDA Guideline means that an application must not be forced to check the status of a tool which it has not started.

Applications are not required to do so, and most of them do not.

A previous version of this Note advised NDAs to start up and shut down tools when their windows were activated and deactivated.

This approach isn't strong enough to solve all the problems, since the application may decide to start up tools based on menu items (which can still be selected while an NDA window is in front).

The only completely safe way to use a tool that isn't already running is to start it, use it, and shut it back down without ever returning control to the application while the tool set is started.

Starting QuickDraw Auxiliary when the application has not started can get you into a lot of trouble: an application that correctly implements 320/640 mode switching will call QDShutDown and QDStartUp.

QuickDraw Auxiliary depends heavily on QuickDraw, and restarting QuickDraw while QuickDraw Auxiliary is active will easily toast you.

- o If your NDA allocates bank-zero work area space for tool sets, be sure to dispose of it at DeskShutDown time (when your DAInit entry is called for shut-down).

If you don't, the system will die with error \$0201 when trying to launch a ProDOS 8 application, since GS/OS needs all of banks 0 and 1 to start ProDOS 8.

- o Sound tools provide the one exception to the rule of freely using a tool which is already started. Refer to the section on System Parameters for more details on using sound tools.

- o NDAs must not shut down tools which they have not started.

- o CDAs are nearly always modal, but by using the HeartBeat interrupt queue or other mechanisms, they can get control when the user is no longer "in" the CDA.

The list of guaranteed tools for NDAs does not apply to CDAs, and CDAs must be prepared to deal with the ProDOS 8 environment as well as GS/OS.

#### System Parameters

- o A desk accessory (CDA or NDA) must not change a system resource or parameter which cannot be restored to its original condition.

A trivial, but illustrative, example of this is the number of times a pull-down menu item blinks when you select it.

This number (three by default) may be changed with the SetMIItemBlink call, but there is no corresponding GetMIItemBlink call, so you cannot retrieve the current value.

Therefore, a desk accessory must not change this parameter, and the same rule applies to any other system parameter for which you cannot determine a current value.

- o This idea extends to calling tool startup functions.

Even though a tool's startup function may not return an error when the tool is already active, the startup function could reset certain parameters upon which the application depends.

An example of this is TLStartUp for the Tool Locator. A seemingly innocuous call, TLStartUp actually disconnects any user tool sets present, which, in this case, would most likely have been installed by the current application. CDAs and NDAs must never call TLStartUp or TLShutDown.

A desk accessory should not call any tool's startup function if the tool is already active.

The one exception to this rule is the Memory Manager's MMStartUp call, which a desk accessory may make to obtain its User ID. Think of MMStartUp as a "GetMyID" call.

- o A desk accessory cannot use any of the sound tools if they are already started.

This is contrary to the rule for other tool sets, but it is required because there is no memory management of the sound RAM (or

"DOC RAM").

If the Sound Tools (#8) are started, the application has exclusive control of the 64K DOC RAM used to play sounds.

Anything your desk accessory might put there could overwrite information the application needs.

Saving and restoring DOC RAM around desk accessory usage is not sufficient.

Many of the sound functions are interrupt driven, altering the contents of DOC RAM only during sound interrupts, so your desk accessory might attempt to replace parts of DOC RAM which are being played.

Since there is no memory management of DOC RAM, desk accessories must avoid the sound functions of the IIGS if the application is already using them.

- o A desk accessory must not install user tool sets, because there is no arbitration of user tool set numbers. User tool sets are the sole property of the current application.

#### Application Guidelines

To coexist peacefully with desk accessories, particularly NDAs, applications generally need to follow the guidelines listed in the Desk Manager chapter of the Apple IIGS Toolbox Reference, Volume 1.

However, those applications which wish to ensure maximum compatibility now and in the future will also want to adhere to the following:

- o Don't just start the Scrap Manager - use it.

Many desk accessories support cutting and pasting to exchange

text and pictures with your application, but they can do it only if you use the Scrap Manager.

If you have a need for your own private scrap internally, you should still also use the Scrap Manager to exchange text and pictures with other applications and DAs.

- o Start tools at the beginning of your application and leave them started.

Every time you call SystemTask or TaskMaster, a desk accessory may get control of the system, and if your application has shut down a tool that a desk accessory found running and is using, the DA might not be able to complete an operation.

For maximum compatibility, do not shut down any tools which were ever active when you called SystemTask or TaskMaster.

You can start more tools, but do not shut down those which are already active.

If you intend to start a tool and not keep it started, use it then shut it down immediately, being sure not to call SystemTask or TaskMaster during that time.

- o Applications should not call CloseAllNDAs while shutting down.

Since DeskShutDown closes all open NDAs anyway, it's not necessary. By not calling CloseAllNDAs, you allow the system or NDAs to tell the difference between just cleaning up and really wanting to close all the NDAs.

- o Applications should never make a Close call with reference number zero at file level zero. (If you need to use Close with reference number zero, use GetLevel and SetLevel to avoid closing files you did not open.)

- o An application with some memory to spare can save NDAs time by providing them the additional tools which they are most likely to use.

If a desk accessory needs the List Manager and your application starts it, the desk accessory will run faster since it can avoid loading and starting the tool every time it gets control.

The most common tools which desk accessories require besides those available in the standard Desk Manager set are QuickDraw Auxiliary #18, the Print Manager #19, Standard File #23, the Font Manager #27, and the List Manager #28.

QuickDraw Auxiliary and the Font Manager are especially important--not only do they work well together, but they are also widely used. In addition, FMStartUp can take a long time, and waiting for it every time you activate an NDA window can be really frustrating.

Many desk accessories also use the Print Manager, the List Manager, and Standard File, and if they are always available, desk accessories will work more smoothly with your application.

#### Further Reference:

- o Apple IIGS Toolbox Reference, Volume 1
- o Programmer's Introduction to the Apple IIGS

# TO BE OR NOT TO BE.

By Fernackerpan Googlyitis.



Welcome to what I hope will be a regular feature in each edition of "Applications". The reason for creating this layout is to keep you informed on what's going on in the Apple II World. From time to time I will grant myself license to speculate as to what may or may-not occur - hence the layout's title.

## NEW APPLE CENTRE.

A new Apple Centre has opened recently over-looking Darling Harbour. A friend of mine upon visiting there was horrified to find not a single Apple II, instead the salesman tried to flog him a Mac using a leaflet bearing not only the claim "The Mac Plus the most powerful Mac of all." but also Apple's North Ryde address. My- how far are the Macs behind.

## NEW PUBLIC DOMAIN SOFTWARE.

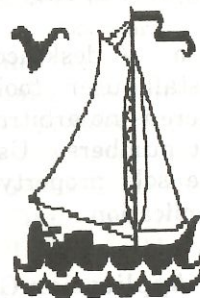
Some new P.D. software will be available this month. Among the offerings for the G.S. are Nucleus, a demonstration of just what the G.S. graphics and sound can do. There is also a neat poker game, some Music Studio songs, Jump Start (G.S. Launcher) and that all time favourite many, many more.

## DATAFLOW SALE.

Just before Christmas Dataflow had a sale. While I am sure it was a big success for that company, it was a pity that A.U.G. members were not notified of this event.

## NEW COMMERCIAL SOFTWARE.

In the last few months some interesting software has been released. This includes the latest version of "Hyper Studio", "Revolution '76" and "2088 The Cryllan Mission". Roger Wagner has sent us some demo disks of "Hyper Studio" that will be going into the library, "Real Soon Now" together with a demo of "2088 The Cryllan Mission". For those that are into role-play "2088 The Cryllan Mission", is a program that has been written exclusively for the G.S. using System 5. Your mission (should you decide to accept it) involves travelling to Cryllan in search of a lost expedition of space travellers. Spread over four disks this adventure promises many hours of enjoyment for role-playing enthusiasts. "Revolution '76" for the G.S. is a simulation of the War of Independence using colourful graphics and stimulating sound effects.



## IN THE PIPELINE.

Some new products about to be released are:  
The New Print Shop.  
Renegade.  
The Three Stooges.  
and  
Downhill challenge.

Bye for now F.P.



# Latest Revision //GS

By Andrew Roughan

The indication that the new //GS will be a winner is proven by the fact that Apple Computer staff do not as yet have one on their desks to "play with".

Frank Revill, Marketing Manager of Apple Computer Australia, remarked at a the December AUG meeting that demand for the new GS was so high that he hadn't had a chance to evaluate it himself.

A huge educational order for the new GS was placed late last year and hopes that stock would arrive before the end of the year were in vain.

Most deliveries won't be finalised before well into the start

of the new school term.

So, what is creating all the fuss?

The new Apple //GS has only a few improvements over the older model and an upgrade is not expected because it is just not feasible.

What makes it a relative bargain, though, is the price.

The new GS has been introduced at the same price as the old revision, in line with Apple's marketing strategy.

## The improvements

The new GS now comes with the standard 128k //e memory, the standard 128k GS memory and now an extra 1MB on board.

This makes the total memory available on the new system 1.25MB and alleviates the need for the memory card in a standard system.

However the memory card can still be used to take the memory total to 2MB or 8MB using a third-party card.

The new 256k version 03 ROM now contains most of the system tools, unlike the older 128k ROM version 01 which needed tools loaded into RAM taking valuable memory space.

The headphone jack on the rear of the new GS is now a stereo jack, however the output is still mono.

This means that output will be the same in both channels.

This is an improvement over the older model where the jack was mono only.

The battery now comes in a holder to allow easy battery replacement.

For the machine language buffs, STEP and TRACE commands are now included in the ROM.

This adds easier memory perusal and bug finding capabilities.

For those of you who have heard rumours about new machines and have been waiting until they appeared, this is it.

The recommended price of the //GS is \$3555 for the standard colour system comprising of the Apple //GS 1MB motherboard, keyboard, mouse, monitor, 3.5" drive and latest system software.

An order can be placed with any authorised Apple reseller.

I ordered mine just before Christmas.

How about you?

# APPLE// SOFTWARE LIBRARY NEW RELEASES

## AUG.94 Side 1

Five utility type programs -

**COLUMNIST** - Produces two columns of text from Appleworks and text files. Allows adjustment of the file for justification and evenness of the end of the page. Columnist will print the result when it has been adjusted to your requirements.

**SHRINKIT** - A file compactor to create archived files. Great for transmitting via modem (less cost).

**EXECUTIONER** - Written by Glen Bredon (Prosel, etc) this program produces an executable text file of any ProDOS file.

**CHANGE FONT TYPE** - So much for doing this through the Sector Editor, this program changes font file types from \$C8 to \$F7 and back. There are three font files on the disk to use and for practice.

**HYPER FORMAT** - Formats disks and scans for bad blocks.

## AUG.94 Side 2

Two Utility programs for

both the Apple// and the //GS.

## BINARY LIBRARY

**UTILITY (BLU)** - This program squeezes and unsqueezes file. A2-Central recently released a 3.5in disk with all the Apple Technical Documents on it. You have to unsqueeze them with BLU to read them.

**II Gif** - Allows you to view pictures in different formats and convert from one format to another.

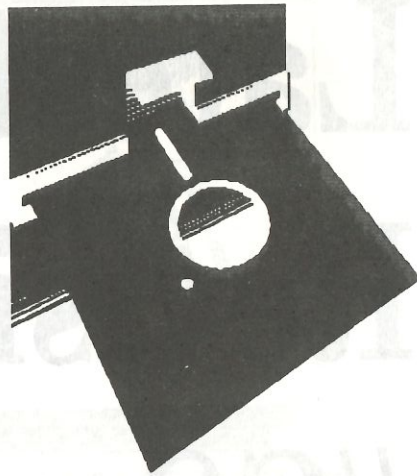
## AUG.95 Side 1

Utilities and Games - all with documentation or instructions.

**WINDOWS** - A very useful menu program. You can use this to find the bonus program DOGPAW and its documentation.

**FLIGHT SIMULATOR** - Written in BASIC this is a very simple flight simulator program. Read the documentation before you try it.

**FONTRIX TO MULTISCRIBE** - This program allows to convert some of your DOS 3.3 Fontrix Fonts to use them with Multiscribe (Beagle Write).



## AUG.95 Side 2

Utilities

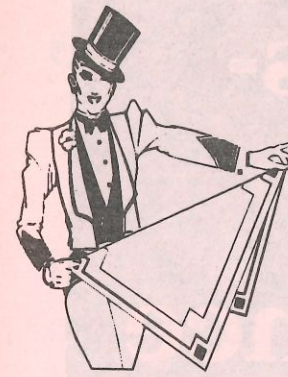
**SUPERPATCH 3.1** - All the patches you have ever wanted for Appleworks 2.0 and 2.1 - and a few more. Your copy of Appleworks can now say "Carelessly saving the file" and constantly show on the screen the number of K's available as you create and save your document.

**SMARTPORT (SCSI)** - Not real sure about this as I do not have a SCSI card. Currently it reads my 3.5in drive in slot 5 and tells me information about the readiness of that drive.

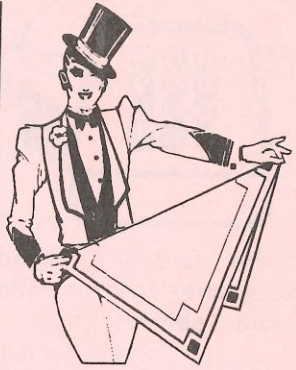
**FILE TYPE CHANGE** - Change any file file type to whatever you want - some protection for your own programs by changing your BASIC startup file to a "SYS" file.

## AUG.96 Side 1

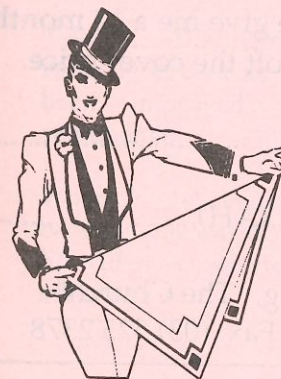
Shareware programs



# STOP PRESS

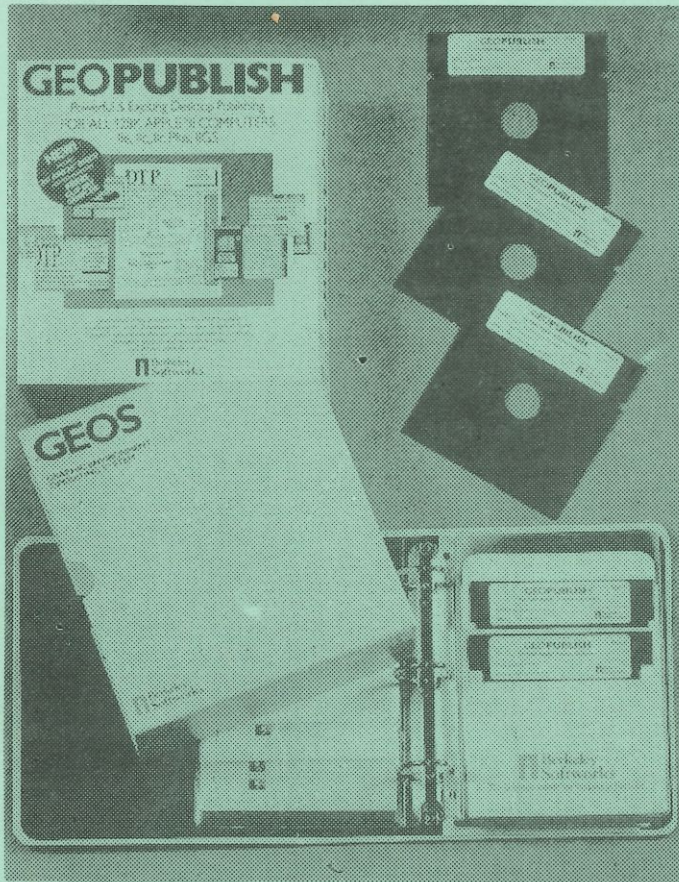


# NEWS VIEWS REVIEWS



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## GEOS

**BERKELEY SOFTWORKS**  
**APPLE 128K, YEARS 6-12**

GEOS (Graphic Environment Operating System) opens up your Apple IIe/IIc/IIgs to a new world of integrated and graphically-oriented "Mac-like" applications. The total package features four applications, three utility programs, five desk-top accessories, six fonts all controlled by the desk-top file manager.

Selecting applications, loading and saving files, printing, closing and opening new applications is made easy through an icon display, point-and-click mouse interface.

GEOS includes over 60 special features supporting four applications, GEOWRITE, word processor, GEOPAINT, paint program, GEOSPELL and GEOMERGE. Desk top accessories include Note Pad, Calculator, Alarm Clock, Photo Manager and Text Manager.

Requirements: Apple IIe/IIc/IIgs (128K), 2 drives, Apple Mouse, recommended, supports memory cards, hard disks, not copy-protected.



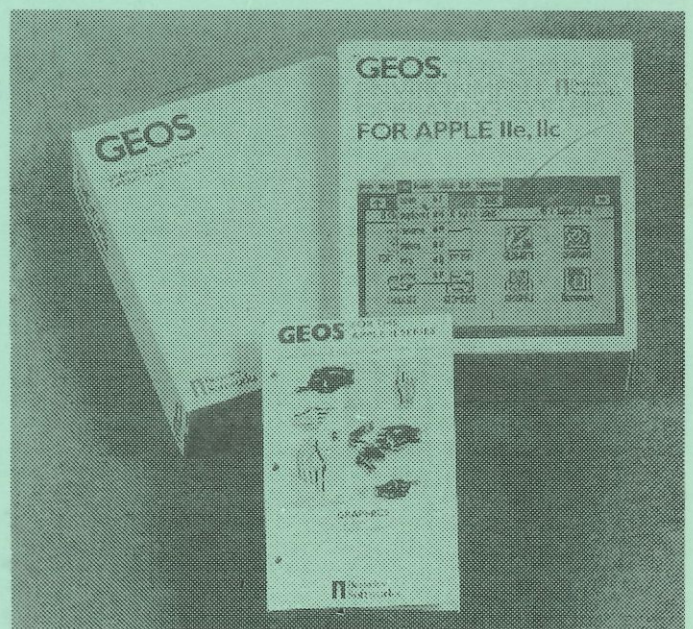
## PLUS INTERGRATION ACROSS TO:

*GeoPublish:* Powerful and exciting desk-top publishing. A full featured desk-top publisher for all Apple II computers, with object-oriented drawing tools, full-featured word processor, graphics scaling, laserwriter support, true side-ways text, plus many more features.

*GeoFile:* a presentation-oriented database and forms generator, utilising mouse point-and-click interface. Database storage up to 115 fields per file, including graphics presentation and compatibility with AppleWorks.

*GeoCalc:* A versatile worksheet program for creating spreadsheets, incorporating chart and graphing applications.

Complete specification product sheets are available for *GEOS, GEOPUBLISH, GEOFILE* and *GEOCALC*.



# Applications



## Quicken-

(A chequebook program)

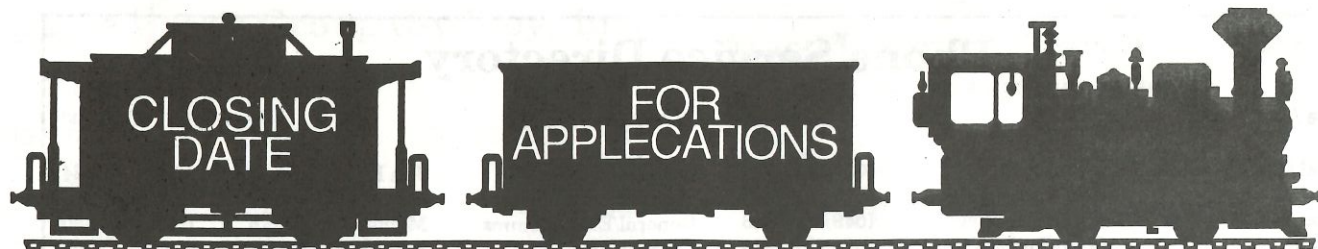
Reviewed by Hans Hoffman

RRP \$3.00

March 1990

The Publication of the  
**Apple User Group (Sydney)**

Incorporated in N.S.W.



# APPLECATIONS

## ARTICLES • REVIEWS

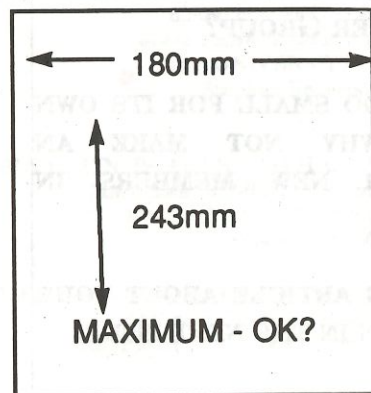
The time has come, my friends, to ask for your assistance in the submissions you make to our magazine.

The many articles and reviews we receive are greatly appreciated

**BUT I have no end of trouble with some of them!**

I am afraid I must insist that you submit your reviews etc in the following manner:-

1) MAXIMUM WIDTH OF PAGE 180MM - MAXIMUM DEPTH OF PAGE 243MM



2) DO NOT TYPE TWO RETURNS BETWEEN PARAGRAPHS. THIS IS A GOOD ONE SO I'LL SAY IT AGAIN - DO NOT TYPE TWO RETURNS BETWEEN PARAGRAPHS.

3) DO NOT FORMAT YOUR ARTICLES - WE WILL LAY IT OUT TO SUIT THE SPACE WE HAVE AVAILABLE ON OUR PAGE ETC. JUST TYPE IN WHERE YOU WANT A SCREEN DUMP OR GRAPHIC TO GO AND WE'LL DO THE REST.

4) USE TABS NOT SPACES. YOU HAVE NO IDEA WHAT YOUR SPACES DO TO YOUR ARTICLE WHEN IT'S TRANSLATED BY US ESPECIALLY IF IT HAPPENS TO BE A HYPERCARD PATCH OR SOMETHING SIMILAR!!

LET ME GIVE YOU AN EXAMPLE:- YOU TYPE THIS:-

MOVE XMOD, \*\* -> \*\* "GO NOW"  
(OR WHATEVER!)

BUT  
WHEN WE TRANSLATE IT YOUR  
TYPING LOOKS LIKE THIS

MOVE MOD

,  
\*\*  
> "GO NO W"  
THIS IS SLIGHTLY EXAGGERATED

BUT YOU GET THE DRIFT.

5) IF YOU SEND IN A PATCH - PROGRAMME OR SOMETHING THAT MUST DONE A CERTAIN WAY THEN WE INSIST ON HARD COPY.

I SAY THIS BECAUSE OF WHAT HAPPENS IN THE TRANSLATION - I COULD, QUITE BY ACCIDENT, DELETE SOMETHING FROM YOUR COPY THAT WAS VITAL TO THE SUCCESS OF THE PATCH AND CONSEQUENTLY WE'D HAVE A LOT OF VERY ANGRY LITTLE AUG MEMBERS RUNNING AROUND SCREAMING FOR BLOOD - MINE!!

LAST BUT THE MOST IMPORTANT

**THE  
CLOSING DATE  
FOR ALL FUTURE  
APPLECATIONS  
IS  
THE 10TH  
OF THE  
MONTH**

Anything submitted after the 10th will go in the next issue - sorry about that BUT that's the way it is as of NOW.

# THE APPLE IIGS AND YOU!

## The past, present and future!

*Written by Richard Bennett.*

It's almost three years since my original review article on the Apple IIGs, and almost a year since the follow up. In this the fourth year of the IIGs' commercial existence, I thought it was about time I wrote yet another follow up.

Please keep in mind, the ideas, rantings and ravings of the following text is wholly mine and is in no way related to the ideals of Apple Computer Inc.

Although I have taken great care in my research, any misleading or incorrect statements are accidental, and I therefore hold no responsibility for anything said.

### INTRODUCTION

Since the IIGs was released in September 1986 (three and a half years ago), we have seen many developments in the areas of software and hardware, each of which I will cover separately in the following sections. Other major issues to raise their heads include various debates on local software and hardware support, local developers, viruses, and above all, new machines.

### THE 1986 IIGS

When I bought my IIGs way back in 1986, I was looking forward to an all singing and

dancing super 6502 machine that ran at super speeds and could perform like a Mac (if you so wished!).

What I got in fact, was an all singing and dancing super 6502 machine that crashed at super speeds and could perform like a Mac if you could afford the software and hardware expansion costs.

Yes, the graphics were and still are incredible. Yes, the sound was and still is brilliant. Yes, the speed was very fast, although now it seems it is not fast enough. Ok, if I wanted a Mac, I'd bloody well buy one.

Compatibility was a major issue at the time, but has since disappeared. Many of the older Apple II programs simply did not work on the IIGs, or they crashed while running or while exiting the control panel. Many of the people I know (including myself), still had their //es and //cs setup next to the IIGs so they could run the stuff that didn't work. Fortunately,

ly, this is no longer a problem. Companies now make sure that their software is compatible with the IIGs, and in fact I haven't seen one non-compatible program for about two years now. (And hence my //e hasn't been powered on in just about as long)

When the IIGs was designed, the chip (65C816) could only handle a maximum speed of 2.8 Mhz. At first, this seemed to be ample. "Wow, Appleworks and Merlin run at super speed!". When desktop publishing and other Mac like applications started to appear (such as Appleworks GS - the snail), the speed problem started to rear it's ugly head. Great for Apple II users, but getting on the slow side for full Super Hires Mac type applications. Apple at that time couldn't respond, because the manufacturer of the chip (our old mate Bill Mensch) couldn't supply bulk with faster chips at a reasonable cost to the end user.

It was this toss up that unfortunately turned some IIGs users



**The Apple Users' Group (Sydney)  
will be at the PC'90 Exhibition,  
March 6th through to the 9th.**

**The exhibition is huge (two halls)!  
Come and see us at the stand enjoy all the  
excitement that these shows generate.**

**The exhibition will be held at Darling Harbour.  
Our Stand number is 1047 in Hall 4  
(near the Kiosk).**

**If you would like to help out either by  
"manning" the stand or anything else,  
contact Jan Howley  
(ah: 953-3624) before 6/3/90.**

away. Apple had to decide, and did so correctly, between two choices; a 2.8 machine (nearly three times faster than the then current Apple //e) at a price most people could afford, or a super fast machine designed with Mac type applications as it's mainstay at an excessive cost to the user. The conclusion? Until now the 2.8 Mhz restriction has sufficed, but to compete with the last //c (internal 3.5" drive and 4 Mhz 65C02), something had to be done. Apple, in their usual wisdom, have called once again on third party developers for the answer, which I will discuss later.

Aside from the rumours of a new graphics mode, developers still seem to impress even the most fanatical enthusiasts. The non-interlace mode of the Super Hires screen as well as the palette layout of the colours have been the two main strong points. With the release of the Sierra Online and Icom range of adventures and the Activision and Mindscape latest games, the call for higher graphics resolution has all but disappeared. The 640 x 200 pixel mode is high enough for most desktop publishing and cad applications, although the 200 vertical limitation is starting to create waves within the industry. Considering the Apple II standard hires of 140 x 192 colour, and that the Super Hires screen is in fact physically longer than the standard hires, the vertical resolution could be improved somewhat. Yet the IIgs graphics still seem to amaze us all. If you were at the November meeting of the AUG, you would have seen the latest version of The Graphics Exchange (by local developer John

MacLean) displaying GIF pictures. It basically blew away everyone present!

The sound of the IIgs is driven through a 32 channel ensoniq synthesizer chip, which was then quickly sussed out and used by the Mac people. Apple now have their own sound chip, which is yet to be used in the IIgs. At last, the power of sound, and the IIgs sound in particular, is starting to be recognised. Even the mono jack on the back of the IIgs is now stereo (although the output is still mono).

My last two reviews couldn't really make a decision on the IIgs keyboard. Originally, I preferred the //e keyboard, and then the IIgs and Mac II keyboards. Well now I actually use a Mac II keyboard (yes you can get them from a dealer), and prefer it over all the others. It actually has side rests, and a proper keyboard feel.

Although the IIgs keyboard is still faster (yes, Mac owners can buy them from a dealer), it is too plastic (such a word?) and light for long hours of proper typing.

#### SOFTWARE

The IIgs software base came through two major splurges during its relatively short history. The first being the wave of pre-release software developed before and slightly after the IIgs' original release. These packages all showed off the tremendous power of the latest member of the Apple II family. The second wave came with the release by Apple of GS/OS.

Many third party products were actually held back until its release, which seemed to be delayed by Apple for various rea-

sons for a couple of months. Now, IIgs software is appearing faster than ever before.

Considering the graphics and sound of the IIgs, and its education history, it's no wonder that most of the software coming out now is either educational, or games oriented. However, if the current trends in speed and storage continue, the IIgs should see some pretty powerful productivity stuff soon.

#### HARDWARE

The obvious improvement here, as I mentioned before, is in the area of accelerators. With Applied Engineering, Zip, and Rocket (R.I.P.) all bragging 10 Mhz chips, it's a wonder that Apple still slogs away with its measly 2.8. After using Cameron's (Cameron Brawn - BBS sysop) 6 Mhz Transwarp for a weekend, I finally realised what all the fuss was about.

If your applications do a lot of invisible work (calculations, manipulations etc), then you sure can notice the difference. However, if you're simply using Finder and a few screen oriented programs, then System 5 is really all you need. After using the Transwarp for a weekend, I'm still running at the standard 2.8 under System 5.

Rumours of 20 Mhz and greater are starting to appear as well now, so maybe by the end of 1990 I will have a faster machine, however I don't think Apple can actually hold out much longer without doing something about it. Apple's line so far has been "We'll do the software and disk stuff, you guys can do the processor!". It took them 4-5 years to make a 4 Mhz //c, but considering the work

now going into the IIgs (apparent from System 5 and the Apple statement of supporting the Apple II until at least 1995), this shouldn't be as long with the IIgs.

Hard disks. Gone are the days of 5 megabyte hard disks. In the last couple of years, hard disks have really taken off, with the average size currently at about 60-80 megabytes. CMS and other developers are now marketing drives of up to 300 and 600 megabytes. Apart from the fact that no-one has a phone list that big, it is quite astounding to compare that with the Apple 5 megabyte profile (slofile) of 1983. Not only is it larger storage, but it is also a faster transfer rate, and it's physically smaller in size. I currently have a 100 meg drive (I spend most of my time trying to fill it up, but you can only write so many programs and letters), which flies at some incredible speed which gets close to rivalling my RAM disk, and it's no where near as leading edge as some hard disks I've seen. Yep, hard disks are now a part of life, although with the way optical media in general is currently going, they may not be here for much longer!

#### WHAT TO READ

Various magazines have come and gone throughout the years, but which ones are the ones to read? With the down fall of Softalk magazine in 1985, quite a few magazines have taken that in their stride and carried on. Softalk was the definitive magazine for Apple II users/enthusiasts, which during it's heyday was known to contain up to and over 350 pages per issue. Considering that it was a monthly magazine,

this is quite staggering considering that Byte magazine (covering all types of computers) currently reaches the 300-450 page mark. Softalk started quite a few institutions, these being;

**"Assembly Lines"** - The Assembler Language column by none other than Roger Wagner. The book of the column was available after a while, and was called "Assembly Lines the book", which quickly became the definitive book for learning assembler.

**"Graphically Speaking"** - The graphics column by Mark "Penguin Software and graphics magician" Pelczarski.

**"DOSstalk"** - By Bert "Beagle Bros. DOS BOSS" Kersey.

**Now to each of the Apple II only magazines;**

**"A+"** - It used to cover the Apple II and the Mac, but sensibly dropped the second one due to lack of interest, and due to it being purely a toy for illiterate users. The number of pages has come down in the last two years and is now standard at about 100-150 pages.

**"InCider"** - Now merged with A+ to form the biggest Apple II magazine currently available. InCider has always covered just the Apple II range.

**"A2 Central"** - Used to be called "Open Apple". The brain child of Tom "Beagle Bros." Weishaar. Each monthly issue contains roughly 8-10 pages crammed full of news and letters on the Apple II world. If you wish to stay abreast of what's happening in the Apple II world without the slant of a journalist, subscribe to A2 Central. The size of each issue is surely deceiving as to how much information is crammed

inside.

**"The Sourceror's Apprentice"** - A successor to "Apple Assembly Lines", and concentrates on Assembly Language programming only.

**"Apple IIgs buyers guide"** - A quarterly publication listing all the IIgs products currently available from retailers.

**"Reboot"** - A monthly newsletter concentrating on Applesoft programming.

**"Nibble"** - A programmers introduction style of magazine paying attention to all the Apple-soft programmers/users of the world.

**"Compute's Apple"** - More or less a beginner's guide to the Apple II. Although some of the articles are quite technical, it's main niche is the education and home market. Compute also release books on many Apple topics, one being "Compute's guide to the IIgs toolbox"

**"Hardcore"** - Starting out as simply a newsletter detailing how to crack (remove copy protection from) programs, it has expanded over the years into magazine format with not only cracking details, but many technical articles on the more advanced topics of the Apple II range, including unfortunately, piracy. It seems to sell only by subscription in Australia, and in most areas Hardcore is a dirty word and instantaneously associated with software pirates.

**And now a few of the various general computer magazines that contain Apple II sections;**

**"Your Computer"** - When You Computer first came out (with Peter Sandys as editor of the

"Your Apple" column), over 50% of the magazine was dedicated to the Apple II. This gradually started to decrease as the microbee, BBC, Amstrad and IBM machines took over. These days, if you're lucky, you can find a one or two page article in the back entitled "Your Apple II" or "Your Apple IIgs". Your Computer's almost total MS-DOS dedication has been it's downfall as far as non-MS-DOS users go, and most of the original subscribers no longer bother with it. Your Computer is known in the Apple world as "Your IBM". If you want to cover the Australian computer industry in general (or in MS-DOS as the case may be), then this is the one for you. Peter Phillips, who writes for the Apple II section, must surely be dedicated. For this, Peter we thank you.

**"Australian Personal Computer"** - APC was one of the first Australian computer magazines. It never concentrated too much on one particular variety of machine, and because of this never really made number one. As far as I know, APC is still going, but I don't know how the Apple II coverage is handled. (Anyone else fill us in on this?)

**Deceased magazines;**

**"Softalk"** - Of course.

**"Australian Apple review"** - Locally produced and edited by none other than Gareth Powell. The copy was printed on a laser-writer, and hence the magazine had a very homely feel. It covered most of the issues concerning the Australian scene, and the very products that were available here. Never a very technical magazine, but great to keep in touch with the local scene. All this was funded personally by Gareth Powell,

but was dumped a year or so ago because it couldn't support itself.

**"Apple assembly lines"** - An assembler programming only magazine. Rather small in size, but technical content was quite significant. Almost an underground magazine for Apple II hackers, but unfortunately no longer exists.

Of course the various Apple computer clubs around the world also produce their own monthly magazines, of which the AUG is no exception. For information on magazines by other clubs, contact the AUG on one of the numbers listed in the front of Applications.

#### WHERE TO GO, WHO TO SEE

Interest in the IIgs has seemed to increased in the last year or so, and this is reflected in the number of hardware and software packages now becoming available. The user base seems to be now split up into a couple of major groups; Education (School and home), Personal productivity (Apple II users from way back, or purchases recommended from current owners), and Enthusiasts (Ever since 1976, these people have just loved to hack out the inner workings of each new Apple II).

The AUG holds a GS special interest group, which at times has a greater attendance than the Apple II main meeting. The GS sig covers new software and hardware releases, demonstrations of many of these new products, problems users have experienced, news of the industry in general, and close links with various dealers, suppliers and developers. If you have a particular problem with the use or understanding, or

even programming of the IIgs, chances are that someone in the sig can help.

The GS sig meeting is held on the first monday of each month at Sydney University. (Where the usual AUG Apple II main meeting is held on the second Monday of each month)

#### LOCAL DEALERS

Dealers have come and go during the past couple of years, but many have stayed, with name changes or smudges on their reputations. The problem still being the lack of software being supplied by these dealers, and the Apple II experience of the employees. However, there are dealers out there with a genuine Apple II background, and once you've found them you'll never look back.

Imagineering have recently sold off their Apple II interests (stop cheering please!) to Ozi Soft (coming back into the Apple II arena?) and GS Sales and Imports (part of Terry Cass' IIgs community).

Greyware is becoming a pretty hot issue now, with a new local dealer called Two Series Software attempting to sell software and hardware at reduced (more realistic) prices. And of course we still have Techflow and Dataflow supporting the Apple II as importers and distributors.

#### LOCAL DEVELOPERS/ENTHUSIASTS

Local developers are starting to spring up everywhere these days. So much so, that the Australasian Apple Programmers and Developers Association (AAPDA) is now running meetings in Sydney (at their offices on the second

Tuesday of each month), helped out by AAPDA and Apple employees. Also featuring quite a few developers, is the GS sig of the AUG.

The first Apple developer conference in Canberra during 1987, turned up very few IIGs developers. Peter Sandys' total commitment to the product was one of the main strong points of the breakout sessions, but he was unfortunately moved to Apple Inc. state side shortly afterward. The second, in 1988, actually featured quite a few IIGs developers, but most from the 1987 effort didn't attend due to both lack of interest the first time, and the rather high expense of spending a long weekend in the blue mountains.

This left Frank Revell to re-fuel the IIGs fire, a role which he fitted into perfectly.

The two main events of the past year, were the Apple user group convention in Manly during April (thank you Frank), and the Apple II developers conference (again in Manly) last August organised by Godfrey Gamble and Co. in his new position at Apple (thank you Godfrey). The next big event, is the 1990 Apple user group convention which, knowing Frank, should be even bigger and better than the last.

### THE NEW IIGS

Finally, the new IIGs was released. But, it wasn't REALLY what we were all expecting, was it? If you believed the various rumours, we were about to get a super charged 8 Mhz IIGs with built in 3.5" superdrive, SCSI port, 640x400 graphics, 4 meg on board, and at a cost of only about \$3000.

What did we get? Well, it had more memory (1128K). It had more features for programmers. And more importantly, it had a larger percentage of the System 5 tools in a ROM that was double the size of the last machine. For users, the question still remains: What did Apple actually spend two years doing? If you're a programmer, then you know the obvious answer.

The tools and improvements implemented in System 5 were

incredible. Timings between System 4 and System 5 were unbelievable. You can actually check out some of the enhancements by using the new Control Panel NDA from Finder, as it actually uses a lot of the newer tools. Overall however, the main enhancements have been invisible ones. On closer examination, you can tell that Apple definitely has something in mind for the IIGs, and if you think the current System 5 is powerful, then you'd better think again.

## SUMMARY

The IIGs is finally coming through the rough waters as far as user support is concerned. The future of the machine is starting to look a lot rosier.

The beginning of the Apple II developers conference seemed to be marking the death toll of the Apple II, but after a weekend of talking to other developers, and more significantly the engineers who actually came out from the US, most people came back with a breath of fresh air.

As I mentioned in the last article, the future of the IIGs is totally dependent on the support of it's user base, and as such it's up to us to keep the thing alive. I am yet to meet a IIGs owner who was not happy with his machine, yet we all hear constant complaints.

Everyone complains about the IIGs and it's limitations, yet few people actually put their money where their mouth is and get rid of it. Why? Because it still does things other computers only dream of, and even the most mundane computer tasks only much better, and with more style and class than any of it's competitors!

Apple enthusiasts have always been the lucky ones. What with their memory restrictions, speed restrictions, storage restrictions etc etc etc... whilst the IBM world constantly complains about all of the above. Well now it's our turn to face the music, and I think we, and Apple, are finally ready to take the Apple II seriously! Bring on the next decade!

# Sound Sampling on an Apple ][,][+,//e.

Written by John MacLean,  
technical assistance by Richard Bennett.

With the recent introduction of the Apple IIGS there has been much interest in sound sampling and digitising. I was recently surprised by the quality of some digitised sound generated on a //e, so I uncovered my old ][+, borrowed a drive off my GS and went to work.

The sound is sampled through the old cassette port so if you have kept your cassette leads over the years they may finally get used (again). The sound is played back through the internal speaker, so all you need is a cassette player or a CD for better sound quality. With the routines I will present here, you can achieve about 30 seconds of digitised sound in a 48K machine. The routines are written in assembler, but you can type them and enjoy them without knowing how they work.

The routines are surprisingly simple:

The cassette-in port (location \$C060) changes sign (the high bit changes) whenever there is a change in the electrical signal coming from the external sound. If the speaker is clicked every time the external signal changes, the sound is reproduced. This leads to the first program:

```

LOOP1 LDA $C060 ;Loop until the cassette-in goes
      BPL LOOP1 ;negative.
      LDA $C030 ;Click the speaker.
      BIT $00 ;Waste 3 machine cycles.
LOOP2 LDA $C060 ;Loop until the cassette-in goes
      BMI LOOP2 ;positive.
      LDA $C030 ;Click the speaker.
      JMP LOOP1 ;Keep going
  
```

This short routine takes the signal straight from the cassette-in port and reproduces the sound on the internal speaker. Note the BIT \$00 instruction to

waste 3 machine cycles - all loops should be the same number of machine cycles for the best quality sound reproduction. This routine is useful for adjusting your volume (and equalising if you have the equipment) to produce the best quality sound.

Now what is needed is some way of recording the signal from the cassette-in port so the sound can be replayed later. The next routine does that recording:

```

.....
CASSETTE PORT TO MEMORY PRGM
WRITTEN BY JOHN MACLEAN 1987
.....
  
```

LST OFF

ORG \$8000

\*ZERO PAGE LOCATIONS

BUFF EQU \$06

ZPAGE EQU \$08

\*HARDWARE PAGE LOCATIONS

CASSPORT EQU \$C060

\*SET UP THE BUFFER

```

START LDA #$00
      STA BUFF
      LDA #$08
      STA BUFF+1
      LDY #$00
  
```

\* FILL BUFFER WITH ZEROS TO ALLOW FOR TIME OUTS

```

      LDA #$00
ZLOOP STA (BUFF),Y
      INY
      BNE ZLOOP
      INC BUFF+1
      BPL ZLOOP
  
```

\* RESET THE BUFFER

```

      LDA #$08
      STA BUFF+1
  
```

\* LOOP HERE UNTIL CASSPORT BECOMES POSITIVE

```

MLOOP0 PHA ;3
        PLA ;4
MLOOP1 LDA #$01 ;2
MLOOP2 LDA CASSPORT ;4
        BPL PSAVE ;2+
        BIT ZPAGE ;3
        INX ;2
        BEQ MSKIP ;2+
        JSR MDELAY12 ;12
        JMP MLOOP2 ;3
MSAVE TXA ;2
        STA (BUFF),Y ;5+
MSKIP INY ;2
        BNE MLOOP0 ;2+
        INC BUFF+1 ;5
        BPL MLOOP1 ;2+
MDELAY12 RTS

```

\* LOOP HERE UNTIL CASSPORT BECOMES NEGATIVE

```

PLOOP0 PHA ;3
        PLA ;4
PLOOP1 LDX #$01 ;2
PLOOP2 LDA CASSPORT ;4
        BMI MSAVE ;2+
        BIT ZPAGE ;3
        INX ;2
        BEQ PSKIP ;2+
        JSR PDELAY12 ;12
        JMP PLOOP2 ;3
PSAVE TXA ;2
        STA (BUFF),Y ;5+
PSKIP INY ;2
        BNE PLOOP0 ;2+
        INC BUFF+1 ;5
        BPL PLOOP1 ;2+
PDELAY12 RTS

```

The time interval between each change in sign of the cassette-in port is recorded sequentially from \$0800 to \$8000 in main memory. This is done by incrementing the X register each time the port is tested and unchanged. When it finally changes the X register is buffered. The routine consists of two almost identical smaller routines. These routines

could be combined into one general routine, at the cost of about 10 machine cycles. The faster the loops, the higher the sampling rate, and thus the sampled sound is of higher quality. The unusual coding ensures that the number of cycles between each sampling of the cassette-in port is the same regardless of the branches taken.

The sound is now recorded (at 28 machine cycle intervals) and must be played back at exactly the same speed. This is achieved by decrementing the buffered values and clicking the speaker once they become zero. In this way, the intervals between speaker clicks will be the same as the intervals between changes of sign of the cassette-in port during recording. The following code plays back the sound as described. It uses unconventional techniques to get the loops down to 28 machine cycles each so the sound will be accurately reproduced.

```

.....
* MEMORY TO SPEAKER PROGRAM. *
* WRITTEN BY JOHN MACLEAN 1987 *
.....
LST OFF
.....
ORG $8200
.....
* ZERO PAGE LOCATIONS
BUFF EQU $06
ZPAGE EQU $08
.....
* HARDWARE PAGE LOCATIONS
SPEAKER EQU $C030
.....
* SET UP THE BUFFER
START LDA #$00
        STA BUFF
        LDA #$08
        STA BUFF+1
        LDY #$00
        JMP LOOP1

```

\* READ THE NEXT BYTE FROM THE BUFFER

```

LOOP0 INC BUFF+1 ;5

```

```

LOOP1 BMI DELAY12 ;2+ (ALL DONE ?)
        LDA (BUFF),Y ;5+
        TAX ;2
        DEX ;2
        BEQ SKIP1 ;2+

```

\* CHECK FOR ZERO (TIME OUT) AND HANDLE SEPARATELY

\* OTHERWISE DELAY 28 CYCLES TIMES THE VALUE IN THE X

\* REGISTER

```

CPX #$FF ;2\ (WAS IT A ZERO
BYTE ?)
BNE DELAYX ;2+
JSR DELAY12 ;12
JSR DELAY12 ;12
NOP ;2

```

\* DELAY ((254 \* 2) + 1) CYCLES

```

LOOP3 DEX ;2
        JSR DELAY12 ;12
        BIT ZPAGE ;3
        BIT ZPAGE ;3
        BIT ZPAGE ;3
        NOP ;2
        DEX ;2
        BNE LOOP3 ;2+

```

\* GO AND INCREMENT THE BUFFER POINTER BUT DO NOT CLICK

\* SPEAKER

```

JMP SKIP2 ;3

```

\* USE UP THE REST OF ANOTHER 28 CYCLES TIMING IT SO WE CAN

\* BRANCH TO THE REST OF THE LOOP COMPLETING 56 (2 \* 28)

\* CYCLES

\* ON QUEUE. IF X WAS GREATER THAN 2 THEN DELAY 28 CYCLES FOR

\* EACH REMAINING DECREMENT OF THE X REGISTER

```

DELAYX JSR DELAY12 ;12
        BIT ZPAGE ;3
        NOP ;2
        NOP ;2

```

```

DEX ;2
BEQ SKIP1 ;2+

```

\* THIS ROUTINE WILL DELAY 28 CYCLES TIMES THE X REGISTER

\* NOTE THE NOP MAKES UP FOR THE PREVIOUS BRANCH NOT BEING

\* TAKEN (1 CYCLE) AND THE LAST BRANCH OF THE DELAY LOOP NOT

\* BEING TAKEN THE LAST TIME THROUGH THE LOOP (1 CYCLE)

```

LOOP2 JSR DELAY12 ;12
        BIT ZPAGE ;3
        BIT ZPAGE ;3
        BIT ZPAGE ;3
        NOP ;2
        DEX ;2
        BNE LOOP2 ;2+
        NOP ;2

```

```

SKIP1 LDA SPEAKER ;4
SKIP2 INY ;2
        BEQ LOOP0 ;2+
        BIT ZPAGE ;3
        NOP ;2
        JMP LOOP1 ;3

```

DELAY12 RTS

Once you have recorded your favourite musics, try modifying the routines. Possible modifications are:

Slow down the recording program (add some NOP'S) and the sound will play back faster.

Slow down the play back program and the sound will play back slower.

Modify both the recording and playback routines to increase the recording time. Use the following buffers so the tests can be BEQ, BMI, and BPL at the end of the buffers:

Main memory : \$0800 -> \$7FFF,  
 \$BFFF -> \$8000,  
 \$D000 -> \$FFFF (on the language card),

Aux memory : \$0800 -> \$7FFF,  
 \$BFFF -> \$8000,  
 \$D000 -> \$FFFF (alternate language card).

Write a routine to play the sound in reverse (or just reverse the recorded buffer).

Happy sampling, and there's no need to feel left out if you don't own a GS.

# SONIC BLASTER REVEALED

*By Chris Nelligan.*

**Applied Engineering are infamous for their high quality products for the Apple II range of computers, and their add-ons for the IIGS are coming thick and fast. One of their latest is the SONIC BLASTER, a stereo playback and recording card.**

Every Apple IIGS has an Ensoniq digital synthesizer sound chip in it, this chip is used by professional musicians and studios to compose, synthesize and analyze up to 15 voices simultaneously.

As you would know, most applications on the IIGS take advantage of this sound chip producing unbelievable sounds. PBI software were one of the first.

The IIGS only produces a mono output from the socket at the back of the computer not unleashing the real sound. That is where stereo cards come in.

The Sonic Blaster plugs into a slot inside your computer and a cable is also connected to the stereo connector. The card is a phantom card (ie: you don't have to select 'your card' in the control panel).

All you do then is plug in your external speakers to the jacks on the rear of the card, and presto out come amplified stereo sounds from your Apple IIGS.

Programs like Thexder, Silent Service, Alien Mind, Tomahawk, Music studio and so on now come to life.

The Sonic blaster also allows you to digitize your own sounds using a Record player, Tape player, CD player, TV, Video etc into the computer. Recordings can be made in either channel 1, 2 or both. This produces high quality sounds which can be played back at any time.

Software is included which allows playback and recording of sounds. An oscilloscope helps you to set correct sound levels and clean up the sound.

The software also allows you to distort, echo, repeat, speed up, slow down, copy, paste your sounds together. Sound files are saved to disk in just about every format including Apple's Audio Interchange File Format as used in the IIGS and the MAC.

My friends and I had a lot of fun recording our own sounds.

We used a CD player and a microphone, the results were great. Surfing with the Alien, Learning to Fly and Sweet Child of Mine never sounded so good. With about 800k of free RAM you can record 22 seconds of sound.

I saved about 15meg of recordings to my hard disk. Playing back sounds at a later date is great fun, especially if you have a start up file during GSOS boot. The only problem was getting the right connecting plug for the card, instead of using an RCA connection, it uses the small connection like the headphone jack on the rear of the computer.

Another great feature of the software was its ability to cut and paste sections of sounds.

The time elapsed to perform the special effects was substantially faster than other programs such as FutureSound.

Summing up. Since having the Sonic Blaster in my computer, it is hard to go back to a machine which is not producing stereo sounds.

The Software was great fun to use making my life easy. Digitizing was not at all that difficult, and in the future I will use these sounds in my own programs.

Sonic Blaster is available from Two Series Software for \$195. This is a good price considering it is an Applied Engineering product. The one card does both the playback and the recording. Lots of sample recordings are included with the package, with a easy to follow manual. Good software with stereo recording samples are included.

*Sonic Blaster courtesy of Powertechnik.*

# Disk Disintegrater Deluxe

.....  
A Review.

By Grant Kwai  
.....

One of the best disk compacting programs available on the Apple // series is a Shareware program called Disk Disintegrater Deluxe. The programmer is an American by the name of Louis Roy and he asks for a small fee of \$US29.95 for his work.

You may now ask, "What use is this program to me?". Well, to answer that question, ask anyone with an Apple // and a modem. They will be quite aware of the power of this program. It has the ability to pack a non-protected 5.25" or 3.5" disk into a small compacted file. This makes life much easier when transferring files over a modem, by reducing the transfer time, and hence cost for STD calls.

To all the other Apple // users, this program can still be of benefit. If you are lucky enough to possess a hard drive, you can pack your standard floppies onto your hard drive, saving you approximately 40% of your hard drives space.

All you will then need to do is unpack the programs that you want and you'll be on your way! Another way would be to pack your disks, then store them on a tape backup unit, which can be run on an IBM, Macintosh or oth-

ers, as long as you transfer the file onto that particular machines environment. All the data is safely stored in the file so it is possible to save these files on another type of machine then "bring them back to life" on the old trusty Apple //.

To pack a disk, it is a simple procedure of following the prompts. DDD is fully menu driven. You can pack disks to any drive available, even Ram cards if there is enough space. The program itself requires a minimum of 64k. If you have 128k, then DDD will make use of this as a 59.4k buffer to store and retrieve the compacted data.

If you possess a //gs, DDD can be configured to take full advantage of the extra memory. Also, if you have a Zip Chip or some other form of an accelerator, it also has the option of changing the speed of the machine (ie in Mhz). The use of the mouse is also optional.

DDD only took about 2-3 minutes to pack a standard 5.25" ProDOS disk, that was completely full, and managed to shrink the original disk to about 63% of its original size.

DDD also allows the user to enter a small message at the beginning of each packed disk stating something which the

packer has chosen. This information is stored with the final packed data. For example, it might say who packed it and when it was packed, with some other brief instructions. This information is re-displayed by DDD whenever that data is unpacked in the future.

Not only does it pack and unpack a disk, but is also contains other functions such as formatting disks, typing text or Appleworks Word processor files, renaming files and volumes plus many more.

There has obviously been much work put into this piece of software, and if you can, get a copy and try it out as it would be well worth your time and effort. You can find the latest version, D.D Deluxe 5.0, on most bulletin boards and in most public domain Libraries.

Unfortunately, the documentation disk which is supposed to come with this program doesn't seem to have made it into Australia. DDD is fully menu driven so documentation is not really required. However, documentation for the older version, V4.2, is available if required.

DDD is available for downloading from the Apple // BBS.

# Little BITS

By Andrew Roughan

■ Well, what a great response last month's issue received! The article concerning the "new" Apple ///e and ///e+ caused quite a bit of stir. This article was in fact a humorous, farcical account. Unfortunately a few of our newer members were misled. I apologise for that and I undertake to reproduce the entire article in future!

■ I now have my new GS and I have to say that it is a wonderful machine. One statement I made in the last magazine, concerning the new machine, was that there was 1.25 MB of on board RAM. This is incorrect, there is only 1.125 MB.

My only disappointment so far has been that I cannot run that fantastic graphics and sound demonstration program, NUCLEUS, because the authors have used ROM incorrectly for the new machine.

■ February's GS SIG was a very entertaining meeting. The main demonstration was of a MIDI system, comprising ROLAND keyboard and MasterTracks Jnr software, given by John Paske. Attendees actually saw the new GS and the differences in the machines were pointed out.

Various hardware issues were discussed. Speed up hardware - ROCKET chips perform well if you can get them

•TRANSWARP cards perform very well also.

•ZIP chips had a high failure rate and were not recommended

Various Hard drives and tape drives were discussed. Three attendees offered their 60MB

CMS hard drives for sale. They are buying 100 MB replacements!

The demise of Call APPLE was lamented. Also the current problems of SEAHORSE were mentioned.

■ Frank Revill is no longer Marketing Manager for Apple Computer. He now holds the prestigious position of Customer Development Manager and can now "officially" support the A.U.G. Keep up the great work Frank.

■ Two American publications, A2 Central and Sourcerors Apprentice, were hailed as very good investments. The latter is the only known regular Apple // technical publication besides Apple's own Technical Notes. The addresses for these publications are:

A2-Central: A2-Central  
PO Box 11250, Overland Park,  
Kansas 66207. Ph 913-469-6502  
Sourcerors Apprentice:

Ariel Publishing  
PO Box 266, Unalakleet, AK  
99684, Ph 907-624-3161

■ After last month's review of Appleworks v3.0, I thought a few prices may be of interest.

Appleworks v3.0 is available from Dataflow RRP \$375. Dataflow are offering upgrades from all previous Appleworks versions. Send them the front cover of your Appleworks Reference manual, together with \$119.95 and \$8 for postage & packing. Please state whether you need the 3.5" or 5.25" version.

Dataflow also handle the TimeOut application upgrades. Send them your original disk and \$15.95. It is recommended that you call Dataflow to find out

whether a TimeOut upgrade for your title is available yet or not.

Dataflow Computer  
Services Pty Ltd.

134 Barcom Ave  
Rushcutters Bay NSW 2011  
02-331-6153

■ A new AE Expander revision for Appleworks v3.0 is due for USA release in February or early March. Expect it out here shortly after that.

■ Here are two questions I received about Appleworks v3.0. There were some others, but I am told the answers can be found in the Appleworks reference manual.  
Q Old files from Appleworks v2.0 have boldface continuing now where it shouldn't be. What's going on?

A V2 automatically stops Boldface when it encounters a linefeed. V3 doesn't. Therefore to fix your problem, make sure each boldface begin command corresponds with a boldface end command.

Q Can anyone tell me how to make a permanent change to the default options on the wordprocessor?

A Use SuperPatch. Unfortunately I wasn't able to find out where SuperPatch was available from. Does anyone know?

■ Upgrades for Applied Engineering GS RAM and GS RAM+ cards, so that they will work with the new Apple //GS, are now available. Revisions A & E GS RAM and revisions A & D GS RAM+ can be upgraded with a \$30 Pal chip exchange. The upgrade for revisions C & D GS RAM involves sending the card back to AE in the States. Contact Two Series Software (02) 606-9343 for details.

OK, I KNOW.

It was called the Apple II developer's conference, but the IIGS was centre stage the entire time, and the 'other IIs' didn't really get a look in. Odd, you may say, when the installed base (Apple's jargon for total number) of IIs far exceeds that of the IIGS.

# IIGS DEVELOPMENTS

By Peter Phillips

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issue YOUR COMPUTER.  
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But, I can assure you the IIGS is currently Apple's most highly supported computer and this conference, held at Manly in October 1989, was yet more proof of this. Printing lead times mean you don't get to read about it till January 1990, but better now than never! Here's an overview of the conference, as well as a brief look at some locally produced, commercially available IIGS products that were on show.

The conference was for developers only, and around 60 such individuals paid their money to attend the two day event. They

came from Sydney, Perth, Melbourne, Queensland and Canberra. Apple Australia organised the event, and were able to convince Apple Inc. (USA) to send three of their front liners to present talks to the group. The conference was mainly that... talks and presentations, by both the US visitors and local developers. I attended, as a developer, presenter and reporter, and came away more enthused about the IIGS than ever before. The Apple magic is far from dead - in fact I got the clear impression that the excitement of the early days is returning, evidenced to some extent by the presence of a number of very young developers.

Although all sessions were interesting, the most awaited were those presented by the US visitors - information that was given without hype, but with much humour, intelligence and honesty. These guys knew what they were on about and didn't mind sharing it. There were many highlights and I'll try and condense them.

The first speaker was Jonathon Fader, Manager of the Education and Multimedia Evangelism Group. It seems, according to Fader, that Apple is experiencing very little competition from the IBM Dos stable when it comes to computers in education. At least in the US the trend is clear, Apple IIe and IIGS computers are in schools covering kindergarten to Year 12, with Macintosh systems in higher learning institutions.

And Apple aren't about to let go of this. They recognise the seeding potential this strategy, in which today's students become

tomorrow's Apple devotees. But to ward off the competition, Apple has several plans of attack, including concentrating on making the Mac and the IIs far more interactive. A complete networking system was established at the conference, using a Mac as the 'server' and some eight IIGS computers as the 'stations', all interconnected using Appletalk. I used it to download

programs, install programs on the server, and to just get the feel of the system. Like all networked systems, it was slower than stand-alone, but it was reliable and easy to use with its mouse driven desktop interface. In fact, it was not much different to stand-alone, except for the presence of the server icon, which acted just like another drive.

Also attending the conference were developers from an Australian company (whose name I forgot to record, unfortunately) who are presently marketing an alternative system to Appletalk. Their system is currently in contract for Australian schools, and they also export their system to the US. Both systems are compatible, and now that the move is on for 'network' friendly software, we can expect to see networking in schools become even more popular. One interesting thing I discovered is that Appleworks classic is so network unfriendly, Apple convinced Claris to write a special version suitable for networking. This product is only available for such systems, and comes with a site license and all the necessary enhancements. But hardware is one thing, software is the other. Apple's main push is for more and more educational soft-

ware, but written to take advantage of the IIGS. In the States, many schools are updating to the IIGS as their II plus, IIe and IIc computers finally fall victim to student overload. And schools in the US have no more money than those in Australia it seems. Fader made the point that such purchasers generally wanted a system that costs the minimum but lasts forever. In support of the costing, he referred to the new IIGS, with its onboard 1.125M of RAM, increased ROM, and other enhancements. This computer still costs the same as the old IIGS which came with only 256K of RAM.

During the Q and A session, I asked what Apple was doing to support third party printers, as I've always maintained the Imagewriter printer is overpriced when compared to other printers that will often outperform the Apple product. The answer was encouraging. Apple have now made available full details of their printer driver requirements, and will support any individual or printer manufacturer who wants to write a driver routine to support a particular printer. I believe that as a result, we will soon see drivers that support printers such as the HP range (DeskJet and so on), and all the various Epson types (over those already supported) as well as a range of others.

One potentially embarrassing question asked of Fader referred to the desirability of raising school students on Apples knowing they would be more likely to encounter MS-DOS machines in the work place. He replied that this was not perceived as being a problem by most educational institutions in

the US, and that the Mac was becoming an industry standard. Because of its Mac-like qualities, the cheaper IIGS with its colour and sound enhancements thrown in, was seen by schools as being the best way to go, particularly when most of the previously purchased Apple software would still run.

The other two US visitors were Ray Montagne and Matt Deatherage, who are both design engineers associated with the IIGS. These two 'gods' spoke about System 5.0 (we don't call it GS/OS 5 anymore), and also handed out copies of System 5.0.2 The new system cleans up a few bugs that crept into System 5.0, but doesn't offer any further speed enhancements. But then, System 5.0 is a hard act to follow.

Their aim was to acquaint Australian developers with System 5.0, Appletalk, tool revisions, other innovations, and to answer questions. As well, they had a lot to say about Apple's philosophy on software development. The big push is for Appletalk 'aware' software, as well as the adherence to the human interface guidelines. This latter concept refers to the use of the desktop and to making all software look similar, so that users don't need to spend unnecessary time learning new software.

Much of the talk presented by these two experts was of a technical nature and I'll spare you the details. It's sufficient to say that Apple see other software developers as being very important, whether in Australia or overseas. For example, System 5.0 includes a number of resource files, specifically for programmers and a

whole session was spent on this topic.

Although many of the developers were from professional organisations, a number of young developers also attended. One young programmer (16 years old) showed me a game he had written that included high quality, interrupt driven sound. He wrote the program with a combination of BASIC and assembler subroutines, using the monitor to write much of the assembler code. The game was mouse operated and in full colour, even though the software looked a bit like IIe code. What he had achieved would have been impossible on any other Apple II computer, and he had happily mastered the IIGS by building on experience gained from his IIe days.

The fundamental philosophy behind writing a program for the IIGS is to use the toolbox. Here you have all the routines to perform most of the heavy duty tasks, and a program in its simplest form is nothing more than a series of toolbox calls. In other words, Apple have done all the hard work for you, and with a few books - available from AAPDA, 36 Victoria St, Erskineville NSW 2043, (02) 550 5533.

Quite a number of those attending had already produced products for the IIGS, including three enterprising members of a Queensland based company called Power Up Technology. I was shown their IIGS stereo card which includes all the hardware to couple sound into as well as out of the IIGS. This card, compatible with any program that uses the Supersonic card, is available for around \$89, and gives stereo,

despite what you may have been told.

While on the subject of sound, several music programs yet to be released were demonstrated at the conference. Both programs were of the playback variety, and believe me, you "ain't heard nuthin' yet." There's two reasons for this - programmers are starting to learn the sound system, and the sound tools have been improved.

On the software scene, developers have been active since the IIGS first hit the country. Readers may be familiar with Graphix Exchange, a program written by local developer John MacLean that handles any type of graphics you can think of, with the ability to convert from one form to another. For example, a standard 320 super resolution graphic from a GS paint program can be converted to a Print Shop graphic and vice versa. It also includes scaled transfers, which allows a composite graphic to be constructed from a number of individual graphics from a range of sources.

A great program for handling graphics on the IIGS, and straight of Oz!

Power Up Technology gave me a review copy of their recently released communications software package called DataWorks. This program is text based and runs on the IIe and IIc as well as the IIGS, requiring keyboard operation rather than mouse. However, it supports the IIGS hardware, such as the modem port and, runs under ProDOS.

I ran the program through all its paces, and found it very easy to use and free of any nasties.

It supports ASCII, Xmodem,

Ymodem and Binary 2 file transfer protocols. Binary 2 is a protocol developed by Apple, based around the Xmodem system and is generally used when transferring data between two Apple computers. Dataworks also supports Viatel, though with some limitations. The manual is one Power Up can be proud of, as it provides instructions to a level that suits a beginner without becoming patronising. Dataworks should be available through most dealers, at around \$89. Otherwise try them direct at PO Box 295, Cannon Hill Qld 4170 (07) 395 6719.

Finally a shareware program, written by a Victorian developer, Peter Watson. Under the title of PAW, the disk has a number of utilities for use with the Apple Programmers Workshop (APW) or ORCA/M, both of which are assembler programs for the IIGS. Some of the utilities also run under ProDOS and others are for use with Applesoft and GSBASIC. The utilities include routines to compare text files, an Applesoft to GSBASIC conversion, and one called MassFormat, which allows the user to format a whole lot of 3.5" disks in minimum time. The disk is a mere \$25, or \$10 if you don't want the source code. Great value, and it's available from Peter Watson, 33 Eram Rd Box Hill North Vic 3129.

There were other developers at the conference with products nearing completion which I hope to be able to review when they are released.

So not all IIGS software/hardware is imported. Which is good news for us and the national debt.

# Apple User Group BOOK LIBRARY LIST.

This is a list of the books currently available to members through the AUG book library.

A selection of these titles are available at each Apple // General meeting. If you want a specific title, contact the librarian.

N.B. Members Library Book has been abbreviated to MLB. - Ed

**Handbook # 1.**  
Hi-Res Secrets.  
by Don Fudge.

**Handbook # 2.**  
Keyboarding for Information Processing.  
by Robert Hanson & Sue Rigby.

**Handbook # 3.**  
Continuing Basic.  
by P.E.Gosling.

**Handbook # 4.**  
The Computer Connection.  
by Arnold Wolff.

**Handbook # 6.**  
M68000 16/32 bit Microprocessor.  
Programers Reference Manual.4th. Edition.  
by Motorola.

**Handbook # 12.**  
Apple 5.25 Drive Owners Guide.  
by Apple Computer.

**Handbook # 15.**  
Prodos Users Manual.  
by Apple Computer.

**Handbook # 18.**  
Discovering Computers.  
by V.X.Glenhill.

**Handbook # 20.**  
Apple //c Users Guide.  
by Lon Poole

**MLB # 22.**  
Apple Works Tutorial for Version 1.  
by Apple Computer.

**MLB # 23.**  
Apple Technical Notes Vol. 1.

**MLB # 24.**  
Apple Technical Notes Vol. 2.

**MLB # 24A.**  
9 Washington Apple Pi Mag

azines.  
May 1982, June 1982, July 1982, August 1982, September 1982, October 1982, November 1982, December 1982, January 1983.

**MLB # 25.**  
7 Washington Apple Pi Magazines.  
February 1982, March 1983, April 1983, May 1983, June 1983, September 1983, October 1983.

**MLB # 26.**  
10 The Michigan Applegram Magazines.  
June-July 1982, August 1982, September 1982, October 1982, Vol.5.#1 1983, Vol.5.#2 1983, Vol.5.#4 1983, Vol.5.#5 1983, Vol.5.#6 1983, Vol.6.#1 1984.

**MLB # 27.**  
11 Cider Press Magazines.  
April-May 1981, June 1981, July 1981, August 1981, September-October 1981, November 1981, December 1981, January 1982, February-March 1982, May 1982, June 1982, July 1982.

**MLB # 28.**  
16 ACT Users Group Newsletters.  
January 1987, March 1987, May 1987, June 1987, July 1987, August 1987, October

1987, February 1988, March 1988, April 1988, June 1988, July 1988, August 1988, October 1988, November 1988, December 1988.

**MLB # 28A.**  
11 AUG Applications Magazines.  
December 1984, November 1984, October 1984, September 1984, August 1984, July 1984, June 1984, May 1984, April 1984, March 1984, January-February 1984.

**MLB # 28B.**  
12 AUG Applications Magazines.  
August 1981, March 1982, May 1982, November-December 1982, January-February 1983, March 1983, May 1983, June 1983, July 1983, September 1983, October 1983, December 1983.

**MLB # 29.**  
12 Washington Apple Pi Magazines.  
December 1984, November 1984, October 1984, April 1984, March 1984, February 1984, January 1984, December 1983, November 1983, August 1983, April 1982, September 1982.

**MLB # 31.**  
5 Apple Orchard Magazines.  
April 1983, June 1983, September 1983, November 1983, December 1983.

**MLB # 32.**  
9 A.U.S.O.M. News Maga-

zines.  
January 1987, February 1987, March 1987, April 1987, May 1987, June 1987, August 1987, September 1987, October 1987.

**MLB # 33.**  
6 A.U.S.O.M. News Magazines.  
February 1988, March 1988, August 1988, September 1988, October 1988, December 1988.

**MLB # 34.**  
6 Apple Orchard Magazines.  
January 1984 to July 1984.

**MLB # 38.**  
4 Washington Apple Pi Magazines.  
January 1986, December 1985, November 1985, September 1985.

**MMLB # 40.**  
4 Apple Orchard Magazines.  
Fall 1980, Spring 1981, Fall 1981, Winter 1981/82.

**MLB # 42.**  
9 Call A.P.P.L.E. Magazines.  
January 1983, February 1983, March 1983, April 1983, May 1983, June 1983, September 1983, November 1983, December 1983.

**MLB # 43.**  
6 Call A.P.P.L.E. Magazines.  
July 1984, August 1984, September 1984, October 1984, November 1984, December 1984.

**MLB # 44.**

9 Washington Apple Pi Magazines.  
January 1985, February 1985, March 1985, April 1985, May 1985, June 1985, July 1985, August 1985, October 1985.

**MLB # 45.**  
10 Open-Apple Magazines.  
VOL. 1. January 1985, July 1985, August 1985, September 1985, December 1985, January 1986.  
VOL.2. July 1986, September 1986.  
VOL.3. April 1987, May 1987.

**MLB # 49.**  
Prodos Users Manual.  
By Apple Computer (copy).

**MLB # 50.**  
10 Applications Magazines.  
January/February 1986, March 1986, April 1986, May 1986, June 1986, July 1986, August 1986, September 1986, October 1986, November 1986.

**MLB # 51.**  
10 Applications Magazines.  
January/February 1986, March 1986, April 1986, May 1986, June 1986, July 1986, August 1986, September 1986, October 1986, November 1986.

**MLB # 52.**  
11 Applications Magazines.  
January/February 1987, March 1987, April 1987, May 1987, June 1987, July 1987, August 1987, Septem-

ber 1987, October 1987, November 1987, December 1987.

**MLB # 53.**  
11 Applications Magazines. January/February 1987, March 1987, April 1987, May 1987, June 1987, July 1987, August 1987, September 1987, October 1987, November 1987, December 1987.

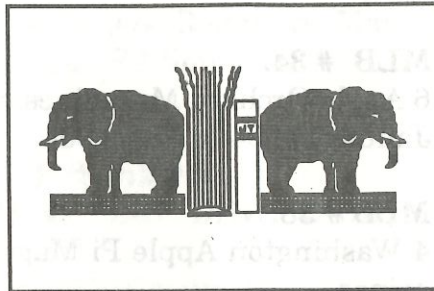
**MLB # 54.**  
10 Applications Magazines. January/February 1988, March 1988, April 1988, May 1988, June 1988, July 1988, August 1988, September 1988, October 1988, November/December 1988.

**MLB # 55.**  
10 Applications Magazines. January/February 1988, March 1988, April 1988, May 1988, June 1988, July 1988, August 1988, September 1988, October 1988, November/December 1988.

**MLB # 56.**  
6 A+ Magazines. August 1988, October 1988, November 1988, January 1989, February 1989, April 1989, 1 Your Computer Magazine. February 1989. 2 Incider Magazines. October 1988, April 1989.

**MLB # 57.**  
5 Nibble Magazines. March 1985, May 1985, June 1985, September 1988, October 1988.

**MLB # 58.**  
7 Call A.P.P.L.E. January 1987, February 1987, March 1987, April 1987, May 1987, June 1987, July 1987. 7 Scarlett Magazines. May 1986, July 1986, August 1986, October 1986, February 1987, May 1987. 2 Harvest Magazines. July 1985, December/January 1987.



**MLB # 59.**  
12 Washington Apple Pi Magazines. August 1986, September 1986, October 1986, November 1986, December 1986, January 1987, February 1987, March 1987, April 1987, May 1987, June 1987, July 1987.

**MLB # 60.**  
12 Australian MacWorld Magazines. February/March 1986, August/September 1987, February 1987, March 1987, April 1987, June 1987, August 1987, September 1987, October 1987, March 1988, August 1988, February 1989.

**MLB # 61.**  
1 USA MacWorld Magazine.

**November 1988.**

**MLB # 62.**  
4 Applications Magazines. July 1981, August 1981, September 1981, October 1981.

**MLB # 63.**  
5 Applications Magazines. March 1982, May 1982, September 1982, October 1982, November/December 1982.

**MLB # 64.**  
7 Applications Magazines. January /February 1983, March 1983, May 1983, June 1983, September 1983, October 1983, December 1983.

**MLB # 65.**  
10 Applications Magazines. January/February 1984, March 1984, April 1984, May 1984, June 1984, July 1984, September 1984, October 1984, November 1984, December 1984.

**MLB # 66.**  
9 Applications Magazines. January/February 1985, April 1985, May 1985, June 1985, July 1985, August 1985, September 1985, October 1985, November 1985.

**MLB # 67.**  
6 Macintosh Magazines. The Macintosh Buyers Guide Summer 1987. MacGuide Magazine Summer 1988. 3 Australian Macworld Magazines. May 1988, August

1988, April 1989. USA Macworld April 1989.

**MLB # 68.**  
3 MacUser Magazines. May 1988, June 1988, July 1988.

**MLB # 69.**  
3 MacUser Magazines. August 1988, September 1988, November 1988.

**MLB # 70.**  
3 MacUser Magazines. December 1987, February 1989, March 1989.

**MLB # 71.**  
8 Call A.P.P.L.E. Magazines. April 1986, May 1986, June 1986, July 1986, August 1986, November 1986. January 1989, March 1989.

**MLB # 72.**  
4 MACazine Magazines.

April 1988, May 1988, June 1988, July 1988, August 1988. 4 Computer Update Magazines. November/December 1987, January/February 1987, March/April 1987, May/June 1987.

**MLB # 73.**  
Localtalk Cable System. Owners Manual. By Apple Computer. (2 Copies).

**MLB # 74.**  
Apple SCSI Cable System. by Apple Computer. (2 Copies).

**MLB # 75.**  
A Touch of Applesoft Basic. by Apple Computer.

**MLB # 76.**  
Apple IIGS System Disk User's Guide.

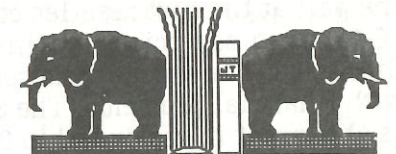
by Apple Computer.

**MLB # 77.**  
5 Nibble Magazines 1984. Vol. 5. Nos. 1, 2, 4, 5, 6.

**MLB # 78.**  
7 Nibble Magazines 1983. Vol. 4 Nos. 1, 2, 3, 4, 5, 6, 8.

**MLB # 79.**  
Apple Works Reference. by Apple Computer.

**MLB # 80.**  
Apple Works Tutorial for Version 2. by Apple Computer.



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# TO BE OR NOT TO BE.

By Fernackerpan Googlyitis.



## DEALER NEWS.

This month a couple of items have popped up about dealers (no I'm not into dealer bashing, yet. They can be quiet helpful, as long as you have a Mac.) The first item concerns the drop in price in the U S of Mac SE to \$1800 about \$AUS2400. The going price in Australia for a SE ranges between \$4800 & \$5400. It would be interesting to be a fly on the wall at the next reseller conference (Feb 16-18) when new prices for this machine are discussed. The second item concerns a dealer with financial problems. The Seahorse Group is at present in receivership & are trading out of it. In fact by the time you read this those of you at the Market Day will have seen them there. Perhaps if they were open Thursday nights &/ or Saturday things may have been better.

## MODEMS

Those members who don't own a modem, or those wishing to up grade existing ones should get in touch with Russell Coward at Avkek (02-888-5333). His company are going to support User Groups to a greater extent in 1990. As an example a Mega Modem 1234, cable for the GS or Mac together with Mac software is available for \$300:00.



## SSG

News from Roger Keating (no relation to the one in Canberra) is that his company Strategic Studies Group will be releasing three GS programs during the year. In March "Halls of Montezuma", in June "Gold of the Americas" & in July "Rommel". This is great news for GS strategy fans as Roger really turns out a mean game.

## FREE TOOLS ASSOCIATION.

This organisation, based in France has done it again. Following on from "Nucleus", FTA has released another program called "Photonix". This is a GS copy program with brilliant graphics, useful utilities & unusual cursor, also has the ability to format disks 2:1 as it copies data. The down side of this program is that it will not work with the new GS.

## IN THE PIPELINE.

Some new products about to be released are:

For the IIe, c & GS.  
CopyII+ 9.0  
Where In Time Is Carmen Sandiego.

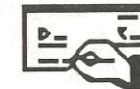
For the GS.  
Ancient Land Of  
Ys.  
Jam Session.  
Life & Death.

Bye for now, F.P.



# Quicken -

(A chequebook program)



Quicken 1.5



Quicken Help

Reviewed by Hans Hoffman

Being basically technically oriented, accounting always scares me. It therefore became a nightmare when I took on the Secretary/Treasurer's job in my unit building.

Running the day-to-day affairs was not a problem, but when it came to preparing the books for the A.G.M. I was struck by panic. No matter how I added things up I couldn't make the same totals twice, and even worse I found it difficult to budget for items like insurance, repairs, etc.

Some years ago we were asked for advice on a program to run a small business. My wife Anne, who is strong in accounting suggested the use of a "Cashbook" (or chequebook) program.

A Chequebook program basically records all the transactions made in your cheque account, and as businesses run on cheques, this would then give you a total reporting facility on your business.

Quicken is such a chequebook (or checkbook in American) program. Once the program is set up for your account, it simply means that you can enter every transaction you make, allocating the reasons for the cheque.

When you get your bank statement you can enter the bank charges, and let the program know which cheques have been cashed. Then you can make the program report, and you can quickly see your financial status.

More importantly however you can easily track any mistakes you have made. This is generally one of the problems you strike at tax time - mistakes.

The other problem is tax deductability! Mr. Keating just loves small business persons - and wage earners too - who, far from avoiding or evading taxes, actually overlook tax-deductable items (don't forget to claim the Quicken program). "Quicken" very simply helps you get your act together.

Just an aside; If you are using your computer for work - and many of us do - don't forget to put in a tax deduction for it. If your tax man won't help you then try Robert Barbariol in Five Dock, he understands computers.

Now for the review. Quicken follows the Macintosh interface with simple menus and windows which are open simultaneously, so that you can move from one activity to another. Only two things will trick you at first, Cmd-P is not Print, but Print Cheques, and the black-bordered Accept button is used with the Enter key not the Return key.

When you start a new Chequebook you are offered an initial choice of Home, Business, Macintax or None selections of categories.

Think of Categories as the names on the envelopes you put the dockets into in your drawer at home. Whether the bill is Council

Rates or Equipment Repairs, or Computer Paper, etc. The category selections are slightly different for home use than they are for business use so you are given a startup selection. You can add, change, or delete them at any time so don't worry.

Just a warning though - once you have used a category - say Gas Bill, you can't change it to Gas Account, because the program will not relate Gas Bill entries to the Gas Account category. Makes sense - but means that you need to go back and change the earlier entries to the later wording. Some chequebook programs use numbers for categories but here the wording is important. Do have a look at every category in the list you have selected. I couldn't relate to COG-Labor until my wife told me it was Cost Of Goods-Labor. When I clicked on it I understood.

The next tricky thing to know is your Beginning Balance. Take your bank statements and decide from which statement date you will start. The amount you want, is at the top of that statement!

One things to remember is that you may need to include cheques written before your starting date which have not been presented until after your starting date.

If you have been thrown off by all this, remember you only have to set up you chequebook once. After this it becomes a piece of

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GEOS includes over 60 special features supporting four applications, GEOWRITE, word processor, GEOPAINT, paint program, GEOSPELL and GEOMERGE. Desk top accessories include Note Pad, Calculator, Alarm Clock, Photo Manager and Text Manager.

Requirements: Apple IIe/IIc/IIgs (128K), 2 drives, Apple Mouse, recommended, supports memory cards, hard disks, not copy-protected.



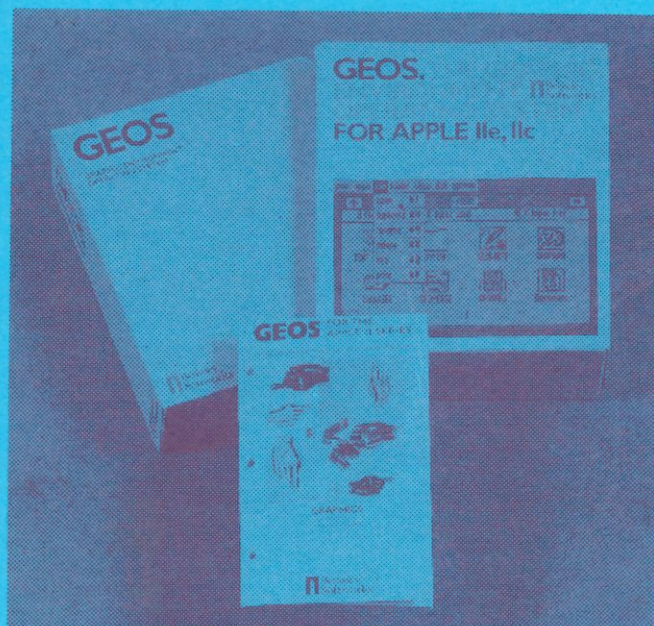
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**GeoCalc:** A versatile worksheet program for creating spreadsheets, incorporating chart and graphing applications.

Complete specification product sheets are available for **GEOS**, **GEOPUBLISH**, **GEOFILE** and **GEOCALC**.

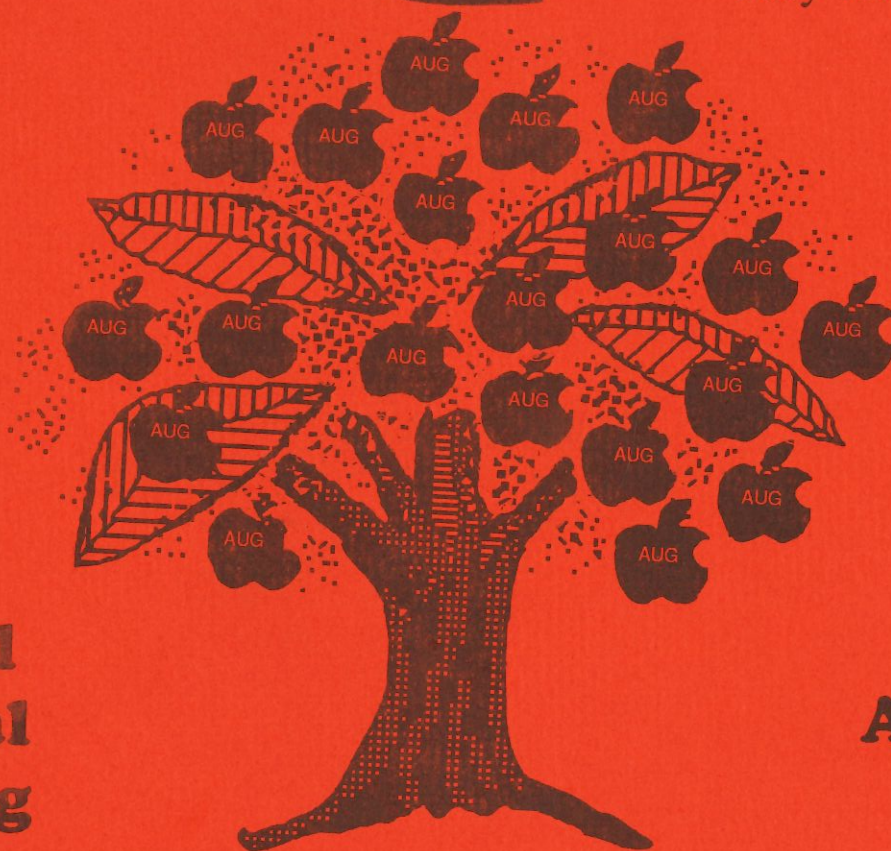


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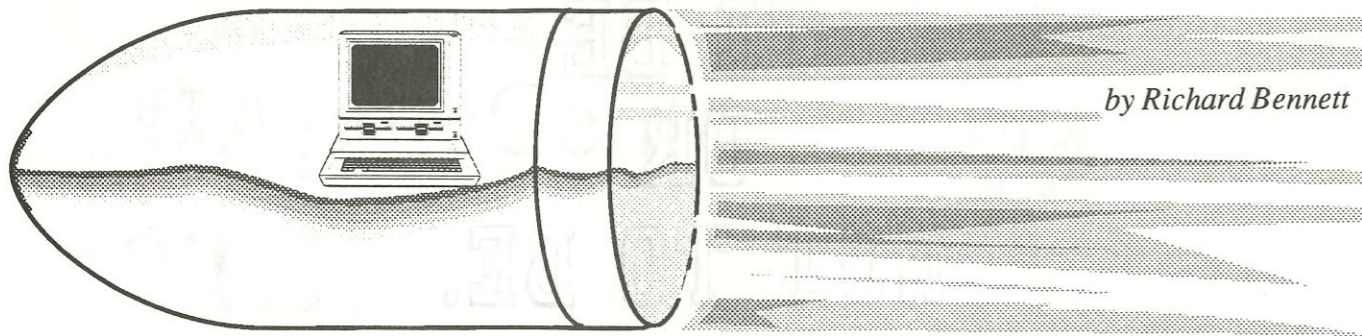


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Meeting**

**20th  
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1990**

The Publication of the  
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## Speed for the Apple // and breaking the 20Mhz barrier

Yes, there is still some speed left in the old beast after all. The Apple // is on the verge of becoming a VERY fast machine. But first, I'd like to thank Cameron Brawn (and the AUG) for the documentation on the club's 4Mhz ZIP chip which runs the BBS, Darren Langer for the documentation on his RocketChip, and Cameron once again for the documentation on his TransWarp GS (before I bought mine). Unfortunately however, the club's ZIP chip died before I got a chance to have a good look at it.

Have you ever tried writing time critical code for the Apple //? In the old days it was easy, as every machine ran at roughly 1Mhz. These days, with so many different chip speeds, you have to be careful. Even Apple themselves have 5 different CPU speeds across the Apple // range (1 Mhz slow RAM in the ][+ //e and //GS, 1 Mhz fast RAM in the //GS, 2.8 Mhz slow RAM //GS, 2.8 Mhz fast RAM //GS, and 4 Mhz slow RAM //c+). If your timings aren't that critical, you can rule out the differences between fast RAM and slow RAM, and you've still got 3 different speeds. Now add this on to the three TransWarps for the //e (all different speeds), the ZIP chip //e (two top speeds), the Rocket chip //e (two top speeds), the TransWarp //GS (two top speeds), and the new ZIP chip //GS. This last chip is supposed to be shipping at the end of June 1990, but then again it's ZIP technology, so....

Lucky enough, all these chips can be slowed down to a more uniform speed (such as 1 Mhz). But unless you code routines to look for every

one of them (they are all controlled differently!), you're still not going to get the same speed on every machine. Even then, the routine to actually slow the chip down would probably be longer than the entire routine you're trying to write!

### The ZIP chip

The ZIP chip is controlled via a bank of softswitches in the hardware page. The address lines on the chip are tested for these addresses, and acted upon as if they were part of the machine. The ZIP chip registers range from \$C05A (normally set annunciator 1) to \$C05F (clear annunciator 3 and double hires off, depending on IOUDIS being on of course). To talk to the ZIP, you first have to tell it that you actually want to talk to it. To do this, you write the value \$5A to the ZIP lock/unlock switch. This will unlock the ZIP ready for your commands.

```
LDA #$5A ;Unlocking value
STA $C05A ;Stick it 4 times
STA $C05A
STA $C05A
STA $C05A
```

To slow down to standard 1Mhz, simply write an invalid value to the lock/unlock register whilst it's unlocked. So, following the previous section of code, you could do this;

```
LDA #0 ;Invalid value
STA $C05A ;Slow down to 1Mhz
```

by Richard Bennett

This still leaves the ZIP unlocked, so your time dependent code should either lock the ZIP, or not go anywhere near the ZIP registers (or any code your routine calls, including ROM).

To speed it back up again to it's original speed, make sure the ZIP is unlocked, and then do a write to location \$C05B;

```
STA $C05B ;Speed up again
```

Of course you must now re-lock the ZIP again;

```
LDA #$A5 ;This is the locking value
STA $C05A ;Stick it in the lock/unlock register
```

Once the ZIP is locked, all accesses to it's registers are ignored, except for a sequence of four \$5As written to the lock/unlock register. Changing the speed of the ZIP involves picking any of it's twenty speed settings, which range from 0.6667 to 4.0 megahertz (or to 8Mhz for the latest ZIP), and sticking the appropriate index value into the speed register at \$C05D (whilst the ZIP is unlocked).

### The RocketChip

The RocketChip has a maximum speed of 5Mhz, which is not surprising considering the engineer behind it originally worked with ZIP technologies. It also has twenty speed settings, this time getting down to 50Khz as opposed to the ZIPs 500Khz. I am yet to see the technical manual on the RocketChip, so I can't really elaborate on how to program it.

Suffice to say that the speed selection emulates the TransWarp protocols, which is one of the reasons why Applied Engineering had licensed technology from BPT (Bits and Pieces Technology Inc., who make the RocketChip) in it's new TransWarp II. Of course when BPT lost the court case with ZIP, Applied Engineering had to quickly re-design the TransWarp II into the TransWarp III, which brings us nicely to the TransWarp.

### The TransWarp

The TransWarp is configured by using dip switches on the card. The only hardware register in memory, is at \$C074, and is purely a speed register. This location can contain three different values, which you can read or write at any time;

```
0 = Fastest speed (selected by switches on
card, usually 3.6Mhz)
1 = Normal 1Mhz
3 = Disable the TransWarp completely until
next cold-boot
```

Theoretically, by reading from \$C074 and checking for a 0, 1 or 3, you could tell if a TransWarp is installed. The manual doesn't mention any way of recognising the card, so if any has a TransWarp that works (ie. mine doesn't work), please let us know. Sample code for testing for a TransWarp would then be something like this;

```
LDA $C074 ;Get speed register if possible
CMP #2 ;Two is invalid
BEQ NOTW
AND #3 ;Strip off all but bits 0 and 1
CMP $C074 ;Same as before?
BNE NOTW
YESTW EQU *
NOTW EQU *
```

This method ensures that the location is read at least twice to verify the TransWarp's existence. If a TransWarp is not installed, this location should not only be garbage, but different garbage on each read. The likelihood of getting a value below \$40 is pretty remote, let alone getting the same value twice below 4.

So, to slow down the TransWarp;

```
LDA $C074 ;Get current speed
STA SAVESP ;Save it
LDA #1
STA $C074 ;Slow down to 1Mhz
```



And to speed it up again;

```
LDA SAVESP ;Retrieve the old speed
STA $C074 ;Set it again
```

At the time of writing this article, my attempts to get the documentation on the //c+ had failed.

However, rumours of the //c+ containing either a ZIP chip or a ZIP chip hybrid abound.

Considering this and Apple's association with Applied Engineering and the TransWarp GS, it would be safe to assume that the //c+ is controlled the same as either the ZIP chip, or the TransWarp (or RocketChip). Those of you requiring this information should contact Apple and see how you go. (Or if anyone has this information already, could you please let me know!)

## GS specific

For the //GS, there are two methods to slow the machine down. Apart from running your code in bank \$E0 or \$E1, the Apple engineers have put in a CPU slowdown switch, and a 5.25" slow down sensor. The slowdown switch is at \$E0/C036, and in a normal system, is thus shadowed into bank 0 at \$00/C036. Bit7 is the select bit.

```
LDA $C036 ;Get current setting
AND #$7F ;Make bit7 = 0 to slow down
to 1Mhz
STA $C036 ;Stick it back in
```

Also, whenever the disk drive is activated, the machine is also slowed down. Although this isn't as simple as the above method, with a bit of fiddling you can arrive at the same solution.

Considering the drives MUST run at 1Mhz, we can guarantee that activating the drive will slow down ALL CPU accelerators. Although they should all respect \$E0/C036 as well, this method still works fine. How the ZIP GS handles slow downs I don't know, but this method simply must work with it!

```
LDA $C02D ;Get the current slot settings
```

```
PHA ;Save them
EOR #$40 ;Switch to the alternate setting
; ie. If currently internal Disk Port,
select the card
; If currently card, select Disk
```

```
Port
; This will ensure that the drives do
not get activated
```

```
STA $C02D ;Set the new slot settings
LDA $C0EE ;Set read mode just in case
LDA $C0E9 ;Drive on, //GS is now
running at 1Mhz
PLA ;Restore original settings
STA $C02D ;Set them back again
```

Of course to restore it again;

```
LDA $C02D ;Get it
PHA ;Save it
EOR #$40 ;Flip it
STA $C02D ;Set the new
LDA $C0E8 ;Turn drive off (fake drive
that is)
PLA
STA $C02D ;Restore the setting
```

Of course with System 5 and it's 14 slot architecture, this means that you would either have to disable interrupts, or not use this technique under GS/OS. Either way, the \$C036 is of course preferable. (And if Matt deatherage finds out, don't dare tell him that I suggested it!)

## TransWarp GS

The TransWarp GS will respect the //GS speed register and slow down to 1Mhz whenever the system requires it, and of course speeding up again once the speed register is restored to high speed. This means that most programs can simply slow down the //GS via \$E0/C036, perform their time critical code, and then restore \$E0/C036 again. TransWarp GS also has an IRQ slow down feature, which can come in handy. As an option, you can tell TransWarp GS to slow down to the current //GS speed whenever the interrupt bit in the status register is set. This effectively turns the TransWarp GS off, and enables the \$E0/C036

switch to toggle between 2.8Mhz and 1Mhz. So all you need to do is this;

```
SEI
```

Simple huh? However, considering it's only an option, you first have to check that it's activated. To do this, you either have to turn on AppleTalk/IRQ in the TransWarp GS desk accessory, or call the EnableIRQLogic routine in the TransWarp GS ROM;

```
JSL $BC/FF38 ;EnableIRQLogic call
SEI ;SEI now works fine.
```

But to speed it up again, you should restore the original setting of the IRQLogic. So, starting with the slow down routine;

```
GOSLOW JSL $BC/FF3C ;GetTWConfig -
Returns current config in A
; (Only four bits are actually used)
STA TWCONFIG ;Save the current config
JSL $BC/FF38 ;EnableIRQLogic
SEI ;Slow me down!
```

And the restore;

```
GOFAST CLI ;Speed me up!
LDA TWCONFIG ;Restore the original
config settings
JSL $BC/FF40 ;SetTWConfig
```

## Code Timing

So how does this all affect your time critical code?

For starters, actually slowing down the chip can be a real pain. Recognising all the different accelerators can be a long winded process. What we should be able to do instead, is read the speed of all the chips at once, and use that value to generate extra delays in the code. Unfortunately, this requires recognising each of the accelerators as well, so we may as well rule out the chip as part of a solution. Luckily enough, there are other parts of the hardware that generate a constant timer value across all of the machines, and a few

extra ones in the //GS.

For the ][+ and //e we can use the vertical blanking period as a timer. In the //c, and a //e with a mouse card, we could use, once again, the vertical blanking period, or a vertical blanking interrupt. In the //GS, we can use any of the following; the 1 second interrupt, the .25 second interrupt, the vertical blanking period, the heartbeat queue (driven from VBL interrupts), the tick counter (driven from the VBL interrupts), and scan-line interrupts.

## VBLs - Vertical Blanks

The vertical blanking period is the time it takes the electron gun, inside the monitor, to get from the bottom right corner of the screen, to the top left corner of the screen. During this time, the screen display is not updated. This is perfect for re-drawing graphics in memory before the gun starts to re-trace the screen. Using this method, you have approximately 10819-10835 instruction cycles running at 1 Mhz on a 60 Hz screen, which occurs 60 times each second. As you can see, we now have a logical way of timing our code, independent of the actual speed of the CPU.

Bit 7 of location \$C019 indicates whether the vertical blanking (VBL) period is currently active or not. This is where we start to have problems.

On the pre-//GS machines, a one in bit 7 meant that a VBL was occurring, but on the //GS it's a zero. This means that if we require the current state of the electron gun, we have to code something like this;

```
SEC
JSR $FE1F ;Call standard //GS ID routine
ROR ;Drag the carry into the
accumulator, bit 7
EOR $C019 ;Test bit 7 of the VBL
indicator
BPL :VBLACT ;Yep, VBL is occurring
BMI :NOVBL ;Nup, must be re-tracing
```

However, if all we need is a timed delay for as close to one second as we can get, the following code will suffice.

```

LDX #60 ;60 VBLs for 60 Hz (plus or
minus up to one re-trace)
VBLOOP LDA $C019 ;Wots the gun doing?
BPL *-3 ;Wait for it to go high
LDA $C019 ;Must be high now!
BMI *-3 ;Wait for it to go low again
DEX ;Done yet?
BNE VBLOOP
LDA $C019 ;Wait one more for non-
alignment
BPL *-3

```

This routine will delay for one second, and considering that the position of the gun can't be read on pre-//GS machines, an extra poll is performed in case we started just before it went high (and wasted the first BPL). This of course is optional, and shouldn't be required unless you need AT LEAST one second of delay.

## Waiting around at \$FCA8

The WAIT routine in the //GS at \$FF/FCA8 (shadowed into \$00/FCA8), automatically slows the machine down to 1Mhz by changing the speed register at \$C036. Once the delay period has ended, it restores the original value. Of course the TransWarp GS will respect this and slow down as well. However, more elaborate routines will require more control of timing than the overheads and limitations of the WAIT routine.

To use WAIT under GS/OS, you would either have to use a \_FWEntry call, which incurs the overhead of the Toolbox, or setup a WAIT call routine in bank 0 to set up the appropriate environment before and after the call. For games which use the joystick, it is quite easy to set up and call a routine in bank 0 which calls the monitor paddle routines directly, so why not a WAIT routine as well?

## Interrupts

Interrupts can be very handy. Here is a simple 1 second interrupt handler under P8. You can type it in at \$300 if you wish;

```

START CLC ;Switch to native 65c816
XCE
REP $20 ;Use long m
LDA #TIC
STAL $E10055 ;Point the 1 second IRQ
vector
SEP $20 ; to point to me
LDA #^TIC
STAL $E10057
LDA #4 ;Turn on 1 second interrupts
TSB $C023
SEC ;Switch back and exit
XCE
RTS
TIC PHB ;Tick entry. Save data bank
PHK ;Get my bank
PLB
LDA $C030 ;Make a little tick noise
LDX #10
LOOP PHA
PLA
DEX
BPL LOOP
LDA $C030
LDA #$40 ;Reset 1 second interrupt
TSB $C032
PLB ;Restore the data bank
CLC ;Tell ROM that I handled it
RTL ;Exit

```

The ROM (and Toolbox) interrupt hooks all roughly work the same way as the above routine. It is usually up to the caller to clear the interrupt, and signal to the ROM if it was handled correctly. The Toolbox routines \_IntSource and \_SetVector should really be used for interrupt handling. However, if you need speed, you'll have to access the switches directly, as I did in the above example.

## Apple Offerings

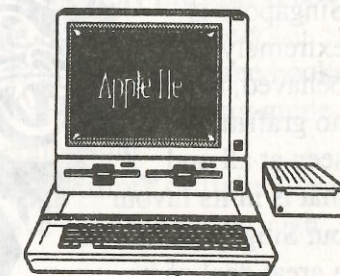
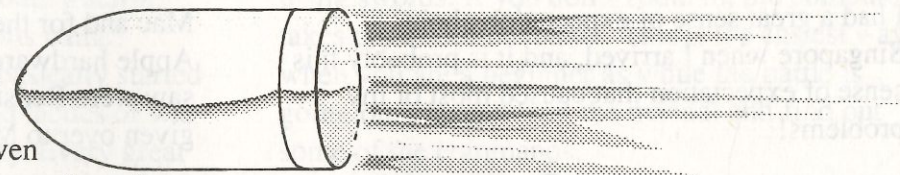
The latest in speed from Apple, is the new High Speed SCSI card. And because it was on the Apple // first, it's safe to say that all new Macs now use the Apple // SCSI technology. Whilst not a CPU accelerator card, it does accelerate access to SCSI devices. Whilst the old SCSI card was

able to use pseudo-DMA, which still uses the CPU for the final transfer of the data, the new card has real DMA. The following figures are for loading 102 x 32k super hires pictures with the FAST! option of my Slide Master program (as demonstrated at the May Apple // meeting). All tests were run with GS/OS RAM cache turned off:

From /RAM5 took 43 seconds  
 From the new SCSI card took 22 seconds (who needs a TransWarp GS?)  
 From the new SCSI card with 7Mhz TransWarp GS took 16 seconds

## What the future holds

As of finishing this article (31st May 1990), there were various rumours floating around about even faster CPUs. ZIP technology and a rating of 20Mhz has been mentioned, as has a 20Mhz TransWarp III. Also, the 21Mhz reverse engineered 65C816 should be released some time in the next couple of months, however a card to



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# BY-PASS SINGAPORE

WAL GLYNN

Twenty years ago I spent 12 months of my life living on Singapore Island, and I loved it.

Singapore is a duty-free port and the exchange rate at that time was \$S3.20 = \$A1.00. There were a great number of bargains, particularly if you were interested in the Asian Culture.

Early in June this year I had the opportunity to return to Singapore and I grabbed at the chance. I had a great sense of expectation about Singapore when I arrived, and it is probably this sense of expectation that caused most of my problems!

The population of Singapore is extremely well-behaved, there is no graffiti to be seen at all and that is in its favour but Singapore has lost a great deal of its character over the intervening years -

it has a growing population who live (generally) in concrete high-rise buildings in the new towns that have been created - it is a wonder that Singapore does not sink under the weight of all that concrete.

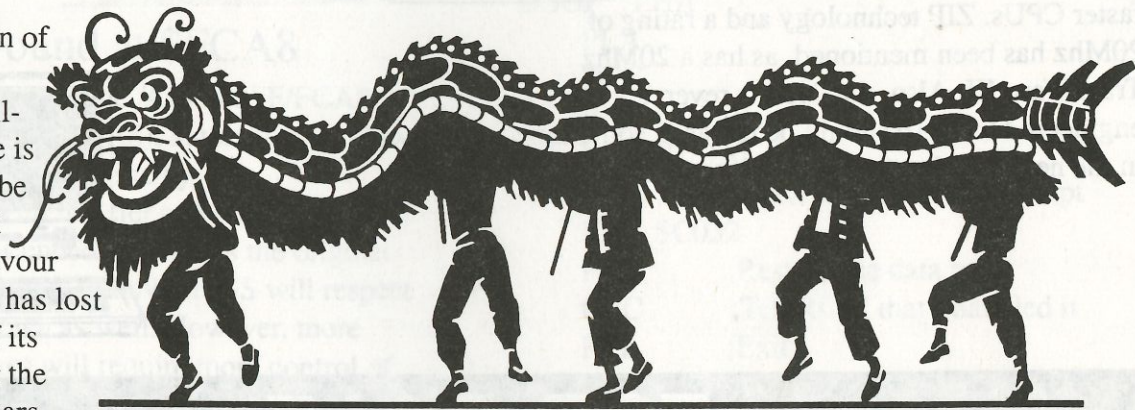
Most of the visible population is very young - it was difficult to find an older person, they may have refrained from venturing into the city, of course. Gone are the villages (kampongs) and gone are the shopping places where one could bargain for some trinket or other. These have been replaced by department stores - even the Chinese Emporium (C.K.TANG's) looks like David Jones - with David Jones prices.

One would think that because a large amount of Apple hardware is made in Singapore that there would be bargains a plenty - forget it! As one shopkeeper said to me when I asked about the Apple 2 "The Apple is dead".

In one shopping centre - the FUNAN Centre (near Raffles) there are two floors of the centre given over to computer shops. One of these shops sells Macs, one shop sells software for the Mac and for the Apple 2 and 2GS, one shop sells Apple hardware and repairs Apples (the ones I saw were Redstone clones) all of the rest are given over to MS-DOS machines and software.

Some of the Mac software was reasonably priced but that is hardly a reason to make the trip to Singapore - the machines could be bought cheaper here in Australia.

Next January I am travelling to Hong Kong - I will report on that trip next year (I have a son who is a Qantas pilot) - I hope that I have better news then!



# THE ANCIENT ART OF WAR

from Br0derbund.

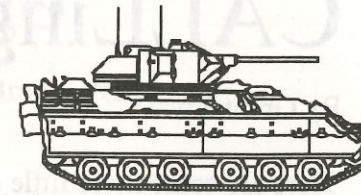
Review by Robert Brown.

Requirements-

Apple //e with at least 128K ram, //c or //GS.

Optional

Mouse, Joystick,  
Colour Monitor.



Just sit back into your chair and let your mind go wondering back about 2500 years. Your mind wanders into China. A great man sits in front of you scribbling chinese characters onto a scroll. What is he scribbling and what is his name?

His name is Sun Tzu, a man that basically started principles of military strategies and tactics of war that still remain valid to present day. Every great military leader has been influenced by Sun's writing with every major war practicing them. Now, it is your turn to place Sun's strategies and tactics with an added spice of your own into realistic warfare. The only other tool needed is 'The Ancient Art Of War' from Br0derbund.

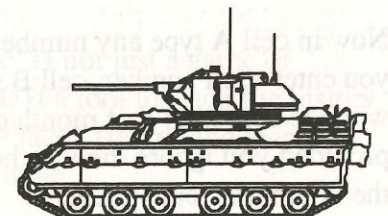
'Ancient Art Of War' places you into the role of a famous military leader such as Athena, Alexander The Great, Geronimo, Crazy Ivan, Julius Caesar, Genghis Kan, Napoleon Bonaparte and Sun Tzu himself. There are eleven campaigns to choose from. These range from the "Race for the flags" through battles such as the "The Contest Of the Gods", "Sherwood Forest", "Custers Last Stand" and other historic battles. The campaigns can range between one hours playing time up to ten hours playing time. You are not limited to the eight military leaders or the nine or so games. One delightful feature of the program is the Game Editor. You can make either your own battle or world, or you can make and recreate famous battles. Different military personnel can be substituted and therefore different outcomes will follow. The game that you play can be saved and recalled at any time of play.

With an 'Ancient Art Of War' campaign, you must seek out the enemy while they seek out you. Once the enemy has been spotted, the computer beeps and displays a message on the screen. If you zoom in, you now have the controls of your armies that are at war. You must either outrun or kill your enemy. If you disable a party and march up beside them, the screen switches to a display of a side on view of the two parties. There, you can fight it out between yourself and the enemy using swords. If you don't zoom in, the computer takes control of the battle. This is the easiest way when you are a beginner as while the battle is going on, you can read the manual and find out some of the commands.

The program comes in a superbly illustrated box, with a fifty page manual that is exquisitely designed. The manual is divided into three books. They are the instruction manual, planning guide including fighting strategies, and the last which gives a brief history of fighting and the historic wars that have been fought through the thousands of years.

'Ancient Art Of War' is a program designed by Br0derbund and those that know of Br0derbund will realize their programs are something special. 'Ancient Art Of War' is a very in depth strategic game that won awards for the Best Action/Strategy program of last year. It can be easy at times for the beginner or near impossible for the professional. 'Ancient Art Of War' is truly a pleasant and interesting program to play.

Program courtesy of  
DataFlow  
134 Barcom Ave  
Rushcutters Bay  
NSW 2011  
(02) 331-6153



# USING THE NEW FUNCTIONS IN APPLEWORKS V.3 SPREADSHEET

By Dave Stock

At long last one can process labels in Appleworks. Before version 3 you could not use labels in your formulae. In the last issue of Applications we had a spreadsheet template for your power bill which broke power usage into SEASONS for comparisons. Here is a formula which will automatically convert the numbers of the month into SEASONS.



First of all though, making use of only one row, put SUMMER in cell C, in cell D put AUTUMN, into E put WINTER and into F type SPRING.

Referring to these cells saves heaps of space for our formula, rather than actually typing the words directly into the formula. Now for the magic formula which consists of four nested 'IF' statements. Into cell B carefully type these 55 characters:

```
@IF(A1>11,C1,@IF(A1>8,F1,@IF(A1>5,E1,@IF(A1>2,D1,C1))))
```

Don't forget the opening bracket after each @IF, and the closing four at the end. Make sure that you get your 'greater than' signs correct and check each comma.

Now in cell A type any number from 1 to 12. As you enter each number, cell B should come up with the season of that month of the year, that is, provided you ignore the weather and you live in the Southern Hemisphere.

# More PEEKs, POKEs and CALLing

By Grant Kwai

Here are some more little commands you can try out in DOS 3.3 and ProDOS. Many of these are useless, but people, like me, who like to fiddle around with DOS to see what happens, may appreciate them.

Type these pokes to display only the filename in a catalog:

```
POKE 44507,16:POKE 44508,54
POKE 47617,12 :Speeds disk access up.
PRINT PEEK(978) :Dos 3.3=157, ProDOS=190,
Applesoft=148
POKE 50,128 :Makes CATALOG invisible.
POKE 42350,60 :Prevents CATALOG.
POKE 42350,169 :Allows CATALOG.
POKE 49384,0 :Stops drive motor.
POKE 49385,0 :Starts drive motor.
(WARNING! Potentially dangerous for your
data)
CALL -756 :Wait for a key press.
CALL -1370 :Boots disk.
CALL -1401 :Also boots a disk!
```

I may be writing an article on how to put a number of simple commands into DOS 3.3 so as to protect your disk (to an extent) from prying eyes. The technique involves a number of POKES, PEEKS and CALL routines. The best thing though is that it will be CopyA'ble. However, don't expect these to keep anyone with any knowledge of DOS from "cracking" your disk! I will write the article if demand is great enough. So if you want to know how, write me a message on the Apple // BBS or give me a call on



(02) 872-2758

# Where In Time Is Carmen Sandiego

Reviewed By Robert Brown [RB] and Wal Glynn [WG].

## Requirements

- An Apple //e with at least 128k, //c, or //GS
- One disk drive preferably two

## Optional

- Mouse or Joystick
- Colour Monitor

WG: "Carmen Sandiego" has stepped up a notch with this program from the very compelling, and educational, series about the adventures of this master criminal.

RB: The basic ideas of the other Carmen Sandiego games (Europe, USA, World) are there. That is, you piece together clues and follow her to different places but these places range from the 5th century up and including the 21st.

WG: As usual the graphics are excellent and there have been some interesting graphic features added to this program. The Headquarters of the Acme Detective Agency - Time Crimes Division - is located in a five storey building, somewhere in San Francisco. When you enter the building you are faced with the door to the lift - a notice on the left side indicates that Personnel is on the second floor.

RB: You now have to work out how to get to the right floor first which makes the start more exciting.

WG: From this point on, your office will be

determined by your skill as a detective - the more skillful you are, the higher up the building your office is placed. Unlike the earlier programs, you are only identified by going to the floor that your rank entitles you to be on. All of the records are kept in the basement - you can delete names of agents here (as well as establish their rank).

RB: You also have now in your possession a 'Chronoskimmer Model 325i'. What is that? It is your main tool for transportation through time, data entry, and clue searching. It is a display for your destination, current position, current year and time remaining.

WG: The use of the Time Leap is not threatening - you do not have to establish a time, the program does that for you in most instances. That is, if you assess that you have to go the

China you are normally presented with the one option and away you go! However, be careful, in one episode I was presented with two options to go to China - in different centuries, so be aware that you can be caught.



WG: Your journey (and your time allocation) commences from some location earlier in time. Your success in capturing Carmen replies on your use of the four keys "Time Leap, Clues, Data, and Abort". "Clues" present you with three options - Witness, Informant and Scanner. "Data" allows you to build up information in Evidence or Dossiers. Evidence is the standard location for placing clues to get a warrant for the criminal, Dossiers provides information about all of the criminals in the program. When you have gathered sufficient clues to justify a warrant, a Capture Robot is put on the job and provided you are in the right place at the right time, the capture is made and your office moves upstairs.

RB: 'Where In Time' is not just a game of playing detectives. It is a tool to teach the history of the world. All the facts, figures and events in the program are accurate.

RB: 'Where In Time' comes complete with a Detective's Manual, two 5 1/4 inch disks (with the ability to load it onto a hard disk which I would recommend), a fold out sheet with pictures of 16 known friends of Carmen Sandiego, and a 4 inch, 1374 page, paperback Desk Encyclopedia containing all the information that will have to be looked up through the game. The Encyclopedia can also be used by anybody in their history course at school or just for general reference.

RB: Like the other Carmen games, this one is a joy to play and apart from having basically the same game idea behind it, the graphics and time

concept make it interesting.

WG: All in all an excellent program - Carmen tends to mature with age. My thanks for Mrs Patricia Stemp for a loan of the program to review - Patricia won the program at the February Apple // meeting where Dataflow demonstrated their range and allowed the club to raffle three programs - thank you Dataflow.

Program courtesy of DataFlow  
134 Barcom Avenue  
Rushcutters Bay NSW 2011  
(02) 331 6153



## Lower Case Dos 3.3

By Grant Kwai

One of the major hassles with Dos 3.3 is it's inability to handle lower case characters. Luckily, this has been fixed with ProDOS. How many times have you typed in a line and pressed return only to discover that you get a syntax error because you forgot to press the Caps lock key down?

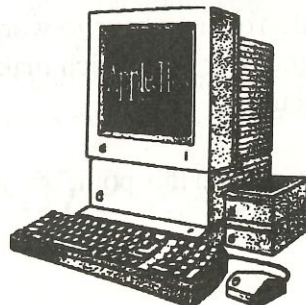
Well, worry no more.

Below is an extract which I obtained from an old A2 central (Formally Open-Apple) magazine. It gives the Pokes required to allow lower case letters. This modification will work with most versions of DOS, including some modified versions of DOS.

You can use the below Pokes in two ways. Either you can save type in the program then save it as a file, or you can type it in, run it, then init a disk with it on so as to have a permanent lower case accepting DOS. With the first method of saving it as a file, just run it each time you want lower case.

Lower Case DOS.

```
10 POKE 40268,121
20 FOR I=0 TO 9:READ J:POKE 40290 +
I,J:NEXT
30 POKE 41374,32
40 POKE 41375,98
50 POKE 41376,157
60 DATA 142,93,170,201,224,144,2,41,223,96
```



# DOWNHILL CHALLENGE

from Br0derbund

Reviewed by Michael Graf

Requirements:

- Apple //GS with 512k.

Optional:

- Joystick.

"Take a deep breath, grit your teeth, and go for it!"

That's how the product description, on the back of DOWNHILL CHALLENGE, describes this great, new game for the Apple //gs. To be honest, they're not wrong !!

For all skiing enthusiasts, waiting eight months for the snow to fall in the Snowy Mountains is often a great hardship. Australia has good weather (usually), but the lack of snow, with the exception of 4 months during the year, can make a skier a little anxious. So spend a few hours relaxing, and get involved in DOWNHILL CHALLENGE (DC), where you can play or practice four of the world's best skiing events. These are:

- o Downhill
- o Slalom
- o Giant Slalom
- o Ski Jumping

Many sport's simulations are available now days, especially for the Apple //gs (GS), but this is the first true skiing one that I have heard about. For the real keen skiers, DC allows us to relax and

get involved in this wonderful sport, but also to try, and succeed at, events we might never actually have the opportunity to participate in.

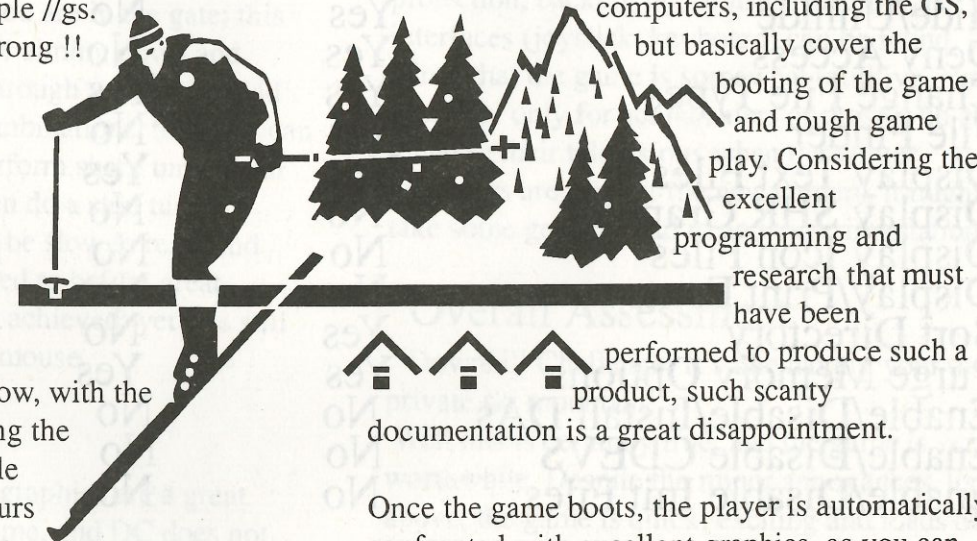
## Game Mechanics or How the Skis Fit On

DC comes on two disks, one basically being the operating system, and the other containing the program and data files required for the game to function. (For some unknown reason, disk one contains ProDOS 16v1.2 as its operating system and the Apple //gs program launcher; since both these are now more than two years out of date, I am surprised that they are still being used.) It is produced by Br0derbund, a company well known for their excellent products.

Instructions within the package are sparse (almost too sparse), covering a multitude of computers, including the GS, but basically cover the booting of the game and rough game play. Considering the excellent programming and research that must have been performed to produce such a product, such scanty documentation is a great disappointment.

Once the game boots, the player is automatically confronted with excellent graphics, as you can choose to register in an event or practice an event. First time users would be well advised to practice a lot before attempting serious time trials. The game allows you to compete against a world-class computer opponent who know the slopes very well, or against multiple players (one at a time, named by the computer or by the player), or simply practice, any of the four events.

You can pause the game simply by pressing Control-p (so you can answer the phone when it



## File Managers at a Glance

|                            | ProSel-16 | JumpStart | UtilityWorks |
|----------------------------|-----------|-----------|--------------|
| Version                    | 8.1       | 2.5       | 0.8          |
| Price (\$US)               | \$60.00   | \$29.95   | \$25.00      |
| Computer Model             | //GS      | //GS      | //GS         |
| Memory Required            | 512K      | 512K      | 512K         |
| Operating System (GS/OS)   | 5.0.x     | 5.0.x     | 5.0.x        |
| Graphic Interface          | No        | Yes       | Yes          |
| Documentation              | 60 pages  | 24 pages  | 80 pages     |
| On-Line Help               | Yes       | Yes       | No           |
| <b>FILE MANAGEMENT</b>     |           |           |              |
| Catalog                    | Yes       | Yes       | Yes          |
| Copy                       | Yes       | Yes       | Yes          |
| Delete                     | Yes       | Yes       | Yes          |
| Undelete                   | Yes       | No        | No           |
| Lock/Unlock                | Yes       | Yes       | No           |
| Verify                     | Yes       | Yes       | Yes          |
| Hide/Unhide                | Yes       | No        | Yes          |
| Deny Access                | Yes       | No        | Yes          |
| Change File Types          | Yes       | Yes       | Yes          |
| File Finder                | Yes       | No        | Yes          |
| Display Text Files         | Yes       | Yes       | Yes          |
| Display SHR Graphics       | No        | No        | Yes          |
| Display Icon Files         | No        | No        | Yes          |
| Display/Print Fonts        | No        | No        | Yes          |
| Sort Directory             | Yes       | No        | No           |
| Purge Memory Options       | Yes       | Yes       | Yes          |
| Enable/Disable/Install DAs | No        | No        | Yes          |
| Enable/Disable CDEVS       | No        | No        | Yes          |
| Enable/Disable Init Files  | No        | No        | Yes          |
| <b>SUPPORT UTILITIES</b>   |           |           |              |
| Backup/Restore             | Yes       | No        | Yes          |
| Optimiser                  | Yes       | No        | No           |
| Disk Repair Utility        | Yes       | No        | No           |
| Block Editor               | Yes       | No        | No           |
| <b>MISCELLANEOUS</b>       |           |           |              |
| Volume Copy                | Yes       | Yes       | Yes          |
| Print Buffering            | No        | No        | No           |
| Command Line Processor     | Yes       | No        | No           |
| PC Transporter Support     | No        | Yes       | Yes          |

rings - very annoying in the middle of a fast tuck) or even quit an event, and the game can be exited back to the launching system simply by selecting EXIT from the main screen.

Though the game states it can be played by mouse, keyboard and joystick, the latter would be the recommended means to do so. The mouse is a little too sensitive to be a great device. However, the instructions do NOT tell you how to access the joystick, and so persistent trials are necessary to get it to work with DC. Then there is nothing but speed and snow to get involved with. As you ski down, the snow and scenery, which include the crowd, trees and other obstacles, fly past, as the sound of running skies echoes across the room. Truly a great experience for the first time skier, or the expert ski jumper.

You can use the numeric keypad on the GS by simply hitting '8' when you are in the gate; this tells the game that you are aiming down and moving forward. Then, through various keypad and apple-keypad key combinations, the skier can be turned left or right, perform sharp turns, lean down or stand up and even do a stop turn. However, the keypad can be slow to react and may take some getting used to before great proficiency with it can be achieved; yet it is still preferable than using the mouse.

### Good Points

Naturally, the sound and graphics are a great selling point for such a game, and DC does not let the user down. Run without Transwarp GS (a means of speeding up the GS), the game still flows and moves very quickly, as the animation is smooth and accurate. The sounds and digitised voices help create an atmosphere of 'being there and actually hitting the slopes'.

Also, having four different games and a good computer opponent, makes DC very replayable, an important point for many gamers these days. However, not only are there four events, but each can be performed on the Beginner, Intermediate or Advanced ski runs, which can mean the

difference between a gold medal run, and ending up, face down in the snow (which will happen often, believe me!).

### Unfortunate Short Comings

With many software packages having no copy protection, the fact that DC uses a key disk system is a little annoying. For those who have not come across this form of copy protection, before the game can be played from a backup copy, you are asked to insert the original disk. I am pleased, however, to say that this means that the game can be run from a hard drive (and is compatible with System 5.0.2), as long as you have the original handy. So I suggest that you create a back up copy and play with that, and protect the original which is vital to play DC.

The instructions, for they do not truly qualify as a manual, are very skimpy. No mention of copy protection, backing up, or using the optional interfaces (joystick, keyboard) can be found. I admit that the game is somewhat intuitive, but probably only for actual skiers or those who are glued to their televisions when the winter Olympics are on. For the new comers, it might take some getting used to and experimentation.

### Overall Assessment

"Downhill Challenge: It's like having your own private ski mountain!"

Well this is certainly true, and the game is very worthwhile. Despite the minor annoyances, listed above, the game is quick, exciting and loads of fun. You will swear that you can feel the wind whip past your face on the Giant Slalom, and that shifting your chair helps your ski jumper gain those extra few metres.

With four events and three levels of play, Downhill Challenge should provide many hours of entertainment, during the long summer months until the ski season starts.

Go for it !!!  
Downhill Challenge comes on 2 x 3.5" disks: 1 system, 1 game disk; and is available for \$49.95 from Dataflow.

Rating: Standards:  
 Graphics: \*\*\*\* \*\*\*\*\* = excellent  
 Sound: \*\*\* \*\*\*\*\* = very good  
 Entertainment: \*\*\*\* \*\*\* = good  
 Documentation: \* \*\* = acceptable  
 Interface: \*\* \* = poor

Review copy courtesy of  
 Dataflow Computer Services  
 134 Barcom Ave  
 Rushcutters Bay NSW 2011  
 (02) 331-6153

## Downhill Challenge

# GRAPHICS CONVERTER

from Pelican Software  
 Review by Robert Brown.

Requirements:  
 - Apple // series computer with atleast 64K.  
 - SuperPrint(TM) graphic printing program.

The "Graphics Converter" program is one of those nice small add on programs that then make the main program, in this case "SuperPrint", a useful program. Basically the program converts graphics from PrintShop, HiRes Screens, Scholastics Slide Shop, and other known graphic programs. It also converts fonts from PrintShop, Fontrix and GS Fonts so they to can be used with SuperPrint.

Converting graphics or fonts over usually entales hours of work trying to get the graphic you want and where it is going. The Graphics Converter makes this job relatively simple that even a child could do it. Most of the conversion is menu driven. All operations can be carried out with ease from the main menu by selecting the choice and then pressing the return key.

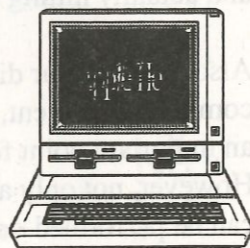


After the operation of converting the graphic across is successful, you can the proceed with other special features. If it is in graphic form, these include changing the height, width or screen display, whether to Invert it or keep it normal, flip it either horizontal or vertical, or mirror it left, right, top or bottom depending on the user's preference.

Apart from importing fonts and graphics from other sources, the program lets you modify Superprint's own fonts and graphics. The above listed features will can also be implemented.

Graphics Converter is a reasonable program if you have SUPERPRINT. If you don't have it, the program is fairly useless as the features it offers cannot work with any other program.

Review copy courtesy of DataFlow  
 134 Barcom Avenue  
 Rushcutters Bay NSW 2011  
 (02) 331 6153



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# SPREADSHEET STUFF AND THIS WINTER'S ELECTRICITY BILL

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By Dave Stock.

All the material in this article will work with  
 Appleworks v2.0 and upward.

Many of us have Appleworks and use only the word processor section. Here is a good use for the spreadsheet portion which could save you a lot of money if you can see more clearly where your electricity dollar is going. We are all only too familiar with the sight of the quarterly Power Bill from the SCC. The post-winter one is always the worst. Here is a sample of mine from last year:-

## 1| CALCULATION OF SCC POWER BILL FOR WINTER 1989

| 2  | ====A===== | B=====   | C=====   | D=====  | E===== | F=====   |
|----|------------|----------|----------|---------|--------|----------|
| 3  | Tariff     | Previous | Present  | kWh     | Cents  | AMOUNT   |
| 4  | Reading    | Reading  | perBlock | per kWh |        |          |
| 5  | =====      |          |          |         |        |          |
| 6  | Domestic   | 69527    | 71854    | 200     | 12.74  | \$25.48  |
| 7  | Domestic   |          | 2127     | 9.22    |        | \$196.11 |
| 8  | Off Peak   | 15416    | 16209    | 793     | 3.30   | \$26.17  |
| 9  |            |          |          |         |        |          |
| 10 |            |          |          |         |        | \$247.76 |
| 11 |            |          |          |         |        | =====    |

## Formulae, Dollar Layout and Recalculate

Now boot up your Appleworks spreadsheet and starting from the top left corner, enter this example into it. Numbers and their symbols are easily accepted. If it is characters you want to enter and not numbers, the spreadsheet can generally understand that. If it does not, then you must start your entry with a quote mark. This will become clear to you when it spits out the

"equals" signs which make quite a nice underline. Do not try to put in \$ signs until last. Also, the entries in the column under "AMOUNT" are entered as calculation formulae which can be started with a bracket. For example, where it reads \$25.48, simply type this in:- (D6\*E6/100). D and E are columns, 6 is the row, \* means times and / means divide. Where it reads \$196.11, enter (D7\*E7/100). At \$247.76, you guessed it, (D8\*E8/100). Now to add up this column for the final tally of your bill. This command is a little different. Just type in @SUM(F6..F8). Now you can see the magic of the spreadsheet.

Now for those dollar signs. Position the screen cursor on the 25.48. Hold down the Open Apple key and press L. Now it's asking you for the Layout. Press C for Column for a dollar format and press Return. Press V for value, D for dollars, and of course, 2 for the decimal places which gives you the cents. Now if you want to change any of the meter readings you will notice that the spreadsheet will respond by recalculating this all over again. Should you want to stop this automatic feature during entries of large amounts of data, then press OA-V, R for Recalculate, F for frequency, M for manual. Now if you want the calculation to take place just hit Open-Apple-K.

Get out your own power bill and enter it into this format. All you need to type in are the two meter readings for each tariff. Everything else is done automatically. Hopefully the rates have not been put up before this article gets to you!

## Lookup Tables and Leap Years

You have probably noticed that the Council has made no mistake in calculating what you owe them. Their spreadsheet works too! Now if you

feel a little more daring, you could add a few of your older SCC bills together in a certain format just to see where your excessive use of electricity could perhaps be curtailed. You might even be able to justify the purchase of your computer to the rest of the family!

One nasty little problem comes up though. How can you count the days between meter readings? Well, this is a bit cumbersome, but not complex. Calculations can be made by processing the date entries. You must enter the month as a number to make this possible. The name "June" can not be calculated. Its number 6 will indicate that 5 months have preceded. Zero will indicate that January has no months preceding it, and the day entry for January simply equals the number of days. This gives you the number of days into the new year, the "nth" day if you like.

What about February with its varying number of days you ask? O.K. this method is a bit awkward but works quite well. Remember that a leap year is calculated by dividing by 4. (Please do not remind me about the year 2000. We will just have to skip that non leap-year!) There is a handy function in the spreadsheet which will look up tables, so we must make up a table to calculate the days.

The function is written:- @LOOKUP(reference, range). It will return the adjacent value, just as in a table. Let's say we will deal with the date 6th June. The entry would be 9-6-1990. If the function is directed to June by using the number 6, then it will go to 6 in the table alongside which we will have cleverly put the number of days it is up until June, i.e. 151.

The day entry will give the number of days in June, 9. The total is 160. This enables us to count the days between two different dates.

Now by using this method we are able to work out how many units of electricity we are using per day. We can also compare the summer bill with the winter bill etc.

## If, Then, Else Choosing Function

There is another function we must use in this exercise which can be explained as a choosing process. It is an instruction which says "If ^this^ is true, then do that, otherwise do something else". This function is typed in this way:- @IF(true,then,else). One must use numbers though, not words.

For example I mentioned that we must be able to identify a leap year from a common year, otherwise you would sometimes be a day out in reckoning. If the year divides by four and there is no remainder, then that is a Leap year, so go to the table for leap years. If there is a remainder, that is to say, if the remainder is greater than zero, then go to the table for Common years. Now you will have a better idea how the spreadsheet will calculate the number of days between one date and the next over the period of one year.

Believe it or not, you can insert the @LOOKUP command inside the @IF choosing function. In fact that is precisely what we are going to do to count the days. Study this expression. IF it is a leap year, then LOOKUP this table, else LOOKUP that table. Now in Spreadsheet language it is written like this:- @IF(F5<366,@LOOKUP(B5,B37...R37)+A5,@LOOKUP(B5,B40...R40)+A5

The formula looks complex but is not. It is simply clumsy, but it works and that's the main thing. Notice that I have used the "less than" mathematical sign "<" to determine the common year from the leap year. This formula fits in with little room to spare as you will see!

When one is creating a new spreadsheet and there are empty cells where figures are yet Not Available it pays to use the function @NA. If you do not, then formulae relating to this empty cell will go berserk. First of all though, let's provide for our headings to line up with the figures. Press Open-Apple V, L(abel), R(ight

provide for our headings to line up with the figures. Press Open-Apple V, L(abel), R(ight justify). All our headings will now line up on the right with the figures.

## The Tables

Now to make sure our @LOOKUP formulae has something to look at, let's put in the lookup tables. Starting at cell block AH2, (30-odd cells to the right), put in MONTH, in AI2 put in JAN, in AJ2 put FEB. Instead of pressing Return for each entry, simply press Right Arrow. Your entry will be accepted and your cell cursor will be placed at the adjacent position for the next entry. Continue until all months are in place, ending with DEC in AT2.

Now leave a row blank and put in COMMON in AH4, 1 in AI4, 2 in AJ4, continue until 12 is in AT4. Now in AH5 put YEAR DAYS, in AI5 put 0, in AJ5 31, AK5 59, AL5 90, AM5 120, AN5 151, AO5 181, AP5 212, AQ5 243, AR5 273, AS5 304, AT5 334. Now skip row 6. (This sounds like knitting.) In AH7 type LEAP, in AI7 1, AJ7 2, continue up to 12 which should end up in AT7. Now in AH8 type YEAR DAYS, in AI8 0, in AJ8 31, AK8 60, AL8 91, AM8 121, AN8 152, AO8 182, AP8 213, AQ8 244, AR8 274, AS8 305, AT8 335. You have probably noticed the extra day count after February in the Leap year table.

## Protecting your entries

Hopefully you have entered this table and corrected all errors. Now is the time to protect this block of data from being altered. Press OA-L, B, highlight the whole block, Return, P(rotection), N(othing). Now it will not be easy to alter this table area. Do this with all of the formulae that you enter.

This will ensure that your spreadsheet will remain reliable, unaltered perhaps by an overstrike cursor or wrong key press.

## Increasing Column Width

It should not be necessary at this stage to change the width of the columns. The standard setting of 9 will do. When later you may have to increase the width of a column press OA-L, C, Return, C, OA-Arrow right to increase, Return.

## Typing in the Heading

Now let's go to the heading. To try and make it clear in this article I have used a lower case alpha in front of each word block to mark the cell and a minus sign to indicate a blank cell. Do not type these symbols in or the commas either! We will work on one row at a time. Starting at cell block A1, B1, C1 etc. type in capitals each word followed by the Right Arrow:- aDAY bMONTH cYEAR dDOMESTIC eOFFPEAK fLEAP OR gDAY hBILLING iDOMESTIC jDOMESTIC kSEASON lDOMESTIC mBASE nDOMESTIC oDOMESTIC pDOMESTIC qOFFPEAK rOFFPEAK sSEASON tOFFPEAK uOFFPEAK vYEARLY wTOTAL xAVE/ANN yTOTAL zYEAR.

Now for row 2. a- b- c- dREADING eREADING fCOMMON gIN hDAYS iUNITS jUNITS k- IBASE mRATE nBASE oRATE pCHARGE qUNITS rUNITS s- tRATE uCHARGE vDAYS wUNITS xDAILY yFOR z-

Row 3. a- b- c- d- e- fYEAR gYEAR h- iUSED jDAY k- IUNITS mPerUNIT nCHARGE oPerUNIT p- qUSED rPerDAY s- tPerUNIT u- vCHARGED wUSED xUNITS yYEAR z-

Row 4. Starting with a quote symbol, fill A through Z with = signs.

## Entering the Formulae

Before we do this, there are a couple of things we need to instruct the computer to do. One is to calculate in rows rather than columns. The other is not to calculate automatically every time you enter something, slowing down the whole job. Press OA-V, R(ecalculate), O(rder), R(ows). Press OA-V again, R, F(requency), M(annual).

If while entering a formula you get bipped, you have done something wrong, so double check your entry especially those brackets! Do not worry about the ERROR message in the cell. As long as we have those @NA's in place all is well. Row 5. a@NA b@NA c@NA d@NA e@NA f@IF(C5/4>@INT(C5/4),365,366) g@IF(F5<366,@LOOKUP(B5,AI4..AT4)+A5,@LOOKUP(B5,AI7..AT7)+A5) h- i- j- k- l\*\*\* m\*\*\* n- o\*\*\* p- q- r- s- t\*\*\* u- v- w- x- y- z-. Protect those formulae! Now for some copying. Place cursor on A5. Press OA-C, W, highlight 5 NA's, Return, D(own) A(rrow), .(point), DA, DA, DA, Return.

Place cursor on F5. OA-C, W, Return, DA, ., DA, DA, DA, Return, R, R, R, R. Place cursor on G5. OA-C, W, Return, DA, ., DA, DA, DA, Return, R, R, N, N, R, N, N, R.

Note that when copying these formulae that this is the only place where you will answer NO CHANGE in the cell reference. Here it is referring to the tables we created. Since the table simply stays in the same place, the cell reference always remains the same. Do not worry about the ERROR prompts. As long as the formula remains unchanged in the lower left line on your screen when you have the cursor over the appropriate cell, all is still O.K. Be careful to get the formulae correct. The most common problem is getting the parentheses in their pairs. Look for pairs!

Place cursor on H6. Enter @IF(G6>G5,G6-G5,G6-G5+F5). Now copy. OA-C, W, Return, DA, ., DA, DA, Return, R, R, R, R, R, R, R. Cursor on I6. @IF(D6<D5,0,D6-D5). Copy. OA-C, W, Return, DA, ., DA, DA, Return, R, R, R, R.

Cursor on J6. (I6/H6). Copy. OA-C, W, Return, DA, ., DA, DA, Return, R, R. Layout. OA-L, C, Return, V, F, 1 Return.

Place cursor on K6. Type in SUMMER. D(own) A(rrow). Type in AUTUMN, DA, WINTER, DA, SPRING.

At L6 type in 200. Repeat down to L9. This figure could be changed by SCC in the future so mark the top of this column with an asterisk if not already done.

At M6 enter 12.74 and repeat down to M9. Mark the top of this column also with asterisks. At N6 type (L6\*M6/100). Copy down to N9. All cell references are Relative. Layout for Dollars.

Cursor at O6. Enter 9.22 and copy down to O9 as before. This is the Domestic rate per unit. Asterisk markers above.

At P6 enter this:- -L6+I6\*O6/100. Copy specifying Relative down to P9. Format for Dollars again. Watch alpha I and alpha O, They are not ones and zeros.

At Q6 enter @IF(E6<E5,0,E6-E5). Replicate down to Q9 and as before specify Relative. At R6 Enter (Q6/H6). Copy down to R9.

Layout for 1 decimal place. Starting from S6 type SUMMER, AUTUMN, WINTER, SPRING down to S9.

At T6 enter the Offpeak Rate per unit 3.3. Copy down to T9. Place Asterisks above this one too. This Flag will make it easier to find when SCC increases its rates again.

At U6 type (Q6\*T6/100). Copy down to U9 specifying R. Now format for Dollars. At V9 enter @SUM(H6..H9). Did you get that in row 9?

At W6 enter (I6+Q6) and Copy down to W9 At X9, (W9/V9). Format for one decimal place. At Y9, @SUM(N6..N9,P6..P9,U6..U9). Layout for Dollars. Also this column may have to be widened.

At Z9 type in (C9)

## Using Your New Creation

Now you have your spreadsheet analyser for your quarterly electricity bill. All you have to do

# FILE MANAGERS FOR THE APPLE //GS



Product reviews by Wayne Short

With the advent of more powerful software for the Apple //GS (finally!!) its users have begun to reach the following conclusions: more directly addressable memory and a hard disk are required to take advantage of this.

To run any of today's "useful" programs e.g., APPLEWORKS GS, PAINTWORKS GOLD, your system must have 1.25 megabytes of RAM available. Those contemplating program development will probably not be satisfied unless they have 2.00 megabytes of memory.

Similarly, the entry level for purchasers of hard disks is now 20 megabytes with a 60 megabyte hard disk a desirable option.

The GS Finder with its 'WIMP' interface is currently the default program selector by virtue of its distribution with the GS operating system. The release of System Disk 5.0 sees it in its fourth incarnation with all the maturity that brings. However, recently other authors have been writing program launchers/file managers to address any shortcomings they feel present in the Finder.

All the file management packages reviewed here combine the features of a menu selector with those of a file utility. (In fact, UtilityWorks takes this to its furthest extent by offering a separate launcher and utility program). They are all native 16-bit Apple //GS programs and therefore cannot

be used on an Apple //e or //c.

A program selector contrasts with the icon based Finder where the desired application is highlighted on a user-defined menu and is executed by a press of a return key or a mouse click. Each menu has restricted number of titles per screen but other menus also can be invoked providing a flexible launching system.

The use of multiple menus allows your favourite applications to be grouped by type if so desire i.e. all utilities to reside on one menu while all the games reside on another.

## PROSEL-16

ProSEL (PROgram SElector) is perhaps the most widely recognized file-management system. While similar to Prosel-8, Prosel-16 surpasses its predecessor in speed and power.

Applications can be added to the program-selector menus via the ProSEL editor, in automatic or manual modes.

The utility portion of the ProSel provides file and directory manipulation tools. Files can be copied, deleted, locked, unlocked, verified, and compared. A fast hard disk backup and restore program makes it easy to backup all or part of a volume.

Another option available from the ProSel utility menu will attempt to repair a damaged volume, correcting bitmap errors, correcting bad directory pointers and more. (The utility has the potential to be dangerous and should only be used on volumes that have been backed up).

A disk "zap" utility or Block Editor is available to read and write data to a disk. Data retrieved can be disassembled and even edited. (Not really a task for the novice!)

## JUMPSTART

JumpStart is a "shareware" package written by David R. Hill. It has all the refinements you would expect from a commercially available

now is enter the figures in the first five columns. Get out your first bill for 1990. On it you will see two reading dates. The first one is the Previous Reading date. Enter this date by numbers into the very first cells under the headings "day, month, year" right on top of the NA's to wipe them out.

Now look on your bill for the "Previous Reading" alongside Tariff 321. This is the Domestic Tariff. Type this into the Domestic Reading at cell D5. If you have Offpeak hot water this is the Previous Reading alongside Tariff 331, the Offpeak Tariff. Type this into the Offpeak Reading at cell E5. You will never have to enter a Previous Reading again on this spreadsheet.

You are now ready to enter the data that you should copy from each bill as you receive it. Enter the Present Reading date, the Domestic Tariff Reading and the Offpeak Tariff Reading.

That is all, just those five data from each bill. Now press OA-K to do the calculation. Now the full magic of the spreadsheet shows its power. All the analysis is presented to you in a matter of seconds! From time to time you will notice a price change in the Cents Per kWh column. Enter these changes into the spreadsheet in their appropriate places. This is where the asterisk "flags" come in handy.

For each year you should copy the lower four rows further down on the spreadsheet for the next quarterly bills. After you do that, enter the @NA command into each of the first five columns, hitting OA-K to prepare for the next lot of entries.

Whenever you come across the @LOOKUP formula during replication, always remember to enter "No Change" when the references are to the

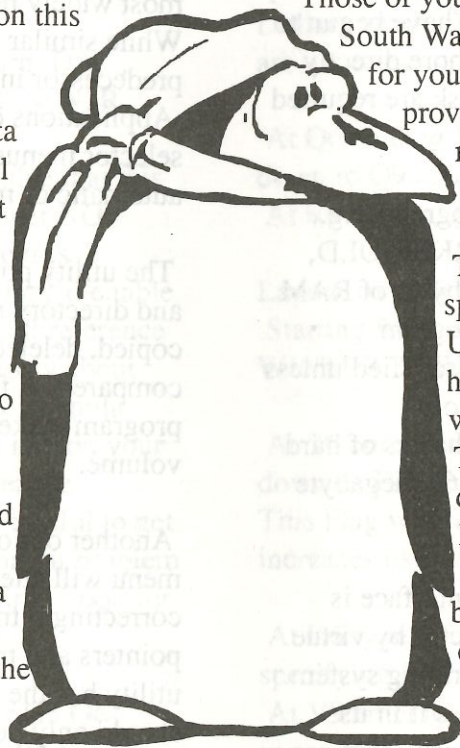
Lookup Table. Everything else qualifies for the "Relative" instruction. It is a good idea to insert a blank row between the years for clarity. Do this only ^after^ replication.

## Watch For Anything Unusual

As you study your spreadsheet, you will notice heavier demand for power in the winter months. Keep an eye on the Offpeak usage if you have it. Watch that this does not get too low in demand. If this happens, it is possible that your Offpeak switching is not operating properly. That means you will be paying the higher Domestic rate to heat your water.

Those of you who read this article outside New South Wales will have to change the values for your own local tariffs. This should not prove to be difficult, as most power reticulation bodies have a similar way of reckoning their charges.

Those who use gas could adapt the spreadsheet to function similarly. Unlike Telecom these organisations have meters on your property which you can check at any time. This is a fair practice which avoids disputes. They also give you the last reading too, which means if there is a reading error, there will be no overlap charging as it will even out in the next bill.



## Printing it Out

If you are fortunate enough to have Timeout Sidespread, this is an excellent program to use to print out this spreadsheet sideways on your fanfold paper. That way you can get an uninterrupted printout to study.

If not, then you will have to be content with printing out a few columns at a time and sticking them together later.

Try to configure your printer to print out the most condensed characters it possibly can in order to keep your printout smaller and save those trees!

software package: Super-Hires screens, pulldown menus, mouse implementation, and more.

This program selector provides you with a quick "Run List" or roster of frequently used programs. The list can be contained on an unlimited number of screen pages, each with 16 program titles. This list can be installed, edited, or deleted at any time via a point and click process with the mouse.

Launching EXEC files from JumpStart is also supported. An option is also provided from creating a small text file to be used for "EXEC"ing an application.

JumpStart also includes a set of file manipulation utilities. Volume copy and disk formatting are also available. Currently no facilities for full or partial backups of volumes are provided.

A nice touch is the 64K print buffer which comes in handy if you wish to print a large text file and then carry out some house-keeping on your files: no need to wait for all the text to print!

## UTILITYWORKS

Utilityworks is another shareware product for the //GS. It consists of a separate launching program and a file management package.

The program launcher may have up to 10 menu screens with 30 selectable items configured on each. The desktop and background colors are programmable for each application when it is launched.

The main program, 'UTILITYWORKS', has file management options for both volumes and files. Files may now also be copied across an Appleshare network. Its latest revision also has the facility for backing up or restoring volumes / files / directories.

However it also has some interesting capabilities:

- \* A facility to display/print SHR graphics in either 640 or 320 mode
- \* A facility to display/print any font anywhere on a volume
- \* A facility to display/print the objects contained

in Icon files.

## CONCLUSIONS

Each program offers its own strengths: Prosel-16 offers many utilities for editing/repairing files or hard disks while Utilityworks offers unique facilities for displaying ICONs, SHR graphics and fonts.

## PROSEL-16

Glen R. Bredon  
521 State Road  
Princeton, NJ 08540, USA  
List Price: \$60.00 (USD)

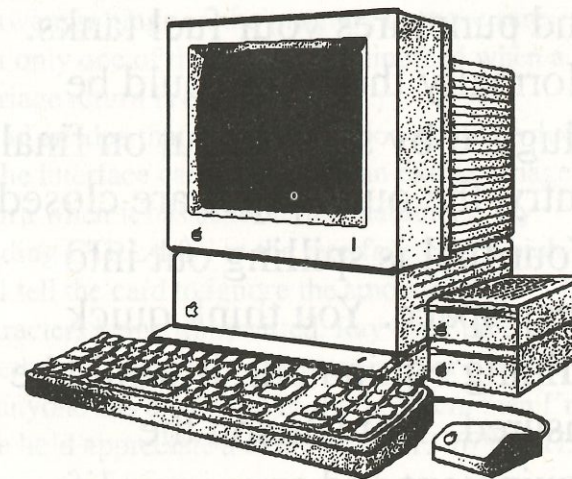
## JUMPSTART

MainFrame Software  
Box 315A, Cousins Island,  
Yarmouth, ME 04096, USA  
List Price: \$29.95 (USD)

## UTILITYWORKS

(launcher and utilities)

George R. Wilde  
24402 Broadwell Ave.,  
Harbor City, CA 90710, USA  
List Price: \$25.00 (USD)



# MINES OF TITAN

from Infocom

Review by Robert Brown

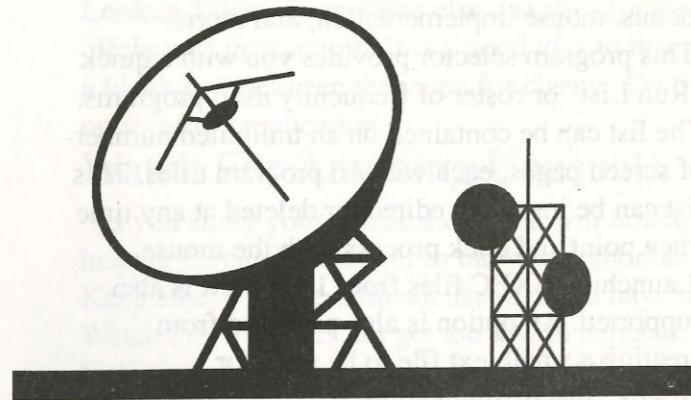
## Requirements

- An Apple //e with atleast 128K ram, //c or //GS.
- One 5 1/4 inch drive.

## Options

- Joystick
- Colour Monitor

It's taken a long while. Two years of cryogenic suspension. When you wake up from it, it seems like someone kicked you in the head. Two hours ago, sensors picked up the nearing of your destination, Titan, a small satellite of Saturn. As you started your final entry, a small rock flings from one of Saturn's rings and punctures your fuel tanks. Normally the hole would be plugged by sealant, but on final entry, the outer pipes are closed. Your fuel is spilling out into deep space. You think quick. Mining equipment, it would be insured. You jettison the equipment and save your life.



Unfortunately, the 'Paramount Mining Company' didn't think that saving a life was worth more than saving mining equipment. You have to sell your ship in order to pay for their equipment. You're stranded on Titan. There is no work for astronauts. The only work available is mining or bounty hunting. You choose to be a bounty hunter thinking that is easy work, until you are given your assignment.

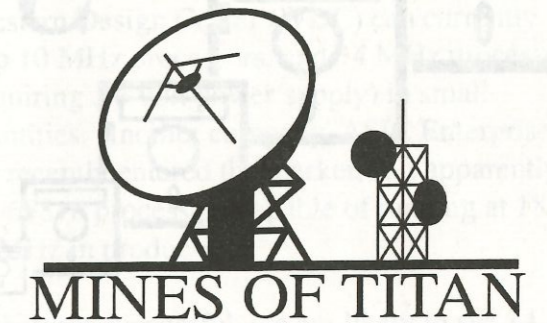
'Mines Of Titan' is a role playing adventure set in the 22nd century. As a bounty hunter, you must create and control a party of characters to explore the satellite. You must improve yours and your party's skills before entering the vast deserts on your mission. You must earn credits which are needed for training and buying special weapons. And what about this mission? The 'Paramount Mining Company' has lost a city. It was the newest city built on Titan and now, all telecommunications have been lost. The mission you are sent on involves seeking out the lost city and destroying anything that stands in your way. You must be aware of Titan's natural beings such as Crushers, Dust Worms, Sand Loins, Scorads, Thrashers, and Urchins. Each are deadly in their own different way.

Throughout the adventure, you will have to fight. Options of combat allow full computer control or full player control (the computer controlled is best when you are learning). Each city you visit is a labyrinth of computer terminals, Armory Shops, Bars, Gambling places and Police stations. One important fact to remember is in this game, the Police are your friends.

Most adventure games now have menu driven interfaces containing the commands needed to play the game. 'Mines Of Titan' is no exception. Screen layout is in the form of graphic windows displaying commands, aerial view and ground view of your present situation and your life statistics.

The game comes on one 5 1/4 inch disk, and is not copy protected. It is a difficult game to master and there are a lot of frustrating moments. Be prepared to spend atleast 10 full hours in playing it.

It is a fairly strange game to get into. It tends to get a bit boring in places and as mentioned before, frustrating. I wouldn't recommend it for anyone just getting into adventure games.



## Questions, Questions!

Q:

Gladys Lane wrote requesting some information on the type of educational disks that are available from the club library suitable for primary school use.

A:

The club library contains a large range of educational public domain software. The software is written in Integer, Applesoft, Pascal and CP/M formats. Specifically for the primary school group we have programs which deal with mainstream subjects such as basic mathematics and the alphabet, and diverse topics such as astronomy and nursery rhymes.

Being public domain software, the quality of the programs also varies. Some programs are incomplete, others adequate and some are brilliant.

A complete listing of all the clubs library software will be contained in the New Members Handbook which will be released with the August magazine. Alternatively, you are welcome to browse the listing folders at the bulk purchase tables at the meetings.



Q

Ray Ashton writes: My Kanematsu 3080 printer will not properly respond to PrintShop run on an Apple //e. Even though all printer and interface options have been attempted, the best result obtainable still has a portion of the left overwritten with a part which should appear on the right margin and a line space occurs every other line. Help!

A

I suggested to Ray that the line spacing could be due to the computer, interface card or printer outputting an extra line feed at the end of each line. Check the DIP settings on your printer, the default settings on your interface card and the software settings on the program to make sure that only one of them outputs a linefeed when a carriage return is encountered.

I had an idea that the transposition could be due to the interface card outputting an extra carriage return when it has sent out 80 characters. Try sending CTRL-I ON to the interface card which will tell the card to ignore the amount of characters being transmitted. Ray didn't mention whether his interface card was serial or parallel.

If anyone has a solution to this problem then I'm sure he'd appreciate a call on (02)413-6795 BH,



# SHRINKIT

Review By Grant Kwai

In March I reviewed a program called Disk Disintegrator Deluxe 5.0. This time I would like to inform you about another Compacting program available for the Apple // series. It is called 'Shrinkit' and the latest version is 3.02.

Once again this is an American Freeware program and was written by Andy Nicholas. It is a very complete program which has a main menu where you can select from such options as Shrinking a Disk or file/s, Unshrinking a Shrinkit, Binary II, or NuFX file, formatting a disk, erasing a disk, creating a subdirectory plus many more.

Probably an advantage of this program over D.D.Deluxe, is its ability to pack single files (ProDOS files only) and also complete disks (any operating system). When packing a disk, it took around 2-3 minutes for a 0k free ProDOS disk and managed to shrink it to a 149 block file, 53% of its original size.

Another advantage is the ability to add another compressed disk file or single file to an archive. That is, you may have a compressed disk file on a disk then you compress a single file. You can then combine these two files together so that they are now one single file.

If the file is too small, Shrinkit is smart enough to leave it uncompressed because the 'compression' would actually enlarge the file. This happens because Shrinkit must save its algorithms with the file but since there is not

enough information to compress satisfactorily, the end result would be less productive. For this reason, it is quite natural to see the occasional file being archived uncompressed.

This program has taken the US by storm as is the Apple // compression standard. Nearly all files on Apple // information providing services are packed with this program. It is a very neat little program which doesn't take very long to master which is probably why it has met with so much success. It also does its job very well.

Like all good Public Domain Programs, it comes with complete documentation on disk stating all the required information anyone would need. The Documentation explains what updates have been made throughout ShrinkIt's history and also of some hidden features which are not shown from the menus.

With the advent of Shrinkit and Disk Disintegrator Deluxe, the Apple // now has two very good compression programs that equal that of what is available on the IBM.

You should be able to find this program on most Apple bulletin boards and also Public Domain Software libraries.

Note: There is a special GS version of Shrinkit which is soon to be available in the US. As far as I know, it is not yet available.

# Accelerating the Apple //GS

By John MacLean



At the heart of the Apple //GS is the 65816 processor, a 16 bit processor capable of full emulation of the 8 bit 65C02 found in previous Apple //s.

This article is the first of two that explain how the Apple //GS could be accelerated through the use of enhanced 65816 processors, and other changes.

## Faster Clock Speeds and Accelerator Cards

The 65816 in the current Apple //GS runs at approximately 2.7 MHz. This is 2.7 times the speed of previous Apple //s, but many users find that it is still too slow. Plugging a faster processor into the motherboard of the //GS has no effect, because the clock and the other components on the board restrict the speed to 2.7 MHz.

There are two solutions, either redesign the //GS or add an accelerator card. Currently, only the Transwarp GS is available (from Applied Engineering), but ZIP technology apparently demonstrated their GS board at the last ComputerFest (in May).

The Transwarp board is shipped with a 7 MHz processor, replacing the processor on the motherboard of the //GS. This delivers processing speed that is many times faster than a standard GS, but the processor must still slow down to 2.7 MHz when accessing the RAM on the motherboard of the GS and the memory expansion card.

The beauty of the Transwarp board is that it can be upgraded as faster chips become available (up to about 14 MHz). Upgrades up to 10 MHz can

be made by simply replacing the processor and the clock crystal, while faster upgrades require faster static RAM chips on the Transwarp board.

Western Design Center (WDC) can currently ship 10 MHz processors, and 14 MHz processors (requiring a 6 volt power supply) in small quantities. Another company, ASIC Enterprises, has recently entered the market, and apparently has 65816 processors capable of running at 18 to 24 MHz in production.

If they are successful, we are likely to see 14 MHz Transwarp cards immediately; and hopefully the introduction of the ZIP GS or a Transwarp GS II that can push the speed of the GS even further.

## Enhancing The Instruction Set and the 65832

Bill Mench, designer of the 65816, has a dream of an enhanced 65816 that he calls the 65832. It would be fully pin compatible with the current 65816, and offer a larger and more powerful instruction set.

Bill Mench deliberately left one instruction (WDC) unused in the 65816 instruction set, so that 16 bit instructions could be implemented, thus adding up to 256 new instructions.

If such a chip was installed into a current //GS, or an accelerator card such as the Transwarp, there would be no immediate gain in performance. The benefits would only be seen in new software, written to take advantage of the new, more powerful instruction set.

For example, some low level operations, such as integer multiplication, currently take many machine instructions, and would probably be implemented as a single instruction on the 65832. Features that would be likely in the 65832 include:

- Integer multiplication and division.
- Faster block move instructions (taking 3 cycles

per byte moved and working over bank boundaries).

- More addressing modes on common instructions (such as stack indirect indexed long e.g. LDA [\$01,s],Y).
- Nibble swapping instructions.

Unfortunately, the 65832 project has apparently been shelved, as WDC cannot justify its design and manufacture without a definite market. This is a pity for the Apple //GS, because it would really help improve the performance of the //GS.

## Removing the Video Bottleneck

The video hardware carried over from previous Apple //s requires access to the video RAM at 1 MHz. In order to cope with this, the //GS slows down to this speed whenever writes are required to video RAM.

This seemed quite a clever design at the time, but it has turned out to be a real bottleneck in the //GS system. Even with system software 5.0.X, the user interface of the //GS is simply not as responsive as it could be.

The solution to this is to use special RAM chips known as dual port video RAM, or VRAM.

These chips have two data lines and two sets of address lines, thus enabling video hardware and programs to access video memory simultaneously. Using these chips, programs could access video memory at full speed, and the video hardware could continue to read from it at 1 MHz.

Unfortunately, the video subsystem is not isolated sufficiently for it to be replaced by a third party product. This means that such an enhancement would either be expensive, or require a redesigned motherboard from Apple. The main advantage of such an enhancement, is that almost all software, including system software such as the Finder, would benefit from it.

It would be an essential feature in a new //GS, if such a machine ever eventuates.

## Next Month

Part two of this article will investigate changes to the 65816 that reduce the number of machine cycles taken for each instruction, thus improving the performance of all existing and future //GS software. These changes include additional pipelining in the instruction set and a wider (16 bit) data bus for the 65816.

# FOR SALE

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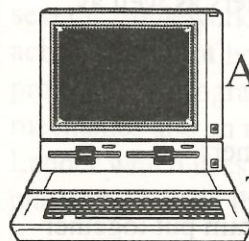
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Applications 32 July 1990

# Apple 2 Software July & August



AUG 112 - Sides 1 and 2 -  
EAMON ProDOS

The famous EAMON adventures returns (again) in ProDOS form. This disk contains the first of a number of disks that will be issued in the coming months. Some time ago a number of the adventures were updated by Bill Gletsos and issued on a 3.5in disk (A1) these are coming from the Big Red Computer Club and will include another version of the Master Disk and a Graphics-based Main Hall and Practice Arena - these two should be available in the September software release. For those of you who have never played EAMON before, the complete Player Manual will be issued at the same time, there are enough instructions on this current release to allow you to enjoy this sample.

EAMON adventure games work on any Apple II with 64K. You must first run the Master Disk (AUG 112 - Side 1) and from there you can go on to an adventure. Side 2 contains the Beginners Cave and is entered by turning the disk over to side 2 and typing in the pathname /EAMON/BEGINNERS.CAVE.

These ProDOS versions will not work with the older DOS 3.3 Master Disk.

AUG.113 - Side 1 - Publish It2 Project Disk. Cynthia Field, Columnist for Incider Magazine has released a Publish It2 Project Disk as a shareware offering, as a means of introduction to her series of lowcost Publish It2 Desk Top Publishing Activity Disks.

This disk is intended to teach people how to get

more out of using Publish It2. Included are fonts, graphics, and step-by-step instructional files.

Using this disk one will learn how to install/deinstall fonts and learn how to avoid horizontal scrolling. By following the examples, users will be able to create 5.25in diskette protective sleeves, complete with a reference guide to Publish It2 and Quick Key commands, and customised letterhead stationery. This disk will help any Publish It2 user to gain a better understanding of some of the intricacies of Desk Top Publishing. It requires Publish It 2 to run.

AUG.113 - Side 2 -  
ProDOS Games Disk.

This disk contains 12 games written in Applesoft BASIC. There is a good mix here, including strategy games, card games, adventure games, maze games and board games. Card or dice games include UNO, Greed, Superdice, and YAHTZEE. A Baseball related adventure, a game that takes place at Candlestick Park during a ballgame is also included.

There are versions of Checkers and a 3-Dimensional game of TIC-TAC-TOE. MAROONED is an educational game designed to teach about the Solar System. DALEKS, OIL and DEFLECTO are all games that require Strategy to win.

Of all the games only RAT MAZE lacks instructions. Use LEFT and RIGHT ARROW Keys to turn and SPACE BAR to move FORWARD. Press ESC for a Top Down View of the MAZE.

**AUG.114** - Sides 1 and 2 -  
Publish It/Superfonts Graphics

This double-sided data disk contains clip art for use with Publish It, Superfonts or other programs capable of working with double hi-res graphics.

All of the files on this disk have been converted from Public Domain Macintosh graphics. This disk contains clip art related to the months of May, June and July. It includes Fourth of July graphics, summer scenes and flags.

**AUG.115** - Sides 1 and 2 -  
Publish It/Superfonts Graphics

This double-sided data disk contains clip art for use with Publish It, Superfonts or other programs capable of working with double hi-res graphics. All of the files on this disk have been converted from Public Domain Macintosh graphics. The theme of this disk is animals. It contains graphics of rabbits, elephants, birds, bugs, and many other animals.

**August**

**AUG.116** - Sides 1 and 2 -  
Publish It/Superfonts

For those of you who do not have a 3.5in drive and cannot download the fonts from the IIGS disks, these are for you. Accompanying this disk on side 1 is the change font program so if you are using Publish It then use this program to change the font type - if you are using Superfonts then you will not care what the font type is.

Fonts on side 1 are: Andover.9, Anglican.18, Athinai.12, Bombay.12,.24, Boston.18, Canterbury.14, Circuits.14, Clairvaux.10, .12, .14, .18, .20, and .24.

On side 2 the fonts are: Clairvaux.28, .36, .40, Columbia.9, .10, .12, .14, .18, .20, .24, Cream.10, Dethek.12, .24, Diacritics.9 and .12.

**AUG.117** - Sides 1 and 2 -  
Print Shop Graphics

Each side of this disk is filled with the popular PS Graphics and is presented using two different forms of PS Viewer. The list of pictures is too long to detail (there are 94 graphics on side 1 alone). Side 2 contains 25 borders as well as more graphics.

**AUG.118** - Side 1 -  
Trial Size Toolbox (Roger Wagner)

This is a DOS 3.3 utilities program put together by Roger Wagner and is a series of program enhancers. There is Chart N'Graph Toolbox; Video Toolbox; Database Toolbox; and the Wizard's Toolbox. Description and explanation come with each routine. If you are creating your own programs this one is a must!

Side 2 - Mineral Identifier

Another DOS 3.3 program. This one is menu driven and has comprehensive explanations on how to use the program for identification of all types of minerals.

**AUG.119** - Side 1 -  
Large Text Printer

This is a ProDOS shareware program that uses the Beagle Compiler. The program is menu-generated and has instructions built in. Its function is to present a number of stories on screen in large text that young children can read with ease. A useful program for the Infants School.

Side 2 - Reverse Polish Programmable Calculator

This one is also ProDOS shareware. Developed by Glen Bredon, there are comprehensive instructions available on two text files on the disk (Calc.Doc and Calc.Doc.2). There are 96 blocks of text in these two files - make sure you read them first or you may be reverse polished!

## IIGS Software

### GS46 - Tonight's Sky

GS46 is a disk that will be of value to anyone interested in astronomy or space exploration. Included are several planetarium problems, several Appleworks files describing some recent achievements of both the USA and USSR space programs, a program that demonstrates orbital mechanics and an update of the classic Lunar Lander which uses a IIGS SHR digitised photograph from the lunar surface as a backdrop.

There are two versions of Tonight's Sky on the disk, one is IIGS specific and displays the night time sky in SHR, and one which can be used on an enhanced Apple IIe, etc, which displays the sky in double hi-res.

### GS47 - Desk Accessories

GS47 contains numerous programs, files and patches that allow any IIGS user to customise their desktop. Supplied are updates to older programs, and many brand new utilities designed to take advantage of System Disk v5.0.2.

Desk Accessories are programs that can be called up from within application programs such as Appleworks GS. New Desk Accessories (NDA's) are only available while running GS/OS applications, but Classic Desk Accessories (CDA's), once installed, are available from within any ProDOS 8 or GS/OS program. Supplied on this disk are Desk Accessories that are Paint Programs, Area Code references, Text File Readers, Word Processors, Screen Inverters, Alarm Clocks, Screen Blankers, Joystick Calibrators, Desktop Colour Modifiers, Memo Pads, Calculators and several utilities for Hard Disk users, including a full complement of SCSI formatting aids that will allow your drive to operate more efficiently and faster.

A useful INIT file expands the 2K built-in print buffer on the Imagewriter to either 32K or 64K.

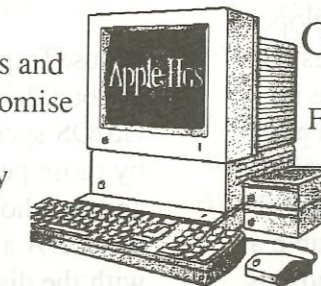
(Can one of our Macintosh programmers convert this for use on the MAC - or does it already exist?)

### GS48 - GIF Files

GIF, or Graphic Interchange Format, is a type of file developed by Compuserve Information Network, that allows users of different non-compatible computer systems to share graphics with each other.

Included on this disk are over 75 graphics that can be viewed by any Apple IIe, IIc, or IIGS. Although the majority of these graphics were created on the IIGS the ones here have been chosen because they look fine at any resolution.

Two GIF decoders are supplied. SHR Convert is a shareware program for the IIGS; IIGIF is freeware and works on any Apple.



### GS49 & GS50 - Sound Smith Files

Following on from the June release of Sound Smith (GS41) here are two more disks of files for this excellent program.

Sound Smith uses synthesized instruments that are in the standard ASIF format, making it easier for those who own sound digitisers, such as Future Sound or Audio Animator, to create additional instruments in minutes.

The program requires 1.25 megabytes, and System 5.0 or higher and will not run on a single 3.5in drive without modification of the System Disk. Elsewhere in this issue should be the fix for this problem.

GS49 contains 9 music files including Amegas, Behind, Blizzard, Cambodia, Duggar, End Theme, Garcon, Moments in Love, and S114.

GS50 contains 7 files. These are Axel F, Big in Japan, Forever, Jungle 2, File23, File35, and File42.

### GS51 - Sound Smith Files

Sound Smith uses synthesized instruments that are in the standard ASIF format, making it easier for those who own sound digitisers, such as Future Sound or Audio Animator, to create additional instruments in minutes.

The program requires 1.25 megabytes, and System 5.0 or higher and will not run on a single 3.5in disk system without the fix to the System Disk written up in July's Appications.

GS51 contains 8 music files; these are S118, Still, Jigsaw, Blue Monday, Impact, Nothing, Impact6, and Sarcochaser.

### GS52 - Guadalcanal

This freeware game is probably the most richly detailed computerised war game ever developed. Written over a five-year period, it simulates the events that took place in the Pacific theatre in 1942. It is a two person game, playable in person or over a modem. It pits an American Admiral against a Japanese Admiral, with each Admiral commanding all the forces that were available at that time, including 170 naval vessels, hundreds of aircraft, and about 50,000 troops.

Complete instructions are provided. The game combines graphics and text quite nicely. Several different scenarios are provided.

Guadalcanal requires a 128K enhanced Iie, Iic or IIGS, and a 3.5in drive.

### GS53 - Shareware Games

This disk contains two wonderful shareware games for the Apple IIGS - One Armed Battle, and Mage Maze.

One Armed Battle is a 1-4 player, 6-reel slot machine game. The game contains many humorous digitised sounds, and if a stereo card is attached to the IIGS it will playback in stereo.

Mage Maze is a richly detailed IIGS maze game. Each maze has 10 levels, and contains traps and doors that lead nowhere. All that is displayed on the screen is a compass, and an animation that charts the player's travels through the maze. There is also a module which allows you to create your own maze.

### GS54 - Dave Hill's Shareware Disk

This disk contains several updated versions of Dave Hill's classic shareware programs JumpStart and Alarm Clock CDA, as well as two Public Domain Desk Accessories, Area Code CDA and MouseTrap CDA.

Area Code CDA lists all telephone area codes by two methods. One is in numerical order and the other in alphabetical order by State name. It automatically installs when the disk is booted and is useful for those who use the phone for long distance calling.

MouseTrap Classic Desk Accessory allows the keyboard to be used, rather than the mouse, with GS/OS specific programs. This CDA can be used by those people whose mobility is impaired and/or who cannot grasp a mouse. This makes this CDA a particularly important device for use with the disabled.

### GS55 - Desk Accessories and Utilities

Several useful utilities are included on this disk for those of you who telecommunicate. NuPak GS allows one to unpack Macintosh files that have been packed by StuffIt. Resource Spy allows you to take Mac Fonts and Icons that you have downloaded, and convert them to Apple IIGS format.

The Desk Accessories include one to format a disk while in a program that does not have this option, and several that will allow to copy files or view text files from within other programs. There are several that give added control over an Imagewriter, a DA that lets you see what any font looks like, and many other useful DA's including one that is a Tetris-like game.

# LETTERS TO THE EDITOR

Dear Sir,  
I have been a Mac owner for less than a year & am a newish member of the AUG.

Tonight, after about four hours typing some text in Word 4, I experienced my first DISASTER!

On returning to the Mac after answering the phone - BLANK SCREEN (well almost) and the cursor wouldn't open anything!!

I phoned Steve Hill whose name appears in the Phone Service Directory and he was WONDERFUL!! Although he could not figure out what had happened, or how - we managed to avert disaster and with Steves guidance, I retrieved what I had been working on (lucky I had just saved before answering the phone).

Thank you AUG - thank you Appications - And THANK YOU Steve Hill.

D.M  
Coogee

*You are more than welcome D.M. - glad we could be of assistance. Ed*

The following are extracts from two letters - one from our Mac SYSOP and the other the reply he received.

To Claris Corporation  
From Richard Kempe  
Attention Mr R. Russell

Dear Sir,  
When visiting a friend recently I had the opportunity to "audition" FileMaker II and I thought I would write and let you know how much I was impressed by your programme.

( Lines omitted)  
Since I'm well aware of the support given by Claris to user groups I hope you could extend similar support to the AUG in the form of a copy of FileMaker II for use in running the BBS. etc

Richard Kempe  
SYSOP Mac BBS

Reply

Dear Richard,  
Thank you for your letter and your encouraging comments about our FileMaker II.

In reply to your request, enclosed please find a complimentary copy of the programme. In return, we do request that you include acknowledgement of your usage of FileMaker II at all times where appropriate. Thanks.

Best Regards,  
Ron Wood  
Australasian Manager.

Richard replied to Ron and I now add on behalf of the AUG a most sincere THANK YOU to you Ron for your support ,and a 24pt

## THANK YOU

to Claris.

Well done from all of us in the Apple User Group.

