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# Washington Apple Pi



Volume 3

December 1981

Number 11

## Highlights

SUPERSCRIBE II WORD PROCESSOR REVIEW  
 SPACE WAR (OR HOW TO LIVE WITH THE HIRES PAGE)  
 THE ACCOUNTANT: A REVIEW  
 BLAISE AWAY SWITCHED-ON BLOCKS

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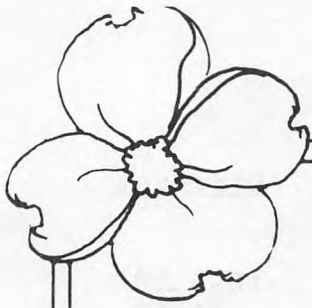
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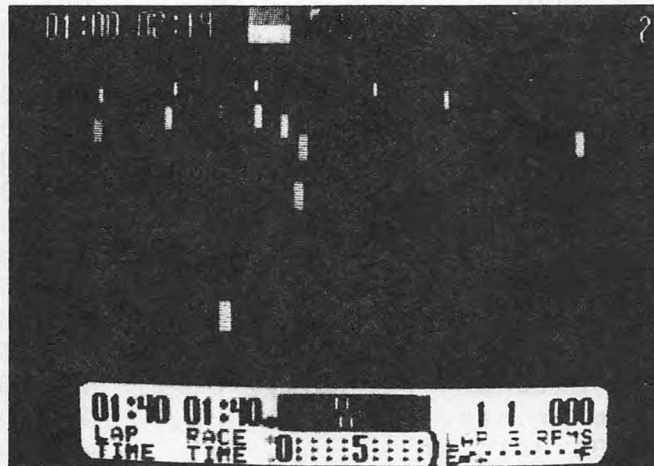
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-Nancy Philipp (301) 924-2354  
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EDSIG -Chuck Philipp (301) 924-2354  
NEWSIG -Paul Hoffman (301) 831-7433  
Pascal (PIG) -Tom Woteki (202) 547-0984  
SIGAMES -Al Gass (703) 371-3560  
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Membership dues for Washington Apple Pi are \$18.00 per year, beginning in the month joined. If you would like to join, please call the club phone and leave your name and address, or write to the PO Box above. A membership application will be mailed to you.

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

Members who would like to sign onto the Washington Apple Pi ABBS system should call the club phone and leave your name (first and last), WAP number and phone number. You will be assigned a password and John Moon will take care of signing you on.

## CLASSIFIEDS

FOR SALE: APPLE II Integer firmware card, \$99.99. John Fritsvold, (703) 751-7696 (after 6 PM).

FOR SALE: Comprint 912 electrostatic printer, upper/lower case, microprocessor controlled functions, fast output. Comes with user's manual, jumper for the APPLE and 1 1/2 rolls of paper, \$300. Call 946-2585 and leave message.

WANTED: Used Applesoft ROMcard or Apple Language card. Also have heuristics 20A speech recognition board for sale or trade. Sam Sachs, (301) 997-9281.

We have some great articles for you this month - informative, whimsical, and some, dangerous. Remember, we cannot be held responsible for zapped chips or computers. Those of you who are more intrepid than the rest of us can try some of the ideas presented...but the usual "your warranty may be voided" caution is hereby voiced. I refer in particular to your use of the trouble shooting guide, and to the joystick and upgrade articles. If, however, you are past your warranty period, out of ready cash or just plain adventurous, then go...

Though we have a wealth of articles this month, there are not many on the back burner. We are always concerned that we will run out of articles. So, please, alleviate that worry from your Editor's mind by writing, writing, writing.

## EVENT QUEUE

Washington Apple Pi meets on the 4th Saturday of each month at 9:30 AM, at the Uniformed Services University of the Health Services (USUHS), Building A, 4301 Jones Bridge Road, Bethesda, MD., on the campus of the National Naval Medical Center. This is a new meeting site. A map showing the locations is included in this newsletter.

Due to the Holidays, the December meeting will be on the 3rd Saturday, December 19. The January meeting will be on the 4th Saturday, January 23.

The Executive Board meets on the 2nd Wednesday evening of each month. All members are welcome to attend. Details will be on the club phone and ABBS.

NOVAPPLE meets on the 2nd Saturday of the month at 1:00 PM at Kings Park Library on Burke Lake Road in Fairfax County; and on the 4th Thursday of the month at 7:30 PM at Computerland of Tysons Corner. In addition, tutorials will be presented on the 2nd Wednesday at 7:30 PM at Computers Plus on Franconia Road.

# SIG-NEWS

SIGAMES is the special interest group of computer hobbyists interested in using their APPLES for entertainment. They meet immediately following the monthly meeting of Washington Apple Pi.

This month's newsletter features two new regular SIGAMES columns: HIT PARADE and SIGAMES NEWS, both by John Alden. HIT PARADE is SIGAMES' new buyer's guide to games. Each month a new group of games will be featured. SIGAMES NEWS will present the agenda for the current month's SIGAMES meeting, the next month's agenda, a synopsis of the prior month's meeting and a review of one or two new games.

---

PIG, the Pascal Interest Group, meets on the third Thursday of each month at 7:30PM at the Uniformed Services University of the Health Sciences, Bldg. A, Room A2054 (2nd floor), on the campus of the National Naval Medical Center at 4301 Jones Bridge Road, Bethesda, MD.

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EDSIG will meet immediately after the regular meeting of Washington Apple Pi.

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NEWSIG will meet just after the regular Washington Apple Pi meeting. The meeting seems to best help the new members by answering their questions, and telling them what to do to get their system up and running. We also tell them something about WAP, how to order the disks, what's on the disks, etc.

The following members have agreed to answer questions over the phone when someone gets stuck and needs help between meetings:

Bob Chesley	560-0121
Paul Hoffman	831-7433
Sara Lavilla	926-6355
Boris Levine	229-5730
John H. Smith	439-4388
Steve Sondag	281-5392

---

# NOTICES

## MEMBERSHIP RENEWALS \*\*\*\*\*

For most members who joined before June 1981, December is membership renewal month. These members have "8112" after the WAP No. on the mailing label. We have mailed out renewal forms. We ask that you return these as soon as possible. There's a lot of work involved in processing renewals, and it will be helpful if we can spread the work over the next few weeks.

## WAP TUTORIAL \*\*\*\*\*

WAP tutorials will be given in February by David Morganstein. Elsewhere in this issue is a reservation form which describes the tutorials and gives instructions for signing up.

## DECEMBER MEETING IS AT USUHS \*\*\*\*\*

Members are reminded that beginning in December 1981 the monthly meeting of Washington Apple Pi will be at the Uniformed Services University of the Health Services (USUHS), Bethesda, MD. A map showing the location is included in this newsletter. If you have any questions about how to get there, please feel free to call the club phone (621-2719) or the Urbans (229-3458). We hope that we will not lose any of our monthly attendees because of this move. It is not far from the beltway and has lots of parking. Try it, you'll like it!

⊗

# WAP HOTLINE

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

### General

Ben Acton	972-1533
Robert Fretwell	971-2621
Dave Harvey	527-2704
Tom Jones	460-8773
Robert Martin	498-6074

### Operating Systems

APPLE DOS	Richard Untied	241-8678
	(weekends only)	
CP/M	Robert Fretwell	971-2621

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

A,I	Jeff Dillon	422-6458
A,I	Tom Jones	460-8773
A	Mark Pankin	370-9219
A,I,P,M	Bill Schultheis	538-4575
	(except Tue., Thurs.)	
A,I,M	Richard Untied	241-8678
P	Robert Fretwell	971-2621

Printers Walt Francis 966-5742

Word Proc. Walt Francis 966-5742  
Ben Acton 972-1533

VisiCalc Ben Acton 972-1533  
Walt Francis 966-5742

Time-Sharing Chuck Reinbrecht 299-6810  
Dave Harvey 527-2704

Graphics Bill Schultheis 538-4575  
(except Tue., Thurs.)

Games Jim Eatherly 232-6046

⊗

# PRESIDENT'S CORNER

by David Morganstein

In an effort to improve the quality of software available to WAP members, and to provide an incentive to creative programmers, I proposed to our Board the following idea. Any member who has written a program which they believe to be of general interest may offer their program and its documentation for collaborative production and sales through the club on a royalty arrangement. This offer, I believe, will benefit everyone involved.

First, the creative programmers in our midst will have an incentive, not only to write valuable software and make it available to the rest of us, but to document it clearly so that we may all be able to use it. I have heard it said that if it takes X hours to write a useful program, it takes 3X more hours to write a clear description of how to use it and to make the program "user friendly". Thus, by receiving a royalty for his or her efforts, the member will be "inspired" to adequately document the program and its use, something we all find pretty unpleasant.

I have talked to several of our members who have either marketed commercial software or have thought about it. The whole process of getting started and knowing who to talk with is a difficult and time consuming one. If you have written a good program using evening and weekend "fun time", you may not really be interested in starting a business. However, the possibility of a small monetary reward would provide a desirable stimulus.

Second, the members will benefit by having available programs of a higher caliber than that currently found on most of our library disks. Perhaps of equal importance would be the inclusion of serious documentation discussing the uses of the program and the idea which motivated it.

Third, the club would benefit by making available a more interesting variety of programs. The club would serve the APPLE community by offering a catalyst for the creation of good software. WAP would benefit monetarily through the sales of the programs. All in all, it seems like a reasonable idea.

The offer would be extended to any member. A small group of more experienced members would have to evaluate the programs and documentation before deciding to market. This process would insure that only programs of general interest would be included, and that the programs would interface easily with the user.

Now, if no one comes forward with any offers, this whole discussion will be academic. But I suspect that several of our members have excellent programs that they have assembled and have, up till now,

been unwilling to take the time to document them. I am hopeful that this offer will give them pause to think and encourage them to share their software with us. Ⓢ

## MINUTES

### EXECUTIVE BOARD MEETING

The Executive Board of Washington Apple Pi met on October 14, 1981 at the home of Bernie Urban. President Morganstein presided; 14 people were present.

The following items were covered: advertising of "Inside Apple Pi" in various magazines was discussed; it was decided that the newsletter editor should continue to exercise discretion concerning the newsletter's content; the club will meet at USUHS starting in December; the club now has insurance, and group insurance for equipment of members is being studied; some club store prices will be lowered; newsletter advertising rates will be increased, and starting a year from now, the ads on the inside front and back covers will be rotated among advertisers.

### GENERAL MONTHLY MEETING

Washington Apple Pi met at 9:30 AM on October 24, 1981 at George Washington University. President David Morganstein presided, with 256 people in attendance.

Announcements were made: tutorial classes will be held in February, updated directories will be available in December, some club store prices are reduced, the November 21st meeting will be a flea market, the December meeting will be on the 19th at USUHS, an associate editor is needed, there was some discussion of recognition of payment for the most outstanding newsletter articles, John Moon will present the December program, WAP now has over 1000 members, there is a need for an advertising chairman, and there were SIG announcements.

There was a general questions and answers session, followed by an interesting and informative program on APPLE disk drives, which was presented by Jose Sanchez.

The meeting adjourned at 11:00 AM. Ⓢ

# SIGAMES NEWS by John Alden

I'm back!!! More reviews and news about SIGAMES events.

The next few months promise to be very exciting. (I told you I would change the opening line for this month.)

-----

Hot flash (news, that is) - I have become a distributor of hardware and software at extraordinarily low prices. My company is Columbia Computer Systems. I will continue to write this column (unless serious objections to my puns arise). I will continue to give the most objective reviews possible. Which reminds me, several people have inquired about my categories when I review software. The categories are:

A highly recommended purchase. This software is outstanding. You play it many times and it is still interesting and fun.

A recommended purchase. An outstanding program but has a few flaws. A very fine line exists between this and "a highly recommended purchase".

A suggested purchase. Better than average but I wouldn't go out of my way to buy it.

Average. Speaks for itself (the first person who says that I also do will be subjected to ten minutes of outrageous puns from me - sort of for whom the bull toils).

Poor. Avoid any programs which received that category.

-----

On to the good stuff.

-----

The December meeting will feature the darkest dungeons of Wizardry. After the Apple-seeds meeting and before they scatter, they will be invited to become participants in a Wizardry adventure. Wizardry was demonstrated at the November SIGAMES meeting. Twelve Apple-seeds will be selected by random drawing and invited to create characters in Wizardry. Six will be the main party and the other six will be replacements for fallen heroes (or heroines).

After the Wizardry excursion, the survey will be conducted and several new releases will be demonstrated.

-----

Steve Stern presented November's meeting. The Apple-seeds competed among themselves at several arcade games. The action was fast and furious. Our congratulations to the winners of the competitions and to Steve for an excellent meeting.

-----

Do you have a game you would like demonstrated or explained? Let's hear from you. This is your meeting and we want to help people make educated decisions when purchasing software.

-----

Recently released software includes:

Sword Thrust (scenarios 1-5, CE Software); Mission Escape (CE Software); Wall Street (CE Software); Empire I (Edu-Ware); Time Zone (On-Line); Cross-fire (On-Line); Threshold (On-Line); Zork II (Infocom); Firebird (Gebelli); Alkemstone (Level-10); Bug Attack (Softsel); Quest for Power (CrystalWare); Galactic Expedition (7 scenarios, CrystalWare); Blisterball and Mad Bomber (Creative Computing).

## THE REVIEWS:

'Threshold' is another Galaxians. But it is a super game. You are given five fighters to save the universe from the wave of invaders (again). You can use the paddle 0 or the keyboard. I recommend the paddle. You can move left and right, fire single or multiple bursts, and you can slow the movement of the invaders by using the space bar. Your constraints are: You must reach 50,000 points to get another ship (every 100,000 points thereafter); you must destroy each wave of invaders before the next appears; you must destroy four waves before you can refuel (there is a fuel gauge on the right side of the screen); you can only fire your lasers for a fast burst of about 10-15 seconds before they over-heat, requiring you to wait for them to cool (the gauge is next to the fuel gauge). Some excellent features are: Enter (s) to suspend play; enter (b) to delete the background (so you can see the bombs better); and limited use of the warp drive (each fighter can use it once once). Some not so good features are: Previous high score is not shown; one group of invaders arrives all around you (as opposed to arriving above you) which can cause the loss of one or two fighters before you even move; and many times the last one or two invaders will be above the top of the screen firing at you while you can't see them. This game was difficult to rate. A recommended purchase. From On-Line Systems for \$39.95.

'International Grand Prix' is an exciting and realistic racing game. You can choose from five different Grand Prix courses with eight levels of difficulty. Your steering and shifting is done on one paddle. You can race at speeds up to 198 MPH. A very addictive game. (Richard Urban, the author of this game and 'Three Mile Island', will be at the December meeting and will demonstrate IGP. With some coaxing we may be able to have him come back as a guest speaker and discuss various aspects of games and game development.) A highly recommended purchase. From Riverbank Software for \$30.00.

contd.

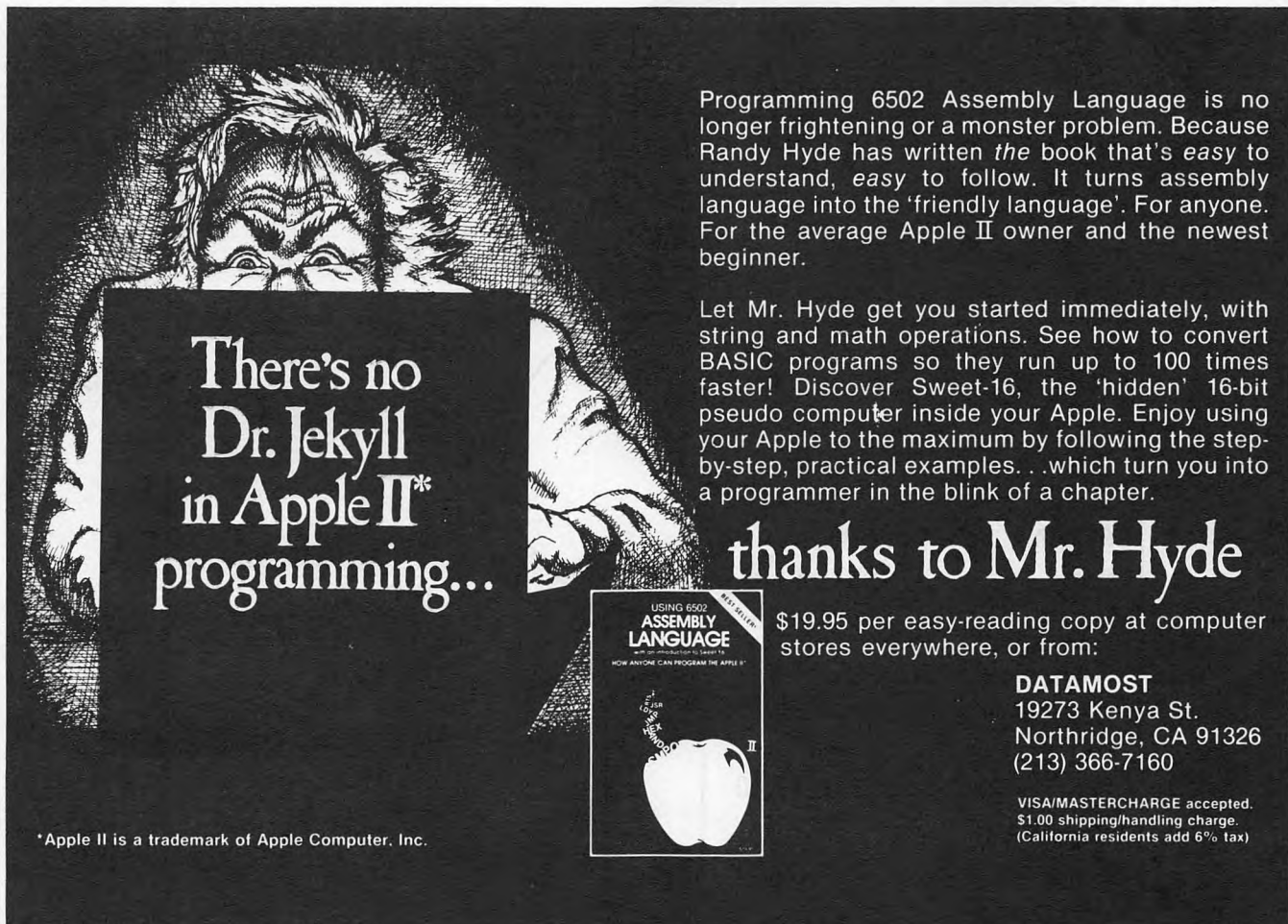


'Outpost' is a situation where you have an armed post in space being attacked on four sides. By using the keyboard controls one can move the firing unit to one of the four sides. A hit on one side will prevent the unit from moving to that side. Two hits on the same side will destroy your post. Four hits on a corner will also destroy the post. Your firing units and shields only work on the sides, not the corners. You do not appear to be able to use TG or keyboard joysticks. You can use Atari joysticks if you have Sirius Software's joyport. I was not overly impressed with the action or the graphics. Average. From Sirius Software for \$29.95.

'Cranston Manor' is #3 in the On-Line series of high-resolution adventures. It is an excellent companion to the 'Wizard and the Princess'. "You are in the deserted town of Coarsegold, which was strangled to death by old man Cranston's greed and plotting. You are determined to enter Cranston Manor, find the treasures and put them outside the gates so they can be used to rejuvenate Coarsegold. You have a list of the 16 treasures old man Cranston stole and hid, but it is not legible." This is a very well-done adventure game. But it is tricky. You must find the crystal skull to obtain the last treasure. Good hunting and good ghosting!! A recommended purchase. From On-Line Systems for \$34.95.

'Ulysses and the Golden Fleece', #4 in the On-Line series of high-resolution adventures, is the most ambitious. It fills both sides of a disk. "The setting is ancient Greece and you are Ulysses. The king has requested an audience with you, to assign you the task of retrieving the 'Golden Fleece', and returning it safely to him." During the voyages you will encounter the wicked 'Sirens', the Cyclops, Pluto (the Mythical god, not the dog!), and others yet to be revealed. It took me several attempts to finally see the king. The phrase to use is conceptual and easily overlooked. NO MORE HINTS. This is a highly recommended purchase. From On-Line Systems for \$34.95.

'The King's Testing Ground' is the first scenario on Sword Thrust, Don Brown's superlative successor to Eamon. It is a text adventure series. 'The King's Testing Ground' is equivalent to the 'Beginner's Dungeon' in Eamon. But the Sword Thrust series goes far beyond Eamon: The characters have more ability; you can bargain when buying or selling items in the castle; the puzzles are more involved; and the scenarios are larger. It is difficult, but not as difficult as Savage Island. It is challenging. Lots of hours will be spent enjoying the game. A highly recommended purchase. From CE Software, \$29.95 for the master diskette with the 'The King's Testing Ground' and \$24.95 for the other scenarios.



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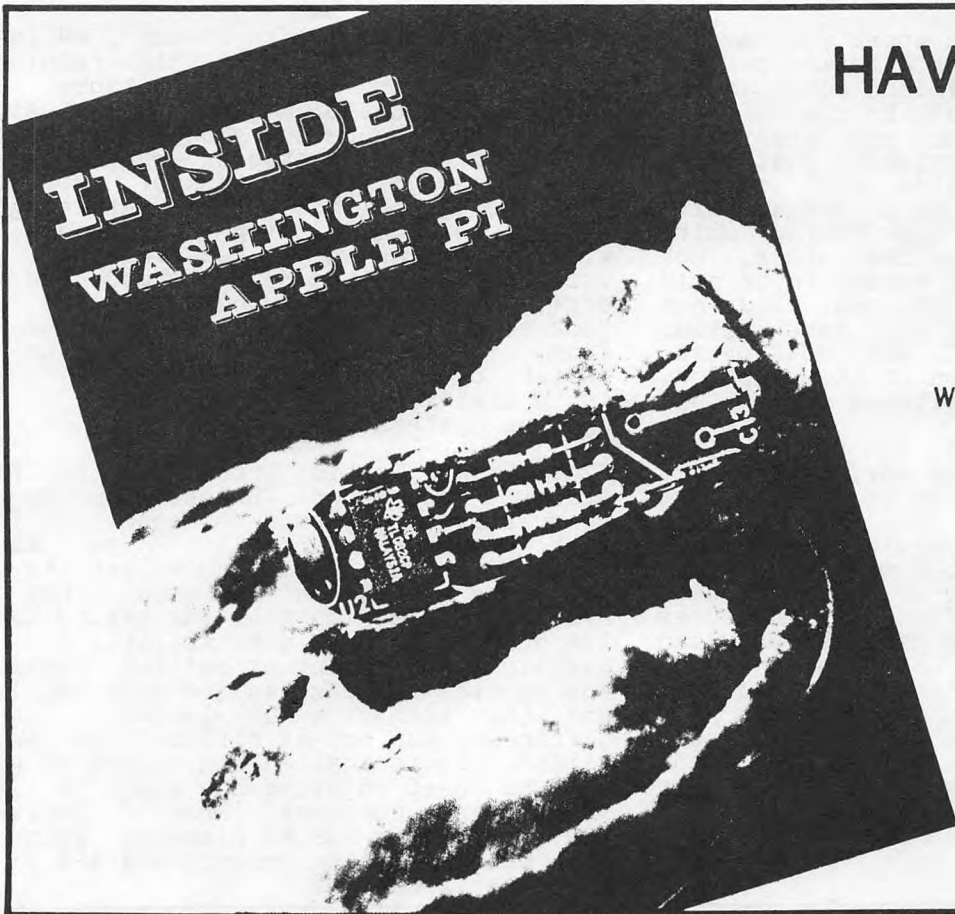
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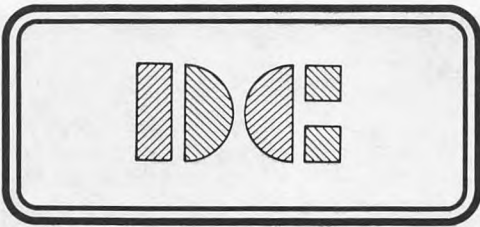
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# SUPERSCRIBE II WORD PROCESSOR :

## A REVIEW by Walton Francis

### INTRODUCTION

Word processors for the Apple fall into four general price/performance categories. First, there are the text editors, which are not true word processors, mostly selling for \$75 or below. Examples include The Correspondent, Scribe, and Word Power. Second, there are the 40 column word processors, such as Apple PIE, Apple Writer, EasyWriter, Magic Window, and SuperText II. To this category could be added Letter Perfect and The Executive Secretary, which operate in both 40 and 80 column modes. Most of these word processors sell for around \$125, but require (or benefit from) a lower case adaptor which adds around \$50 to the price, for a total near \$175 (and in several cases \$200 or more). Third, there are the 80 column systems, including Apple PIE 80 column, EasyWriter Professional, Letter Perfect, and The Executive Secretary. These systems all require buying a monitor (\$200) and an 80 column board (\$300), for a total system price in the \$700 range. Fourth, there are the 80 column CP/M systems, notably WordStar, Select, and Magic Wand, which require purchase of monitor, 80 column board, and the Softcard (for another \$300) and whose total system price is in every case over \$1000. In general, though with individual exceptions, the more expensive systems are better, so that the serious writer is driven to the \$700 and up price range to get a top notch word processor.

One system, SuperScribe II, falls outside this otherwise symmetric scheme. SuperScribe operates in both 40 and 70 (effectively 80) column modes, but does so without a lower case adaptor or 80 column card. It does require a monitor to handle 70 columns, but at \$130 plus \$200 for a monitor still costs well under half the total system price of all other 80 column systems. And if used only in 40 column mode it provides lower case at a price cheaper in than any of the other 40 column systems. In short, even if SuperScribe were only average in quality, it would be an excellent buy. In fact, SuperScribe is very near the top in quality, and is hence by a fair margin the single best buy in Apple word processors.

### USING THE APPLE AS NATURE INTENDED

The authors of SuperScribe did something both clever and simple--they decided to create a piece of software relying on the Apple ra-

ther than on exotic addons. Alone among the bunch, SuperScribe uses the Hi-res screen for editing, with two character fonts both using upper and lower case--one largish font for 40 columns (or less), and one smallish font for 41 to 70 character display.

SuperScribe does another surprisingly simple thing by relying on standard DOS text files for storage of text. This means, of course, that SuperScribe can interface with any other program using text files, including BASIC and Pascal programs (moreover, SuperScribe is designed for maximum utility in program editing both through its visual format and through such capabilities as search and replace). This also makes SuperScribe a handy program for use over the modem.

### EDITING

Like most 80 column systems, SuperScribe is designed to take advantage of the visual approach to word processing--what you see on the screen is what you get when you print (for an extensive discussion of the advantages of the visual approach, see my otherwise dated piece in the February 1981 WASHINGTON APPLE PI). This approach greatly facilitates the writing and editing process by minimizing the intrusiveness of the computer itself. In visually oriented systems, you place the text on the screen where you want it, rather than relying on extensive use of embedded commands to do such things as indent paragraphs or line up columns of numbers.

Among the systems using this approach, SuperScribe is about average in quality of implementation. It has all the relatively standard advanced features, such as wrap-around on entering text. Its cursor control and related commands are more both more sophisticated and more complex than is typical, and there are a few weaknesses, notably lack of a simple way to move the cursor up or down the page without going to the margin first (this lack being a real nuisance when you want to change a word in the middle of a line right above the present cursor position). On the other hand, moving a block of text is easier than in most systems.

SuperScribe has two editing weaknesses related to its use of the Hi-res screen. First, its 70 column type face is not quite of the

contd.

readability of systems using an 80 column card. Second, it is relatively slow in screen response. I type about 60 words a minute and can pull ahead of the screen image when I'm racing. One trick to avoid this, well hidden in the manual, is to use the bottom line of the screen for original text entry. Moreover, the program has a buffer to prevent loss of text.

Overall, I would rate its editing ease and power as very good: on a par with the 80 column systems, and considerably superior to any of the 40 column systems (even, or perhaps especially, when SuperScribe is used as a 40 column system).

### FORMATTING AND PRINTING

I doubt that any program on the market exceeds SuperScribe's formatting powers, and few if any match it. Without going into detail, suffice it to say that PEELINGS II rates it as good or better in this dimension than Apple PIE, which is generally regarded as the most sophisticated formatter around. No feature, however exotic, is left out. Page numbering, sure--do you want roman or arabic numbers?! One feature which I had never expected to see on a non CP/M system is automatic footnote control. And SuperScribe is very solicitous of your printing needs--not only does it provide such standard advanced items as proportional spacing, bold face, and underlining, but also it conveniently provides a software driver for underlining with the Epson printer without the graphics chips.

In fact, so advanced are the formatting capabilities that I am a bit negative on all the complexity involved. Mastering them is almost out of the question--the trick is to look up just those items one needs.

In any event, the only unambiguously negative feature is the need to reload the master disk every time one needs to move from editing to printing or vice versa--another area in which speed suffers.

### SPECIAL FEATURES

SuperScribe has an almost inexhaustible list of special features. It has a form letter capability built in. It uses a memory and disk management system which allows text files to exceed 10,000 words (and, of course, to chain multiple files when printing). Perhaps most impressive, it is the only Apple word processor I know of other than WordStar which provides spooling--the ability to edit one file while another is being printed, instead of sitting and twiddling one's thumbs. Adding insult to injury, it

even includes a program for converting Super-Text files to standard text files usable by SuperScribe.

### THE MANUAL

In some respects the manual (September 1981 edition) is very good--readable, generally clear, comprehensive, and thorough. It has a number of nice extras such as several canned formats for typical applications such as business letters. Nonetheless, I rate it as close to unacceptable simply because it lacks a useful index. There are few experiences more frustrating than searching through 150 pages to find the short paragraph that describes a key function. And why should one have to read all 150 pages just to discover all the functions? (In near despair, I spent some hours going through the manual to create my own index, copies of which are available through the club). This is particularly inexcusable because one of SuperScribe's features--you guessed it--is index creation.

While SuperScribe partially overcomes this weakness by providing a so-so reference card and a Help feature, these are not real substitutes for a good index.

The manual has other weaknesses, such as lack of a short tutorial geared to the novice user of word processors. This is not a simple program to use, and a new Apple user in particular will find it heavy going. Indeed, both the pro and the novice are likely to miss some neat tricks which simplify things, because they are buried in excruciating detail rather than highlighted.

Furthermore, the manual contains some errors, the most frustrating of which from my point of view is erroneous instructions for driving the special type faces of an Epson printer.

### PROGRAM EVOLUTION

SuperScribe is still a young program undergoing improvements and perhaps debugging (do not, under any circumstances, buy a version earlier than 3.2). All indications are that On-Line systems is a responsible software house devoted to improving the product. Help is available over the phone. A number of bugs have been discovered and removed already, and in the process the 70 column feature was added to the original program. I myself have discovered a bug in one of the more obscure cursor control commands when used during the first few lines of text. In my view it is not too early to buy, but a prudent man might wish to wait a few more months.

contd.

# QUESTIONS, QUESTIONS, QUESTIONS

by Mark L. Crosby

Q. Does the Integer Basic-Disk program on our club's library disk #14 really work? Can this be used with an APPLE II Plus?

A. Yes it does work. It is designed for a 48K APPLE II Plus with disk drive and either DOS. It is evoked by issuing a "BRUN..." command. The Integer Basic-Disk program starts loading at decimal 2048 and has a length of 5305. It then relocates itself between 32767 and 38400. This is perfect since DOS begins at 38401. There are some problems, however. Any program that is larger than 32K or that attempts to relocate itself up higher in memory (high enough to run into Integer Basic-Disk) will crash. On that same disk TUBS will not work since it attempts to relocate to where Integer Basic-Disk is running. The Memory Test will work though. Many of the smaller Integer Basic programs such as simple games, etc., will work correctly.

Q. Every time I want to print something and execute a "PR#n", I get a carriage return that I don't need. If the Parallel Card needs to have line lengths, etc., changed, that also causes unwanted carriage returns. How can I fix this problem?

A. You may use POKES to accomplish what you need. In some cases, a CALL will be required. See charts listed below:

## PARALLEL PRINTER INTERFACE

```
POKE 1400 + <SLOT>,80 (CARRIAGE WIDTH)
POKE 1656,0 (CHARACTER COUNTER)
POKE 1784 + <SLOT>,137 (SET COMMAND
PREFIX TO CTRL-I)
```

## (CENTRONICS CARD)

```
POKE 1912 + <SLOT>,0 - NO VIDEO, NO
LINEFEED
OR ,1 - NO VIDEO,
ENABLE LINEFEED
OR ,128 - ENABLE VIDEO,
NO LINEFEED
OR ,129 - ENABLE VIDEO,
ENABLE LINEFEED
POKE 54,2 - PR# <SLOT>
POKE 55,192 + <SLOT>
CALL 1002
```

## COMMUNICATIONS INTERFACE

```
POKE 1784 + <SLOT>,32 - LOWER CASE
POKE 1912 + <SLOT>,0 - VIDEO ECHO
POKE 2040 + <SLOT>,17 - STAT
POKE -16242 + <SLOT> 16,3 - RESET ACIA
POKE -16242 + <SLOT> 16,17 - STATUS
POKE 54,5 - PR# <SLOT>
POKE 55,192 + <SLOT>
POKE 56,7 - IN# <SLOT>
POKE 57,192 + <SLOT>
CALL 1002
```

## SERIAL INTERFACE CARD

```
POKE 1144 + <SLOT>,64 -BRATE
POKE 1272 + <SLOT>,2 -STBITS
POKE 1400 + <SLOT>,7 -STATUS
POKE 1528 + <SLOT>,0 -CHARACTER
COUNTER
POKE 1784 + <SLOT>,80 -PWDTH
POKE 1912 + <SLOT>,9 -NBITS
POKE 2040 + <SLOT>,129 -FLAGS
POKE 54,7 -PR# <SLOT>
POKE 55,192 + <SLOT>
POKE 56,5 -IN# <SLOT>
POKE 57,192 + <SLOT>
CALL 1002
```

PLEASE NOTE: It is necessary to reference the manuals supplied with each interface card to further understand what the POKES and CALLS will accomplish.

Q. I have heard that the Programmer's Aid Programs are on the 3.3 Master Disk. Is there any truth to this?

A. Well, actually, they are on the BASICS disk that is supplied with 3.3 DOS. When you boot with this disk, you automatically load the Programmers Aid programs into the Language card with Integer Basic. This will only work on Plus APPLES with a 16K RAMcard (Language or other). Regular APPLES will still need to plug the ROM into socket D0.

Q. I'm still using DOS 3.1 on some of my disks and I noticed that pressing RESET on my APPLE II Plus causes a re-boot regardless of which program is running. This does not happen with DOS 3.2 or DOS 3.3. How can I defeat this re-booting?

A. If you use DOS 3.1 with the Autostart ROM, include these three POKES in your HELLO program:

```
POKE 1010,208
POKE 1011,3
POKE 1012,166
```

Q. Do you have the APPEND fix for DOS 3.2 and 3.2.1?

A. Yes. Here is a listing of a sample program. The problem is that DOS does not write an END OF FILE marker as it should all of the time. The fix causes a marker to be written regardless.

```
10 D$ = CHR$( 4)
20 POKE 768,169
30 POKE 769,0
40 POKE 770,76
50 POKE 771,237
60 POKE 772,253
70 REM NOW TO USE IT!
80 PRINT D$;"APPEND FILE"
90 PRINT D$;"WRITE FILE"
100 PRINT "THIS IS DATA"
```

contd.



```

110 PRINT "SO IS THIS"
120 CALL 768: PRINT: REM THIS IS IT!
130 PRINT D$;"CLOSE FILE"
140 END

```

Q. How do I define a function in one program and then CHAIN to another program using the same function? I have had all sorts of problems with this.

A. The functions must be first defined in the same place (and preferably the same line numbers) in BOTH programs as the following sample illustrates:

PROGRAM #1

```

10 DEF FN A(X) = SQR (X)
20 PRINT FN A(2)
30 PRINT CHR$(4);"BLOAD CHAIN,A520"
40 CALL 520"PROGRAM #2"

```

PROGRAM #2

```

10 DEF FN A(X) = SQR (X)
20 PRINT FN A(3)
30 END

```

#### OTHER REVIEWS

In a review written covering early 40 column versions and published in the September 1981 CALL-A.P.P.L.E., Jeff Finn covered a distressing number of bugs but concluded with a positive recommendation. John Martellaro of PEELINGS II also covered the 40 column version and rated the program a best buy in the July-August issue (which issue, by the way, is the single best set of Apple word processor reviews yet published).

#### CONCLUSION

There is no question in my mind that for the money this is the best Apple word processor, by far. I wouldn't necessarily argue with anyone who chose one of the 80 column systems over SuperScribe, since their merits are relatively close overall and each is stronger than SuperScribe in one respect or another. In an office environment, for example, the relatively poor screen resolution and typing speed constraints of SuperScribe would probably make Letter Perfect or WordStar a better choice even at double or triple the cost for the total system. However, the decision is not close when the comparison is against the 40 column systems, subject only to the caveat that for the totally casual user EasyWriter and Magic Window are inherently somewhat easier to learn (in part because they have many fewer features), and far easier given their superior manuals.

In short, no matter what your word processing needs, be sure that SuperScribe is among the two or three systems that you investigate and try. I'd be surprised if most buyers didn't find it coming in first.

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# A PAGE FROM THE STACK

by Jill & Vance Giboney

There are three new disks for the Library this month:

- Volume 104 - DOS 3.3 BUSINESS A
- Volume 105 - DOS 3.3 FIG-FORTH UTILITIES
- Volume 106 - DOS 3.3 SCIENCE/ENGINEERING

BUSINESS A is composed of three major programs: Automatic Curve Choice, Loan Cash Flows and I.R.R., and Business Services. Both Automatic Curve Choice and Loan Cash Flows have introductory material that can be obtained by running the program, then entering an "I". A carriage return will give you a list of the commands. The Business Services program consists of modules on billing and inventory, each of which can be run from the menu. The text file commands in the inventory module are in REM statements and need to be updated with your file name before running.

FIG-FORTH/UTILITIES contains an implementation of FIG-FORTH 78. BRUNning FIG-FORTH 78 enters the language, and BRUNning Read FORTH Documentation gives the basic documentation for this implementation. Also included on the disk are a set of utilities, including ROWTSER (a super-zap program), Reminder Generator, and others.

SCIENCE/ENGINEERING contains a variety of engineering and science programs, such as Exterior Ballistics, Great Circle, Hi-Res Polynomial Plotting and Life of a Resource. The engineering programs can be accessed through the Engineering Menu.

Remember that the library needs your contributions - and will trade you a library disk of your choice for each disk that you contribute (public domain programs only, please!).

The following review of Volume 101, UTILITIES B, is contributed by Dave Morganstein.

CAT - A nifty menu/file manipulator.

COPY QUICK 3.3 - A faster copying routine for use with 2 controllers. Works on 3.3 Pascal or CP/M disks.

TED II+ DOCUMENTATION - Thanks to the Giboney family, documentation for the TED II+ EDITOR ASSEMBLER on Disk 8. Just BRUN to read.

TRANSFER - A new goody from Apple, Inc. Lets you move files between 13- and 16-sectored disks without any rebooting.

SWITCH 3.2.1/3.3.1 - A marvelous Double DOS program for quick switching between DOS's without rebooting. Beware of possible effects on memory size or routines usually run above \$8000.


WOZBOOT13 - Modify track zero for booting by all controllers without regard to PROMS installed.

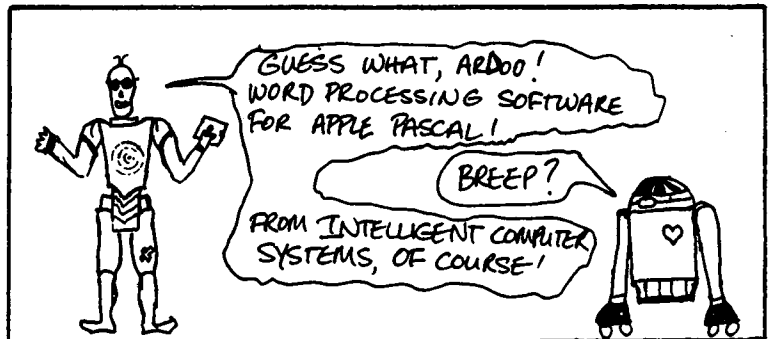
RELOCATE DOS TO MEMORY CARD - From July/August Call -A.P.P.L.E. Let's you put DOS on a 16K memory card in slot zero. Works with APPLE II+ only.


FAST FRE(0) A8192 L505 - A quick garbage collection routine from Call -A.P.P.L.E..

FAST FRE(0) RELOCATOR - A relocater for FAST FRE(0) so that it will run anywhere in memory.

CATALOG MANAGEMENT - Reviews PROG.LIST and displays description.

CATALOG MANAGEMENT - EDIT - Creates PROG.LIST modified for 16 sector DOS. 



<b>MS.SPELLER II</b>		<b>UPDATED VERSION</b>
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# SOFT VIEWS: NEW RELEASES

by David Morganstein

MS.SPELLER II (Intelligent Computer Systems Corporation). This program provides the capability to examine a Pascal text file and compare the contents with a dictionary of 30,000 or 60,000 words (depending on the number of disk drives available). CP/M users may be familiar with Spellguard, a program performing the same task in that system. Having made the comparison, several possibilities are presented for no match strings. If the user selects a manual correction option, then words may be corrected on the fly, entered into the dictionary, stored in a bad spellings list, or simply accepted in the current text with no change. The idea behind this program is to allow you to maintain a dictionary, which can easily be expanded, and to permit easy modification to your text when errors are found. If you have special areas of the text where no checking is to be performed, MS.SPELLER can be told to ignore those areas. The manual (10 pages), though brief, is clearly written and explains the use of the package in understandable terms. Other niceties include: a hardcopy option of the errors found; the generation of specialized dictionaries; and the use of a main and specialized dictionary at the same time. Just because this package is written in Pascal, however, doesn't limit its use to Pascal files. If you have Pascal, you can Huffin and Puffin files from DOS to Pascal and back again...

DBASE II (Ashton-Tate). I have never reviewed CP/M software before, but after using this (expensive) package, I had to pass along my reactions. DBASE is the most comprehensive data base 'plus' system I have seen. It is easy to use, comes with two manuals, one written by a non-programmer which is used to explain how to make the package work, and a second reference manual containing a section on each command. The package allows the easy CREATE'ion of data files, allowing you to specify the variables, their type, length, and number of decimal places if numeric. It allows easy EDITing of fields and APPEND'ing of new records. It permits screen editing on a variety of terminal types. Like some CP/M word processors, you configure the program for your terminal. (It can be used on a 40-column display as well, but this is a bit restrictive.) Two files can be active for MERGE'ing operations. Data can be easily read in from standard CP/M data files or can be SORT'ed with a one line command. An INDEX file can be created from any field and used to list the file in sorted order or used to FIND any record containing a field with a specified sub-string. Report FORMATS can be generated and saved for re-use. Command files can be built for automatic execution of repeated tasks. Now, after all that, the most amazing aspect. An integral part of the system is a structured language

which includes IF..THEN..ELSE, and DO..WHILE constructs, and permits the STORE'age and RESTORE'age of computed variables. You can 'program' this very complete and versatile package to do whatever you please. It's worth examining.

CASTLE WOLFENSTEIN (Muse). Ever since The Voice, a digitized speaking package from Muse, we have been waiting for another example of digitized speech from a Muse program. Castle is that package. If you ever wanted to take on a castle full of Nazi guards, 'speaking' a rough version of low-German, now is your chance. The program features you, as the American hero, hastily exploring the many-floored, many-roomed Castle, displayed in Hires, to find the secret Nazi war plans. Upon encountering Nazi guards your figure may: shoot them, throw grenades, pretend to be a Nazi, or be captured. It is an challenging escapade. You may need to refer to the German/English mini-dictionary to interpret your APPLE's German tongue...My major complaint with the program is that, upon your capture (and I was captured many times!!) the program recycles ALL the way back to the very beginning, including loading in of some very extensive data tables used to generate the speech. This is rather time-consuming and includes the whole slowly presented introduction. Say, Muse, can you do something about this?

STAR THIEF (Cavalier Computer). An arcade game featuring you (and, optionally, another ship) in a two-dimensional battle with the invading ships. Your objective: protect the powerpods. The objective is met by rotating your ship and moving about on the screen, 'asteroids' fashion, and blasting the enemy. The powerpods appear as geometric shapes in the center of the screen. This game is most likely of interest only to the younger APPLE arcadian. &

## LETTER TO THE EDITOR

I am a graduate student in Computer Science at the University of South Florida in Tampa. I am currently involved in research involving APPLE II hardware and software. Specifically, I am interested in interfacing a graphics tablet to an APPLE II system and decompiling the input from the tablet into either APPLE Pascal or APPLE Basic (Applesoft). If you are aware of any efforts that have been made in this area, I would very much like to know about it.

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# HIT PARADE by John Alden

Welcome to the continuing series of game surveys.

## CATEGORIES

-----  
 This month's article is somewhat different. With the holidays soon arriving, I felt it would be advantageous to give a listing of the top-rated games from prior surveys. This will, hopefully, aid people in purchasing their games for themselves and for gifts.

-----  
 Here is the schedule for conducting the surveys:

MEETING	CATEGORY SURVEYED
December	Space games (all)
January	Sport games (all)
February	Puzzle games (all)
March	Board games
April	Adventure (graphic)
May	War games (all)
June	Adventure (text)

The following surveys have been conducted:

June	Adventure (graphic)
July	War games (all)
August	Adventure (text)
September	Simulation (all)
October	Arcade
November	Recap of last year

-----  
 The groupings include adventure games, simulations, war games, arcade games, and puzzle games. Adventures, simulations, war games, and puzzles will be subgrouped into text or graphical games.

Each category or subcategory will be surveyed at the beginning of the SIGAMES meeting. The results will be presented at the next SIGAMES meeting and published in the following issue of the club newsletter.

Anyone who cannot attend the meetings and would like to contribute to the surveys should contact Al Gass, (703) 371-3560 or John Alden, (202) 686-1656.

New contributions will be incorporated into the appropriate survey and it will be republished as soon as possible.

GAMES:	ACTION	REALISM	RULES	BALANCE	STRATEGY	TACTICS	CUMM:	LIST \$
<b>WARGAMES:</b>								
COMPUTER CONFLICT	5.00	10.00	10.00	10.00	10.00	10.00	7.86	\$39.95
GUNSHIP	9.00	8.50	9.50	8.00	7.50	8.50	7.29	\$14.95
COMPUTER AIR COMB.	7.67	9.67	6.00	5.00	8.00	9.00	6.48	\$49.95
<b>TEXT ADVENTURES:</b>								
ZORK PART I	8.50	9.50	9.00	9.00	9.00	7.50	8.64	\$39.95
OO-TOPOS	8.00	8.00	8.00	8.00	8.00	8.00	7.86	\$29.95
CLASSIC ADVENTURE	5.67	9.33	8.67	9.00	7.00	5.67	7.62	\$29.95
<b>HI-RES ADVENTURES:</b>								
DATESTONE OF RYN	5.00	4.75	4.50	7.50	6.00	5.25	5.54	\$19.95
MORLOC'S TOWER	6.00	6.50	8.00	5.50	5.00	4.00	5.57	\$19.95
TEMPLE OF APSHAI	4.50	2.17	2.67	1.83	1.67	1.33	2.21	\$39.95

The surveys are based on the following seven categories:

**ACTION:** The action is the series of events which form the plot or theme of any game. It is the pace of the game. It should move along rapidly, yet the player should not have to defend his or her life when entering each new room or area. The game should not grind to a halt because the player cannot locate the tool or object necessary to advance past an obstacle.

**REALISM:** In a fantasy game???? Absolutely!!!! In the August issue of "Creative Computing", Robert Plamondon stated that realism "means that none of the events breaks the character's 'willing suspension of disbelief'. Players can accept magic and dragons as part of the background of the fantasy world. They cannot accept worlds that turn upside down at night, outdoor human colonies on the sun, or personal clues displayed on billboards."

**RULES:** Traditionally, the worst aspect of most games has been the rules. If they were complete, they were written for cryptographers. If the rules were at all understandable, they were incomplete.

**BALANCE:** How quickly were you killed the last time you tried an adventure game? Balance refers to the capability of the program to act as a referee and as your opponent and still present you with a fair chance to win.

**STRATEGY:** What is the overall game plan? Is it to get the golden apple, rescue the princess, destroy the asteroid, or escape the island? Strategy is the planning and developing of game goals.

**TACTICS:** Hand-to-hand combat!!! You versus the computer dragon!!! Tactics is the step-by-step process for a successful strategy.

**CUMM:** The cumulative score for each of the games surveyed.

**LIST \$:** The manufacturer's suggested list price.

# SPACE WAR (OR HOW TO LIVE WITH THE HIRES PAGE)

by David Morganstein

Have you ever written a big (i.e. 24 sector) program in Applesoft that does an HGR, only to run the program and find some of it wiped away? Have you ever listed Appleplot and found some "funny stuff" in there? If the answer to either of these questions was yes, read on. If it was no, you might find this article of interest anyway!!! It's about the war for the RAM space in your APPLE, the battle between Applesoft programs and Hires displays...

The point of this discussion is that the APPLE creators, in their all-knowing wisdom, allow us to use the memory area from \$800 to \$9600 for our Applesoft programs. However, the Hires pages sit right in the middle of this area, page one from \$2000 to \$3FFF and page two from \$4000 to \$5FFF. The usual choices for relatively small programs requiring Hires are:

1. Set HIMEM just below the Hires page needed, causing all variables to fall below the Hires area in use.
2. Move the Applesoft program above the Hires page needed.

Both of these methods greatly restrict the size of the program and the number of variable to be used. To use either method, you may have to logically separate the program into fragments which can be CHAIN'ed together. This can be awkward, since commonly used subroutines may have to be repeated in each fragment, etc., etc.

Needless to say, there is an alternative (I know you are not surprised to hear that...). The basic program can be broken into two pieces, both of which are in memory at the same time. One piece is located below the Hires page and the other is above it. This is how the Appleplot program solves this problem, and so can you.

To see how this method operates, we must first understand a bit about the structure of Applesoft programs in memory and we must learn about a few "pointers" that are maintained by Applesoft to know where things are in the computer. Let's start with the "pointers".

When an Applesoft program is brought into memory, the interpreter notes where the program begins and where it ends. These locations are obviously needed for such things as: where to start interpreting basic code, and what area of memory is to be SAVE'd when the SAVE command is given. Anyway, when you type NEW and begin a new program, these locations are set to \$801. To be more specific, locations \$67 and \$68 contain the starting location of the basic source statements, and locations \$AF and \$B0 contain the ending location. Each of

these pairs define a two-byte address with the low byte given first (e.g., \$67 has the low byte of the start address). A picture of the memory usage is found on page 127 of your Applesoft manual.

Many folks realize that by manipulating these addresses we can change where an Applesoft program will load and how much of the memory will be saved when a SAVE command is given.

The next thing to understand is how the many lines of basic code are linked together when they are in memory. Each line contains the following common elements:

- o the first two bytes contain the address of the following line
- o the next two bytes contain the line number
- o the last byte of the line is a \$00
- o the stuff in between is your tokenized line of code.

Only the first of these items, the pointer to the next line, is relevant to our problem.

To begin to state the solution, follow these thoughts...first, we find what lines of code are beginning to encroach upon the Hires page being used. Next, we save two halves of our program, the part which sits neatly below the Hires area, and the rest. We load the second part into memory above the Hires page, the first part below the Hires page and then...link the two halves together by changing the pointer in the last line of the first part to point to the first line of the last part. (And the party of the second part...) Okay, so that's rushing it a bit...

First, we must divide the basic program into two pieces, one of which will reside in memory below the Hires page used. This piece of code will begin at \$800 where Applesoft programs normally load and go up to either \$2000 or \$4000 depending on which Hires page you need. The second half of the program will be put above the Hires page, starting at either \$4000 or \$6000. The actual division of the program can be accomplished easily by DEL'eting each half and saving the balance of the program. The biggest problem is deciding at what line number to cut the program code. To determine this, go into the monitor, CALL -151, and dump the memory just in front of the Hires page to be used. Find the beginning of an Applesoft line and determine what line number is located just below the Hires page.

Fine, you say, how do I recognize an Applesoft line in hex? Begin by finding a

contd.

hex '00'. This may define the end of a line. If it does, it will be followed by two pairs of bytes which point to the start of the next line. The first pair of bytes will be an address, stored low byte first, of the next line. The second pair of bytes will be the line number, low byte first, converted into hex. For example, if you see the following:  
'1F20: 00 34 1F 00 09', interpret the '00' as the end of the previous line, the '34 1F' as a pointer to the next line of Applesoft to be located at \$1F34, and interpret line number as \$0900 hex or 2304 decimal. Great, now you can define the two halves of the program as lines before 2304 and lines from there on.

After saving the two halves of the program on disk, the second part of the process begins. (Before saving the first part, add a line at the end of it reading GOTO n, where n is the first line of the second half of the program. (This appears necessary to allow a smooth transition between program halves.)

Load the first part of the program. Go to the monitor. Look at \$67 and \$68. These form the address of the beginning line. They should indicate that the first half begins at \$801. Look at \$AF and \$B0. These should indicate the end of the first half, an address now below the Hires page. Change \$67 and \$68 to point to \$4001, just above Hires page one, or \$6001 if page two is to be skipped.

Now load the second half of the program. \$AF and \$B0 should now point to an address above the Hires page. Both halves of the program are now in memory. Change \$67 and \$68 back to \$801. The beginning and ending pointers now contain both halves of the program with a big hole in the middle... the Hires page.

One last thing. Before saving the recombined halves, the last line of the first half, the one with the GOTO n, must be changed. The part of the hex code which points to the next line must point to location \$4001 (or \$6001), the first line above the Hires page. Find the last line below the Hires page; the pointer bytes must be pointing to an address below the Hires page. Change them to point to \$4001. Done!!!

Save the combined halves, modified to be connected. Note that your program has grown by some 32 sectors, the size of the hole created by the Hires page. &

QUOTABLE QUOTES

## SO YOU WANT TO UP- GRADE YOUR APPLE II by Bernie Urban

Tom Sethre's article "Serendipity Revisited", Call -A.P.P.L.E., October 1981, got me thinking. Like Tom, I had upgraded my three-year-old APPLE II. Unlike Tom, I had to do so through necessity - my old motherboard had gone bad. My upgrade consisted of a version 7 motherboard with Autostart ROM, a Microsoft RAMcard and DOS 3.3. I added a switch so we could easily choose either DOS 3.2 or 3.3. Was I happy with this upgrade? No. Most of our favorite diskettes require Applesoft, so we were constantly booting System Master to load it into the RAMcard. Problem, how do I switch to an APPLE II Plus and have my cake and eat it, too?

Well, one way would be to sell the APPLE II and start all over with an APPLE II Plus. Tom's article suggested another, i.e. replace all Integer ROM chips on the motherboard with chips cannibalized from an Applesoft firmware card. I can kill two chips with one ROM by plugging the Integer ROM chips into the firmware card and, per Dave Morganstein's article in WAP November 1981, plug the card into slot 4. Now I have an APPLE II Plus, an extra 16K operating out of slot 0 and an Integer firmware card available in slot 4. I also added Call -A.P.P.L.E.'s Ap.LCase chip which lets me see upper and lower case when using word processors.

Tom's article referenced an earlier article by David E. Goss, Call -A.P.P.L.E. May 1981, in which David suggests revising System Master (not the original but a working copy!) so that it automatically loads a revised INTBASIC into the RAMcard. By following their lead I can automatically load such goodies as the Program Line Editor, Higher Text, etc. into unused nooks and crannies of memory. I'll keep you posted as I go through this exercise.

Meanwhile, gotta leave...just got a hot tip that there's a fix which allows me to plug the IBM personal computer typewriter umbilical directly into my game socket. After that, I'm gonna get the NIRVANA card and then go SNIPE hunting!!! &

# Big, Beautiful Apples

There Must Be 50  
Ways to Treat Them

Just Consider These  
Hard-Core Facts

# APPLE ROOTS: A REVIEW

by Jim Graham

One APPLE program which I had been looking forward to using was APPLEROOTS, a program for creating and maintaining genealogical records. I was unable to locate it locally for many months, even after asking at several computer stores. Ultimately, I found it while in Houston, bought it, and have used it for some time now. The following is my evaluation:

APPLEROOTS is written in Applesoft and needs one disk drive to run. It requires 24K of memory with an APPLE II Plus or an Applesoft firmware card, or 36K with disk or RAM Applesoft. I have had no problem running it on my system with RAM Applesoft, and now with a 16K RAMcard. It is advertised as being capable of storing 260-350 records per disk. Program documentation, which consists of a 24-page booklet and sample chart, is adequate. The program is copyable, and it has to be for proper use and back up. The APPLEROOTS program must reside on the disk to which records and files are being saved because of the highly dynamic file read-write routines and the frequent running of program subroutines.

On booting the diskette, the following menu appears:

- 1=CONFIGURE SYSTEM
- 2=DELETE TEXT FILES
- 3=RUN APPLEROOTS PROGRAM


On the initial use of the program the first thing that must be done is to configure the program to the user's needs. Unless this is done, the menu will not disappear. There are 17 fields built into the program, with field sizes specified initially. It is possible, however, for the user to change the default field titles and/or field sizes, except for 3 fields sizes which are frozen at 3 characters each and which are used as record cross-references, such as parent-child, husband-wife, etc. In this manner, then, the program very flexibly meets the individual needs of each user. Not all 17 fields have to be used, and as with any data base, the larger the number and size of the fields, the fewer records can be accommodated. Initial configuration of the program is very easy, with ample instructions provided.

After the system is configured, the program is run by choosing menu item #3 "RUN APPLEROOTS PROGRAM". You immediately see the program menu (which normally comes up after every disk boot). The main menu offers the following choices, which summarize the major capabilities of the program:

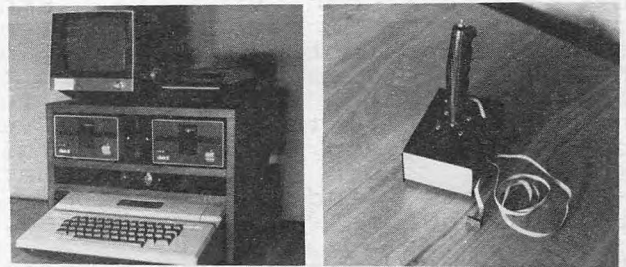
- 1=ENTER RECORDS
- 2=CHANGE RECORDS
- 3=DELETE RECORDS
- 4=PRINT INDEX OF RECORDS
- 5=PRINT LIST OF CHILDREN
- 6=PRINT FAMILY RECORD
- 7=PRINT FOUR GENERATION PEDIGREE
- 8=EXIT SYTEM

It is not possible without extensive discussion to cover all the above alternatives. However, some of the features are more usable and convenient than others. A basic feature is the ability to print either an index showing every record in the file, or the contents of any or all records in the file (menu item #4). Another very nice feature is menu item #7, which is a graphic representation of four generations. When carried out over many generations, this feature generates a product much like a family tree, and can be run at any level in the hierarchy of ancestors. The two remaining features #5 and #6) both require some fairly inefficient and lengthy disk-access processes, and I haven't found them useful because of the time required to run them.

In summary, APPLEROOTS is a very specialized data base type program, with some nice features. It is not overly complex and will likely meet the needs of anyone wanting to store, retrieve and display information about ancestors. It is also said to be useful for maintaining records for animal breeding, for example. It does not have a search capability within records, screen mapping for laying out report formats, or sorting capabilities. But it does what it says it will do, and for the price is a worthwhile addition to the library of one who needs its capabilities.

APPLEROOTS is published by CDS Corporation, 695 East 10th North, Logan, Utah 84321; (801) 753-6990. The price is \$39.95. 

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# THE ACCOUNTANT: A REVIEW

by R.G. Bickel

Since buying my Apple nearly two years ago, I've been looking for a home finance system that would really get the job done. I spent a great deal of effort trying to make TRAC and some of the other "checkbook" programs work, but my high expectations in each case were replaced by disappointment. I couldn't even handle paying a charge card from a checking account or record cash transactions in these programs, and found that it was not even worth wasting my time making the entries.

The business oriented programs looked good, but were very expensive and typically required two disc drives - and I only had one. Also, they were all designed for someone who knew something about accounting, and I am in no way able to reliably deal with debits and credits. Even though I have engineering and medical backgrounds and work with computer applications in medicine, I have always found myself blocked by accounting terminology and conventions. Reconstructing a year's activity from cancelled checks and receipts at tax time has generally been an agonizing experience.

So I kept on looking, and a few months ago I finally came across a program that did what I wanted it to do. It is "The Accountant", which was written by Ernest Forman and is being sold through Decision Support Software in McLean, Virginia. Ernie is a Professor of Management Science at George Washington University, and that fact is clearly evident in the care and planning that has gone into this work. It is not only very sophisticated and full of surprising features, such as automatic transactions and linkages to Visicalc, but is very easy to use.

Although it uses "double entry" bookkeeping, which is versatile but nonetheless foreboding to people like me, it does so by a menu-driven method that lets the non-accountant simply select "increases" or "decreases" in the accounts involved. The system then figures out whether a debit or credit is involved in each instance, depending on the type of account, and won't let you proceed until a correct or balanced transaction is entered. The entire process of entering a transaction, including a 17 letter description, date, the accounts involved, the amount, and an optional code is both fast and simple.

Entering the needed account or code can be done either by its number or (usually) by enough of its name to

identify it. I set up all of my account names with unique first two letters to make life easier. Up to 63 accounts and 63 separate codes may be defined in this system, and any or all may be "inverted". Although inverted accounts or codes make for very rapid access to transactions, since the transactions need not be searched one by one, they do reduce the amount of disk space available for transactions.

A stored transaction is compressed to 30 characters on the disk. Depending on whether one opts to make room for additional transactions by moving program files to a separate disk and on the number of accounts inverted, up to several thousand transactions will fit on a single disk. I've got fewer than 2000 transactions for the year as of early November.

A wide variety of useful functions can be performed by the Accountant program. It can, of course, list transactions for any account or any code, and does so either by range of transaction numbers or by range of dates. Monthly cumulative summaries of accounts, including a bar graph display, are provided. A built-in "desktop calculator" function can be accessed even while in the middle of entering a transaction, and its result can be automatically transferred back without re-keying. Separate lists of recurring transactions, such as monthly income, budgeting, etc. can be kept, and these entire lists entered "automatically" at the beginning of a month or whenever desired.

Fixing errors discovered in transactions is simple. One can edit any transaction using a format and prompting routine identical to that used during initial entry.

I've not yet fully exercised the Visicalc interface program, (which can be used to take totals from specified accounts or codes and insert them into a comprehensive Visicalc income tax calculating format) with my own data. However, I have used it on the complete demonstration data base which comes with the program. It is a slick piece of work, since it not only will figure your tax painlessly at the end of the year, but will project current balances and extrapolate based on the year to date. Thus, if you are withholding either too much or not enough, you can do what's needed to stay right on track with the IRS without tying up funds needlessly.

I've been particularly impressed by the quality of human engineering and

contd.

"user-friendliness" that has been built into this program. Single key selects from menus, appropriate default entries, presentation of available account or code entries when needed, and the avoidance of conditions that one cannot quit or escape from if he changes his mind are all carefully thought out. Audible "happy" and "sad" sounds, respectively, are used to mark proper completions and errors, so that one knows immediately whether one has to re-check the screen before proceeding.

Limitations of the current version include the need to enter transactions in strict date order, and the inability to backdate the entry of a missed item. While one may simply enter it as of the date discovered, this keeps the monthly summaries from being as useful as they should. A fix for this is now available, although it causes the computer to have to run for awhile once you are done in order to resort and rebuild the files. The program also pauses for a few seconds every now and then while the Apple clears its free memory. This can result in typing ahead without entering anything, but is a fairly minor and easily corrected problem.

The most recent version of program documentation is much clearer than the initial version, and it also includes an excellent tutorial for both home and for small business users of the system. The demonstration data base and the instructions and programs for setting up one's own accounts and codes are uniformly well done. A number of additional features, such as split transactions, grouped account reporting, and cleared check search and reconciliation are in final testing now and should appear in future updates.

All in all, the Accountant represents a very nice and thorough piece of work. It handles my three checking accounts, cash expenditures for each family member, a variety of assets, credit cards and loans, and a substantial number of budgeted category accounts (such as groceries, utilities, etc.) with ease. I'm almost looking forward to April 15th next year. It'll all be there in the system this time. ☺



### THE INSPECTOR

These utilities enable the user to examine data both in the Apple's memory and on disks. Simple commands allow scanning through RAM and ROM memory as well as reading, displaying and changing data on disk.

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Its unique NIBBLE read routine provides a Hi-Res graphical representation of the data on any track allowing you to immediately ascertain whether your disk is 13 sector or 16 sector. Get an I/O error...is it because you have the wrong DOS up? is it because of a bad address field? or a bad data field? or because a track was erased? This will allow you to tell in an instant without blowing away any program in memory.

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- Searches Memory
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- Outputs Screen to Printer
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The INSPECTOR even lets you search through an entire disk or through on-board memory for the appearance of a string. Now you can easily add lower case to your programs (with LCA).

Do you want to add so-called illegal line numbers into your program? or have several of the same line numbers in a program (like the professional programmers do)? or input unavailable commands (like HIMEM to Integer Basic)? or put quotation marks into PRINT statements? Here's the easy way to do them all!

### AND MORE

The INSPECTOR provides a USER exit that will interface your own subroutines with those of the INSPECTOR itself. For example, just put a screen dump routine (sample included in documentation) at HEX 0300 and press CTRL-Z. The contents of the screen page will print to your printer.

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All Apple II configurations that have access to Integer Basic (either in ROM or RAM) will support The INSPECTOR. Just place the chip in empty socket D8 either on the mother board or in an Integer firmware card. Apple II+ systems with RAM expansion boards or language systems will receive the INSPECTOR on disk to merge and load with INTBASIC.

And...if you have an Apple II+, without either RAM or ROM access to Integer Basic, you will still be able to use The INSPECTOR because we are making available 16k RAM expansion boards at a very affordable price. Not only will you be able to use The INSPECTOR, but you will also have access to Integer Basic and other languages. Our price for BOTH the INSPECTOR and our 16k RAM board is \$169.95, less than most RAM boards alone. Call our office for details.

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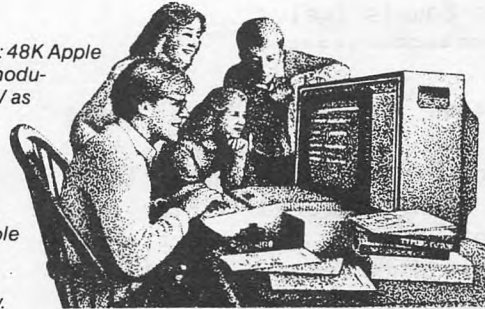
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# BLAISE AWAY! SWITCHED-ON BLOCKS OR SALTING IT AWAY AT THE BANK

by Dr. Wo

Faster than a floppy disk, cheaper than a hard disk and four times bigger than a 16K card. What is it? A 64K RAM card for \$350 from Legend Industries and Great Lakes Digital Resources of Detroit, (313) 538-7963. I've been having some fun with one of these rascals recently.

## Sixty-four Equals Twelve =====

As you may know if you have considered the operation of your Language Card or 16K RAM card, there are 16K of RAM squeezed into the highest 12K of address space on your Apple. This is done because the 4K of RAM from \$C000 to \$CFFF is devoted to device I-O for peripherals, and is therefore unavailable for general programming, and is accomplished by switching two 4K blocks of RAM in and out of the area from \$D000 to \$DFFF. When running Pascal, one of these 4K blocks is occupied by part of the P-code interpreter, and the other is occupied by the BIOS, or basic I-O sub-system drivers.

Now imagine extending this idea to include switching between four 16K blocks each of which contains two 4K blocks which can be switched in and out and you have the Legend 64K RAM card!! At any given time, only 12 of the 64K is accessible to the Apple, but that 12K can be selected by the programmer.

## Using the Card =====

Functionally, the Legend 64K card conforms to the same device select address conventions employed by Apple with the Language Card. Consequently, it will act exactly like the Language Card when installed in slot C and used with Pascal or the Z-80 Softcard and such. Several cards can be installed and with proper management each one

provides an additional 64K of RAM.

Now that's nice but hardly exciting if you already own a Language System. The real question of interest is what can you do with it besides. The answer is lots, and that's exciting!

Three uses come to mind quickly: disk emulation, storage of assembly language programs callable from a Pascal host and, of course, random access memory.

Using the card for disk emulation is eminently doable as evidenced by the program below. Using it as RAM for storage of virtual arrays, for example, is also straightforward. The next part is that both of these tasks can be cleanly accomplished using the system attach utility provided by Apple (see below) so that the RAM card becomes an intrinsic part of the Pascal I-O system. This means that when used as a virtual disk, all of the system file operations ranging from "read" and "write" down to "unitread" and "unitwrite" and file directory maintenance are available and your programs remain 100% portable-- no hardware dependencies here.

Using the card for storing assembly language programs seems a little trickier since you have to have some way to load those programs into the card and then know where to jump to on the card. I haven't actually tried this.

Using the card as a virtual disk can speed up execution dramatically. My favorite is to store heavily segmented programs on the card thereby reducing the time needed to swap segments in and out of memory. I have also used the card to store scratch files. I haven't done any timing runs so I can't give you any hard data but I am very pleased with the speed up.

contd.

## I'm Getting Attached to You

=====

The key to making the card into a virtual disk is a pair of utility programs and accompanying documentation called "Attach-BIOS" supplied by Apple through the International Apple Core and its member clubs. (See your librarian for a copy.) The documentation, which is excellent and contains a wealth of information about the BIOS, establishes the protocol for writing device drivers which can then be patched into the Pascal system using the utility.

Given a device and a driver, we use one of the utility programs to assign the pair a unit number by which the operating system directs I-O to the device. In case the unit number is one of the pre-assigned disk unit numbers, (4, 5 and 9 through 12) the system is able to direct all I-O to the device exactly as if it were a disk drive.

There are four tasks the driver must accomplish: initialization, fielding status and control requests, and reading and writing. These four tasks correspond one for one with calls to "unitclear", "unitstatus", "unitread" and "unitwrite" from the Pascal level. These are the lowest level calls for I-O in the Pascal system and for that reason they are the fastest and for some purposes most flexible calls, but also the most dangerous. All other I-O calls from Pascal to a device are built on these foundations.

The parameters passed by "unitread" and "unitwrite" are accessed directly by the device driver. In the case of a disk-like device the four most important are the unit number, the starting memory address from (to) which data is to be read (written), the number of bytes to be read (written) and the starting block on disk to (from) which data is to be written (read). All disk-like devices must be organized logically into blocks of 512 bytes and all I-O on the disk end must begin on block boundaries.

One of the attach programs, SYSTEM.ATTACH, is executed automatically at boot time and places the code for the driver(s) on top of the system heap and marks the top of the heap accordingly. The attach program is executed before even SYSTEM.STARTUP if that is present. Program memory is lost equal to the size of the driver(s) installed.

## Drive On!

=====

The assembly language procedure RAMDRIVER makes the 64K RAM Card into a virtual disk when attached to the Pascal BIOS.

The driver is organized into a set of subroutines, tasks which must be accomplished in order for information to be successfully transferred to and from the card. This may not be the fastest coding for disk emulation but it works and is compatible with ms Pascal programming style. In fact, I followed Bill Schultheis' suggestion in a recent Apple Pi, I wrote my first draft of the code in Pascal then "compiled" it to assembly code.

Exclusive of the tasks imposed by the BIOS protocol, the subroutines accomplish the followings:

- \*Turning off the Language Card and turning on the Ram Card and vice-versa. (entry and exit)
- \*Keeping track of the number of bytes transferred including page crossings (256 bytes transferred) and block crossings (512 bytes transferred) (BUMPCOUNT and TESTCOUNT)
- \*Setting up pointers to "disk" block boundaries (SETBLKPNTRS)
- \*Testing whether the current block number is legal-- there are 128 512-byte blocks on 64K card numbered 0 to 127 (TESTBLK).
- \*Selecting the correct 16K memory bank and 4K sub-bank

contd.

(SELECTBANK).

The driver is written on the assumption you will install the RAM card in slot 4. It can trivially be changed to accomodate another slot just by changing the addresses \$COCX to those corresponding to the desired slot. You could also rewrite the driver to become truly slot independent and pass it the slot number via a call to "unitstatus". This routine was included in the attach protocol for such purposes.

The driver makes no calls to "CONCK", the system's console driver routine which supports the type-ahead buffer. If you decide to do this make sure you keep track of where you are: the console check routine is on the language card, of course, so you probably want to call it only once just before you switch to the RAM card and start disk I-O.

The RAM card is organized logically into 128 512-byte blocks. Blocks 0 through 31 are assigned to the first of the four 16K banks and within this blocks 0 through 7 are assigned to the first 4K sub-bank and so on.

Mounting the Disk Emulator  
=====

Once you have assembled the driver you are ready to attach it to the system using the attach utility programs. In order to make it into a fully functional virtual disk you must attach it to one of the predeclared disk unit numbers. Since I have a three drive system I assign the emulator to unit 12.

Having attached the RAM card to the system, the last step is to enter the filer and Z(ero) the directory of the virtual disk. When the operating system asks you what unit, enter the unit number to which the driver is attached and when it asks for the number of blocks on the disk answer 128. You now have a 128 block instant access virtual disk!

BLAISE AWAY !!!

*Dr. Wo*

contd.

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```

MAXBLK      .EQU 80
;TEMPORARY REGISTERS
;SOME MAY HAVE TO BE CHANGED IF CONCK IS IMPLEMENTED

PASCAL      .EQU 00
STATPNTR    .EQU 02
CNTRLWRD    .EQU 04
BLKNUM      .EQU 06
BYTECNT     .EQU 08
BUFFADRS    .EQU 0A
UNITNUM     .EQU 0C
BLKPNTR     .EQU 0E
COUNT      .EQU 10
TEMP        .EQU 12

```

```

;WRITE PROTECT SWITCHES
SAVLANG     .EQU 0C082
SAVRAM      .EQU 0C0C2

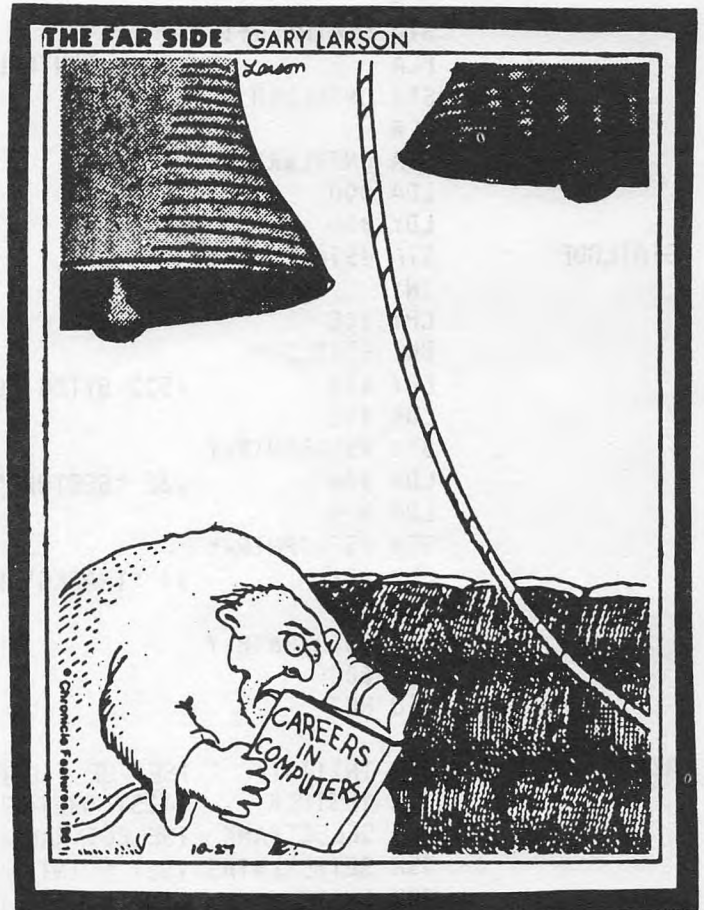
;SELECT SWITCHES
LANGON      .EQU 0C083
RAMON       .EQU 0C0C3

;DESELECT SWITCHES
LANGOFF     .EQU 0C081
RAMOFF      .EQU 0C0C1

;16K BANK SELECT SWITCH
BANKSEL     .EQU 0C0C4

;4K SUB-BANK SWITCHES
BANKONE     .EQU 0C0CB
BANKTWO     .EQU 0C0C3

```



```

.PROC RAMDRIVER
PLA
STA PASCAL      ;SAVE RETURN ADDRESS
PLA
STA PASCAL+1

LDA SAVLANG     ;WRITE PROTECT SLOT 0 RAM-CARD
LDA LANGOFF     ;TURN OFF SLOT 0 RAM-CARD
CPX #2          ;CALL FOR INITIALIZATION?
BEQ INIT
CPX #4          ;CALL FOR STATUS?
BEQ STATUS
CPX #0          ;CALL FOR READ?
BEQ READ
CPX #1          ;CALL FOR WRITE?
BEQ WRITE
LDX #3          ;ILLEGAL OPERATION, I-O ERROR

RET
LDA SAVRAM      ;WRITE PROTECT 64K RAM CARD
LDA RAMOFF      ;TURN OFF 64K RAM CARD
LDA LANGON      ;SELECT SLOT 0 LANGUAGE CARD
LDA PASCAL+1
PHA
LDA PASCAL
PHA
RTS             ;BACK TO MOMMA

INIT
LDX #00

```

contd.



```

BEQ RET

STATUS      PLA          ;PULL STATUS BUFFER POINTER
            STA STATPNTR
            PLA
            STA STATPNTR+1
            PLA          ;PULL CONTROL WORD
            STA CNTRLWRD
            PLA
            STA CNTRLWRD+1
            LDA #00
            LDY #00
STATLOOP    STA @STATPNTR,Y
            INY
            CPY #08
            BNE STATLOOP
            LDY #03          ;512 BYTES PER "SECTOR"
            LDA #02
            STA @STATPNTR,Y
            LDY #04          ;32 "SECTORS" PER "TRACK"
            LDA #20
            STA @STATPNTR,Y
            LDY #06          ;4 "TRACKS" PER "DISK"
            LDA #04
            STA @STATPNTR,Y
            LDX #00
            BEQ RET

READ        JSR INITIO      ;SET UP I-O PARAMETERS
            JSR TESTBLK     ;TEST WHETHER STARTING BLOCK IS IN 0..127
            JSR SELECTBANK  ;SELECT RAM CARD BANK
            JSR SETBLKPNTRS ;SET POINTERS TO RAM CARD "DISK BLOCKS"
            JSR INITCOUNT  ;INITIALIZE DATA COUNT
READLOOP    JSR TESTCOUNT  ;TEST IN CASE 0 BYTES ARE TO BE TRANSFERRED
            CPX #00
            BEQ RET          ;BYTECNT BYTES TRANSFERRED?
            LDY COUNT        ;NO, TRANSFER ONE BYTE FROM DISK TO BUFFER
            LDA @BLKPNTR,Y
            STA @BUFFADRS,Y
            JSR BUMPCOUNT    ;INCREMENT THE TRANSFER COUNT
            JMP READLOOP

WRITE       LDA RAMON       ;THROW 64K SWITCH TO ENABLE WRITING
            JSR INITIO      ;SET UP I-O PARAMETERS
            JSR TESTBLK     ;TEST WHETHER STARTING BLOCK IS IN 0..127
            JSR SELECTBANK  ;SELECT RAM CARD BANK
            JSR SETBLKPNTRS ;SET POINTERS TO RAM CARD "DISK BLOCKS"
            JSR INITCOUNT  ;INITIALIZE DATA COUNT
WRITELOOP   JSR TESTCOUNT  ;TEST IN CASE 0 BYTES ARE TO BE TRANSFERRED
            CPX #00
            BEQ RET          ;BYTECNT BYTES TRANSFERRED?
            LDY COUNT        ;TRANSFER ONE BYTE FROM BUFFER TO DISK
            LDA @BUFFADRS,Y
            STA @BLKPNTR,Y
            JSR BUMPCOUNT    ;INCREMENT THE TRANSFER COUNT
            JMP WRITELOOP

INITIO      PLA          ;PULL ADDRESS OF CALLER
            STA TEMP

```

contd.

```

PLA
STA TEMP+1
PLA
STA BLKNUM
PLA
STA BLKNUM+1
PLA
STA BYTECNT
PLA
STA BYTECNT+1
PLA
STA BUFFADRS
PLA
STA BUFFADRS+1
PLA
STA UNITNUM
PLA
STA UNITNUM+1
PLA
STA CNTRLWRD
PLA
STA CNTRLWRD+1
LDA TEMP+1
PHA
LDA TEMP
PHA
RTS

```

```

;PUSH CALLERS ADDRESS

```

```

BUMPCOUNT      INC COUNT      ;INCREMENT COUNT

```

```

LDA COUNT
BNE BUMPRTS   ;256 BYTES TRANSFERRED? (CROSSED PAGE BOUNDARY)
INC BLKPNT+1 ;YES, SO INCREMENT POINTERS TO NEW PAGES
INC BUFFADRS+1
INC COUNT+1
LDA COUNT+1
ROR A

```

```

NEWBLOCK      BCS BUMPRTS   ;DID WE CROSS A "DISK BLOCK" BOUNDARY?

```

```

JSR TESTCOUNT ;YES, TEST IF DONE WITH I-O
CPX #00
BEQ BUMPRTS   ;BYTECNT BYTES TRANSFERRED?
INC BLKNUM    ;NO, SO INCREMENT THE BLOCK NUMBER
JSR TESTBLK   ;TEST IF IN RANGE 0..127
JSR SELECTBANK
JSR SETBLKPNTS

```

```

BUMPRTS      RTS

```

```

INITCOUNT   LDA #00
              STA COUNT
              STA COUNT+1
              RTS

```

```

TESTCOUNT   LDA BYTECNT
              CMP COUNT
              BNE LOWCOUNT
              LDA BYTECNT+1
              CMP COUNT+1
              BNE LOWCOUNT
              LDX #00
              ;I-O COMPLETION CODE, BYTECNT BYTES DONE
              ;GO BACK TO CALLER
              RTS

```

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```

LOWCOUNT      LDX #0FF          ;I-O INCOMPLETE
TESTRTS        RTS

TESTBLK        LDA BLKNUM
                CMP #MAXBLK
                BCC BLKOK
                PLA
                PLA          ;PULL RTS ADDRESS FROM STACK, DISCARD
                LDX #40      ;LOAD DEVICE ERROR, BAD BLOCK
                JMP RET      ;EXIT
BLKOK          RTS

SELECTBANK     LDA BLKNUM
                ROL A        ;DIVIDE BLKNUM BY #20=32 SINCE THERE
                ROL A        ;ARE 32 "DISK BLOCKS" PER 16K RAM BANK
                ROL A
                ROL A
                AND #03      ;SELECT THE APPROPRIATE 16K BANK, 0..3
                TAY
                LDA BLKNUM   ;CALCULATE BLKNUM MODULO 32
                AND #1F
                CMP #08      ;BLOCKNUM < 8?
                BCC FIRST4K  ;YES, FIRST 4K SUB-BANK IS USED
                TYA
                STA BANKSEL
                LDA BANKTWO  ;NO, SO SELECT THE SECOND 4K SUB-BANK
                RTS
FIRST4K        TYA
                STA BANKSEL
                LDA BANKONE  ;SELECT THE FIRST 4K SUB-BANK
                RTS

SETBLKPNTRS   LDA #00
                STA BLKPNTN
                LDA BLKNUM
                AND #1F      ;BLKNUM MODULO 32
                CMP #10      ;BLOCKNUM MOD 32 < 16?
                BCC FIRST16  ;YES, SO USE FIRST 16 "DISK BLOCKS"
                SEC          ;NO, SO SUBTRACT 16
                SBC #10
                CLC          ;MULTIPLY BY 2
                ROL A
                ADC #0E0     ;ADD #E0 TO POINT TO SECOND 16 "DISK BLOCKS"
                STA BLKPNTN+1
                RTS
FIRST16        LDA BLKNUM
                AND #07
                CLC
                ROL A
                ADC #0D0
                STA BLKPNTN+1
                RTS

.END

```

# AUTOMATIC DIALING FOR DATA CAPTURE

## 4.0 by Paul Hoffman

This is a short do-it-yourself article on how one can get automatic dialing by just adding two lines to Data Capture 4.0. I was tired of having to always enter the phone number of the ABBS, and thought that there had to be a better and easier way. There is, and it can be done by only adding two lines to your present program.

First, get Data Capture up and running. Then type ESC to get the menu, Q to quit and Y for yes, you want to quit. Now you should be in Basic, and all you have to do is type in the additional two lines, run the program to see that it works, then delete the original Data Capture and save the new modified one. Type in the following, and it should work. I put in the phone number of the Washington Apple Pi ABBS. You can, of course, replace this number with the one that you call most often. Just type in:

```
1015 HTAB X: PRINT "F)AST DIAL WAP ABBS
*****"
1175 IF Z$ = "F" THEN PH$ = "983-9317":
GOTO 3570
```

```
UNLOCK DATA CAPTURE 4.0
DELETE DATA CAPTURE 4.0
SAVE DATA CAPTURE 4.0
LOCK DATA CAPTURE 4.0
```

That's all there is to it. If you want to add a second number, just add the following before you save your new "Data Capture":

```
1016 HTAB X: PRINT "G)ET GAITHERSBURG
ABBS"
1176 IF Z$ = "G" THEN PH$ = "840-8588":
GOTO 3570
```

I hope you like this little addition. It sure makes getting on the ABBS much faster and easier. If you have any questions, or it doesn't work, give me a call on the ABBS or the phone (Office, 530-4700; Home, 831-7433) and I'll try to help.



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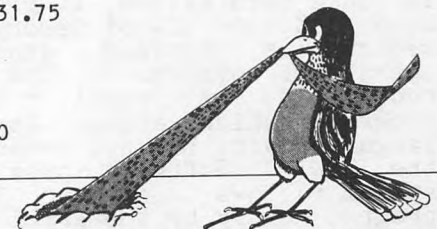
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# MEMORY EXPANSION BEYOND 64K

by Friedrich Schulz

Although Steve Wozniak has stated that Apple Computer, Inc. had no plans to expand the APPLE II memory beyond 64K, he also stated that it was possible to do so by bank selecting between multiple RAMcards. Two third-party companies are using this technique but the systems are radically different from each other in function and price. At the Applefest in Boston, Number Nine Associates displayed prototypes of a system which would allow up to one megabyte of on-board RAM using 64K chips and a separate CPU card which would allow for a clock rate of 3.5 MHTZ. However, the lower 48K is disregarded and all software requires modification to run on the system. While Apple Pascal can take advantage of the extra memory (which is bank selected in an APPLE /// fashion) Apple Fortran cannot, because the protect routine stymies a successful upgrade. The different CPU prevents it from being used with other protected software as a language card substitute. When I inquired about running Fortran on their system they suggested the use of a 6502 Fortran compiler from Programma (which I have not heard anything further about). They said that the 32K ROMcards used by the system can be used for a ROM version on multiple ROMcards in conjunction with the 128K RAMcards and the CPU card. The prices quoted to me at the show were approximately \$900 for each 128K RAMcard and approximately \$500 for the CPU card. The board is not yet commercially available (to the best of my knowledge).

Saturn Systems (formerly G. S. Enterprises) released a 32K RAMcard which contains standard 200 nanosecond 4116 memory and standard series chips. I also found that its price (\$239) actually allows it to compete with the 16K cards and operate as a substitute for Apple Computer's language card. Because of the low cost and increased compatibility with existing software, I chose to purchase this system.

When this system operates as a substitute language card system, it provides the user with 16K or 32K of memory. How much memory is obtained depends on the operating system. The RAMcard is recognized by Pascal, CP/M and all programs which access Apple Computer's language card, but not necessarily all of the 32K. Software provided with the system allows access to 10K of actual program memory by the APPLE by loading DOS into the upper memory bank and either Applesoft or Integer Basic into the lower memory bank. It provides for automatic switching between them so that space normally used by DOS is available for program storage. This is the same feature offered by the Memory Manager program distributed by Andromeda Systems. Memory Manager functions by loading DOS onto the RAMcard and checking slot 4 for an Integer or Applesoft card. For those of you who

do not have an Integer card on the system, the cost makes it the cheapest RAMcard available. If one of these already exists on your system (as in my case) or if you have already purchased a RAMcard, the 32K card can be placed in any slot and it will be recognized by the system. When using a firmware card the system will load DOS into the upper 16K and select between it and the firmware card, leaving the lower 16K free for program or data storage.

The number of 32K RAMcards you can use is limited only by the number of slots you wish to allocate and RAMcards may be mixed in any combination. However, a better power supply is recommended if more than two cards are used in conjunction with other peripherals. Instructions for using machine language for addressing this memory for program storage are documented in the manuals. An update package has been released which allows use from Basic without the need for writing machine language subroutines for LOADING and SAVEing. The procedure allows for the use of overlaying, chaining, and permits the use of the extra RAM as an emulated disk drive as well. Memory for storage of program segments is used by having the processor look away from both DOS and the languages, and look only at the 16K bank which has been selected. It can execute the machine language segments in that portion of memory and continue on to the next segment after saving any data required to the lower 48K. However, each Basic segment must be downloaded into the motherboard RAM so that Basic can be selected for execution of that segment. This process continues until completion of the program. One possible way to get around this constant downloading might be to use a compiler to create binary files of your Basic program segments, which would then be executed without movement. However, compiled files take up more memory than the original program even though they run faster.

The advantage of bank selecting memory instead of accessing a floppy disk, i.e. disk emulation, is mainly that of speed. Bank selection is not limited by disk speed but only by the rate at which the motherboard RAM can accept the data. This would allow execution speed to exceed that of procedures using floppy disks and allow for execution at speeds which would otherwise require a hard disk to attain.

The Saturn Systems' 32K board is always recognized 16K at a time by RAMcard programs. This is because the system does not address all of the memory at once but bank selects between different areas of memory. Regardless of how much memory is actually on the system the processor is only addressing 64K at a time. This is done by letting all the memory on the bus system share address space normally occupied by the motherboard ROMs or by

contd.

Apple's language card (\$D000-\$FFFF). Inclusion of Pascal and a second ROM Basic would normally exceed the 64K addressing capability of the 6502 processor. To get around this problem, the Apple bank selects between the motherboard ROMs and the RAM or firmware card. This allows the processor to look at only 64K of the total 80K of memory in the system. The memory is divided into two 16K banks. One holds a RAM resident language (Integer or Applesoft) and the other holds DOS and system monitor routines. The bank select feature is software controlled with the driver present in all RAM banks in the system. (This prevents it from using all 32K in CP/M because the bank select driver routines (1/2K residing at \$BE00 to \$BFFF) currently occupy space used by the CP/M operating system. The first bank of memory is recognized for the normal 16K but there is no way of addressing the upper 16K under 56K CP/M.)

I have also found that there is software support for the relocated DOS system so that it is an effective way of increasing your system's memory to 80K in Basic, and is the best system available for expanding to 112K and beyond because the software support more than makes up for the lower memory density per board.

The Saturn Systems' RAMcard is completely compatible with Personal Softwares VisiCalc 16-sector version. If one 32K board is present, the VisiCalc memory is increased from 18 to 50K. When two boards are present the VisiCalc memory is increased to 80K. (However, this is not included on the System Master but is a \$100 software option which can be purchased from Saturn Systems.) Sub-Logics A2-3D1 graphics package, enhancement package and editor package are all capable of using the relocated DOS because they use standard DOS and were designed to make full use of all 48K in the system whenever DOS is not present. This is because the same programs are sold for 48K cassette systems as well as for disk-based systems. Large scenes formerly available only when using cassettes are now possible. Most other programs (database managers, word processors, etc.) which are not copy protected (unfortunately there are not many of these!) can take advantage of the relocated DOS as well.

The relocated DOS is also recognized by the ALF 9 and 3 voice cards. Under normal DOS the number of free notes is 5,906, but under relocated DOS 9,300 notes are possible. Future plans include making a commercial database manager compatible with increased memory.

In some cases the need for a Basics diskette is unnecessary. The System Master diskette contains a program for copying the routines from either Integer or Applesoft firmware card to disk. Either Basic can be saved like a program because they are read and saved as a binary program. (This is the reverse of the process used in burning ROMs and EPROMs in which binary programs are read in and permanently stored.) When the routines have been saved they create an

Integer Basic file which loads onto the RAMcard. This makes it possible to use Applesoft and the relocated DOS under DOS 3.2 as well (the System Master is a 3.2 disk which 3.3 users Muffin up). Under DOS 3.2 the Microsoft RAMcard manual states that the only solution possible for 3.2 users is to upgrade to 3.3 and that all access to programs in Applesoft is lost for 3.2 users when their system is added!!

Overall, I consider the Saturn Systems board to be the best RAMcard available. It is a perfect solution for upgrading to 80K and offers a workable system for larger memory sizes at a reasonable cost.

#### POSTSCRIPT

Since this was written another company, Legend Industries Ltd. has entered the larger-than-64K market with a 64K RAMcard. Although they are ahead in hardware, the full advantages of the system cannot be used by existing software. It is compatible with Pascal, CP/M, Pilot, VisiCalc, etc., but for 16K only. Although the board uses the other 48K for program storage, I have not found out how the bank select system works. DOS is relocated on the card and extra motherboard RAM becomes available when the card is added to the system. The software does appear to recognize other RAMcards in the system. This system's master disk is 16-sector, DOS 3.3 only. It is written by Michael McLaren, the author of DOS Plus.

The Legend Industries board obtains its large memory size by using the new 64K chips in a single row. This is both an advantage and a disadvantage. Although they allow for larger memory sizes they are not yet widely distributed enough to be readily available at most Apple Service Centers for replacement. A point in its favor, however, is that in spite of its large memory capacity it is claimed to draw less power than a 16K card. By contrast, the Saturn Systems board draws a lot of power, especially when two of them are in the same system. The price of the Legend Industries board is \$349 and is somewhat cheaper than Apple's language card. This allows it to compete in the language card substitute market. It is well worth considering when choosing a language system.

Ed. Note: The Legend 64KC card conforms to the same Device Select Address conventions used by Apple Computer, Inc. and if installed in slot 0 will act like an Apple language card and can be used with Pascal, etc. While Fred correctly suggests that existing software does not take full advantage of the extra memory, this is a transient problem. Take note, for example, of Dr. Wo's article in this issue. This transiency is also true of the availability of 64K replacement IC's. Rumor has it that Apple will be using them in large quantity soon. Legend Industries has also announced the availability of the 128 KDE Soft Disk (\$750), which is a 128K RAMcard which (obviously) takes up only one slot on the APPLE.

# A VIST WITH AN APPLE USER IN ENGLAND OR BRINGING COALS TO NEWCASTLE by Herb Rand

When I attended a conference in Cambridge, England recently, I prepared for the trip as carefully as a missionary visiting nineteenth century Africa. I transferred about half our club disks to cassettes, using Dana's "SVTP" program, and prepared some handwritten documentation to accompany them...The idea being to overwhelm some backwater British enthusiast with free software! Not a bad idea, surely.

But I wasn't quite prepared for Dave Juett, to whom I was sent by the Cambridge APPLE dealer. After passing on my programs, and handing Dave my list of offerings, he said something to the effect of "Terrific! And maybe you'd like to copy a few of mine!". He handed me a list of his own, about half again as long as our club library printout...some backwater!

Dave and I began to talk, and I was soon overwhelmed by the depth and scope of his knowledge of microcomputers in general and APPLES in particular. Among other things,

1. Dave's occupation is working with medical applications of microprocessor circuitry. Machine code is as natural as breathing to him, as is computer interfacing to transducers and converters of all types. He was asked to write the operating system for the BBC "Acorn" microcomputer, but passed the project along to a friend.

2. Dave has an engineering degree from Cambridge (anybody out there ever work with a British engineer? Their training is a bit more rigorous than ours, I suspect.)

3. Dave has the D.C. Hayes Micromodem, CP/M and the language system, two APPLE disk drives, and a British micro that he can use to convert 8" CP/M disks to APPLE format.

4. I was shown the hand-wired prototype of a board that can connect up to 256 APPLES into an "Ethernet" type communications network. Called "Acornet", after the BBC "Acorn" microcomputer, it allows network interfacing among different brands of microcomputers. Dave, as developer, would be happy to find a U.S. manufacturer.

5. Dave is content to remain in Cambridge (I would be too, if I could manage it!). But with UK prices considerably higher than ours, Dave supports his hobby taking on development work and programming. He is willing to barter programming and technical assistance for hardware and/or blank diskettes, of which he never seems to have enough! Dave says that deals involving circuit board layout, manufacture and parts stuffing here in the U.S. would be of mutual advantage, since UK prices on such services tend to be much higher.

Dave has joined our club, and he can be contacted through

Dave Juett  
Cambridge Microprocessor Systems  
10 Leys Road  
Cambridge, England

And include your phone number! Dave's British friends seem to object to his habit of calling them at 2 AM, while his American friends, five hours earlier, don't!

Following are notes about some of Dave's programs which will be included on a WAP Library utilities disk that will be available in the near future.

ASCII DISASSEMBLER. Disassembles memory into Hex Location/Hex #/Mnemonic/ASCII code in response to "START AT" prompt. Enter a memory location in decimal. Successive locations will be displayed. "Ctrl-S" scrolls, "Reset" escapes.

FAST PRIMES - Calculates prime numbers within a given range.

DATA STATEMENTS FROM RAM - Another "POKE" writer. Generates Data Statements from machine code. a typical program to utilize such data statements might read:

```
10 FOR X = 768 TO 950
20 READ Y : POKE X,Y
30 NEXT X
40 STOP
```

The program is self-prompting.

APPLESOFT HGR GAP - Applesoft memory relocater that will cause a long program to "straddle" the Hires graphic memory area.

1. LOAD the Applesoft program.
2. BRUN APPLESOFT HGR GAP
3. CALL 768
4. The area of memory between \$2000 and \$3FFF will now be clear and the program relocated.

APPLESOFT RELOCATE - Locates Applesoft programs above Hires graphics memory areas.

PROTECT - Renders programs unlistable for security, if desired. LIST this one before running it!

RESET TO MONITOR - For machine language programmers. Sends system into Monitor when "Reset" is hit.

HGR GAP.TXT - Exec file for APPLESOFT HGR GAP.

PI - Calculates Pi to any length up to 32767 digits (but hangs the APPLE for quite a while for that many places!).

CATALOG TO DIR - Run this one, then type "DIR" instead of "CATALOG".

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# CHANGING THE VALUE OF LINEAR POTS TO 150K: A JOYSTICK PROJECT

by John DeMarco

The following note describes a method for lowering the resistance of linear pots so that they can be used on joysticks for the APPLE II.

The resistors actually used here are the Jim-pak JVC-40 and JS-100K purchased from Arlington Electronics, but the Archer Joystick Pot Cat. No. 271-1705 from Radio Shack or a comparable pot from the junk box should do just as well. While the pots on these joysticks were not designed to be taken apart, they can be disassembled and modified easily by a person with limited skill and experience in electronics, if care and patience are used.

This style of linear pot makes use of a carbon ring and a movable contact. The thickness of the carbon has been precisely manufactured to provide the desired resistance. The thicker the carbon the lower the resistance. The resistance needed for the APPLE II joysticks is 150K ohms. We should therefore be able to convert any resistor with a carbon layer producing a resistance of less than 150K ohms, to the desired value simply by removing some of the carbon.

1. Cut or unsolder all wires connected to the pots.
2. Gently bend back the four metal tabs on top of one of the pots and remove the fiberboard piece with the three wire terminals.
3. Attach an ohmmeter to the two outside terminals. The reading should be whatever the pot is rated, 40K for the JVC-40, 100K for JS-100.
4. Using a coarse (ink or typewriter) eraser, start rubbing the middle section of the carbon resistor "ring" while watching the reading on the ohmmeter. Rub evenly and with full strokes so the carbon is removed equally from the entire active section. This is only a small section of the center on most joysticks. Stop when the reading on the ohmmeter reaches 150K.
5. Gently replace the cover and test the value by attaching one lead of the ohmmeter to one of the end terminals and the other to the center terminal. Move the "stick" back and forth while checking the reading. It should go from 0 to 150K.

## MAKE SURE YOU:

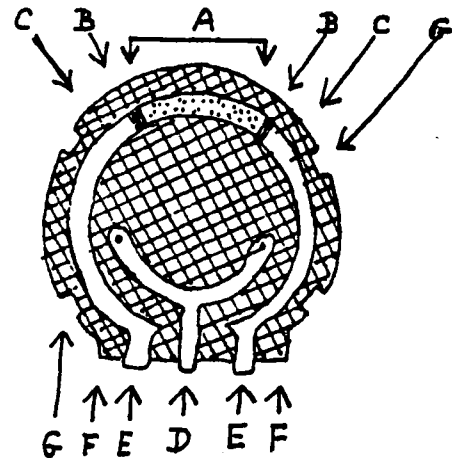
- A. Test your pots before you start. Not all of them go down to 0. Some of the JVC-40's come from the factory reading 10K to 40K. Using these pots will result in a dead section several inches wide on either side of your screen.

- B. Use the eraser evenly over the center (exposed) section only and be GENTLE.
- C. Do not erase the metal coating, as this will place the lower end of the scale beyond the useful range of the pot.
- D. Clean out all the eraser dust before replacing the cover.
- E. Don't bend the "y" shaped wire attached to the center terminal.
- F. Place the terminal end of the cover towards the bottom of the unit when reassembling.
- G. Be GENTLE with the metal prongs holding the cover. They will break if bent too sharply or too often. Hold the cover in place with your finger and test it before sealing it in place.

Enjoy.

## TOP VIEW

- A. Center section of carbon
- B. End of metallic coating
- C. Protective coating
- D. Center terminal
- E. End terminals
- F. Fiber base
- G. Slots for metal tabs



## SIDE VIEW

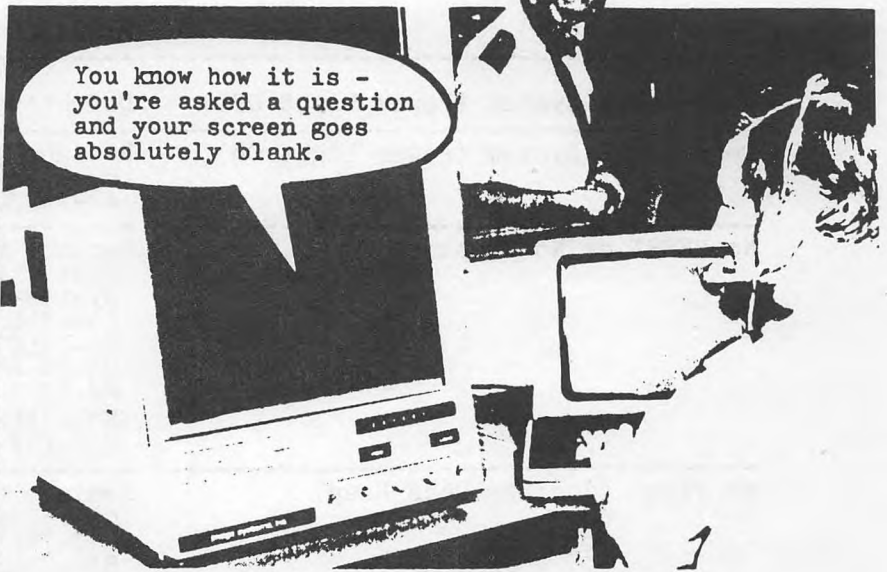
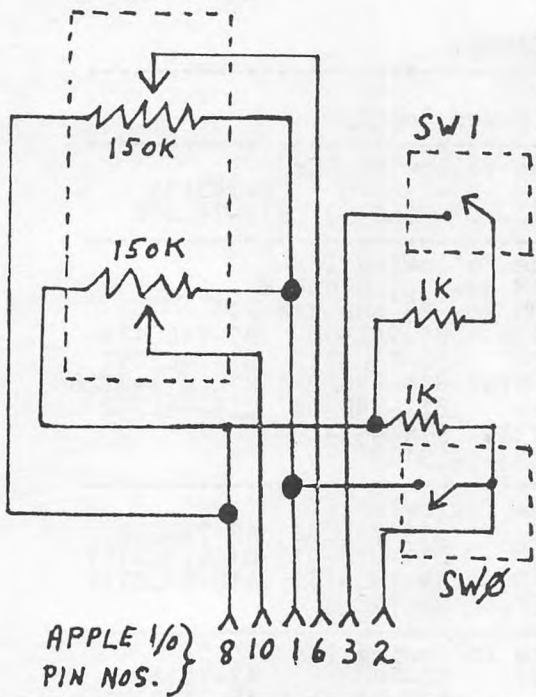
- A. Protective coating
- B. Metallic coating
- C. Carbon (resistor)
- D. Fiber base
- E. Fiber cover



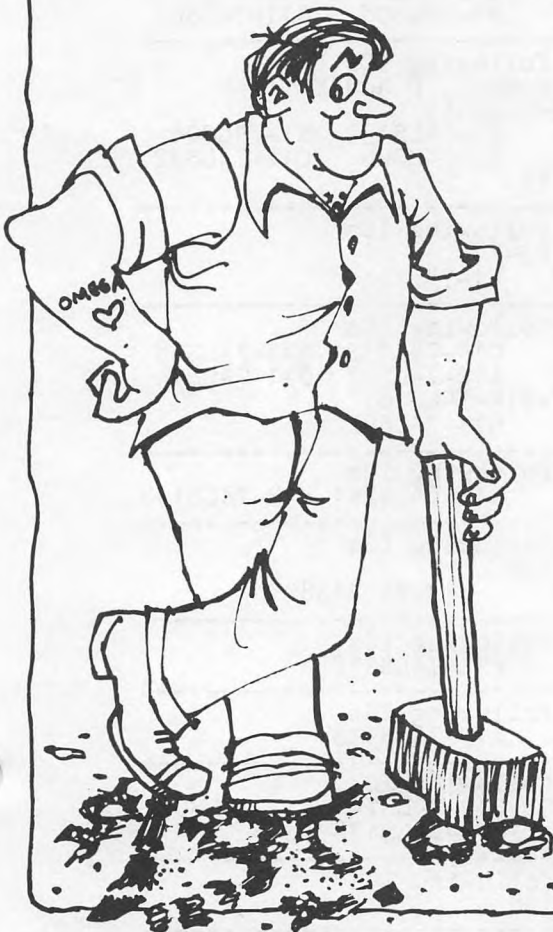
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OR JS-100K



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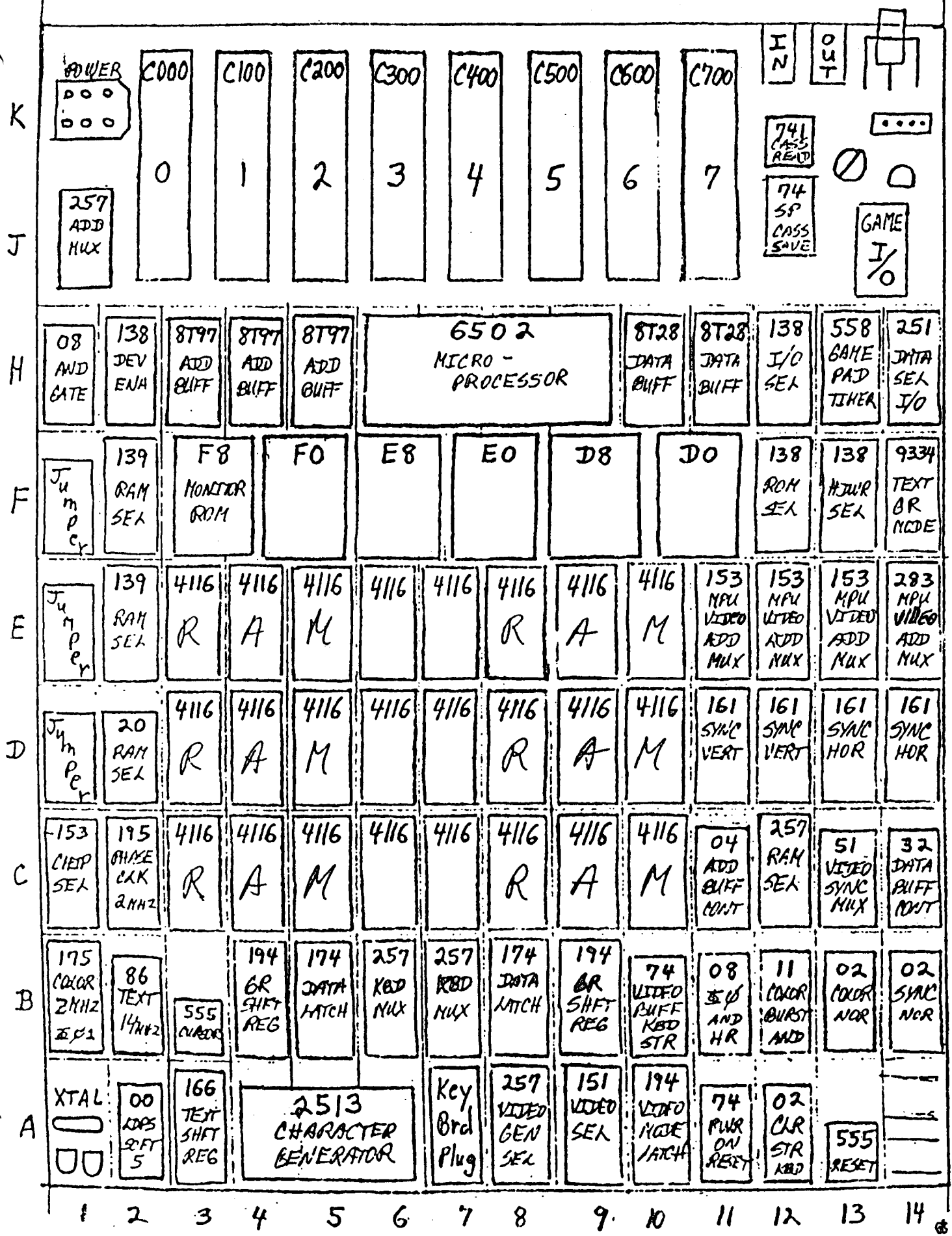
TROUBLESHOOTING GUIDE FOR THE APPLE II AND APPLE II PLUS SYSTEM

(Editor's Note: The following guide and map was left with us at the October meeting, and we don't remember who gave it to us. We thank you, Anonymous, and if you will identify yourself we will publish credit for this in the next issue.)

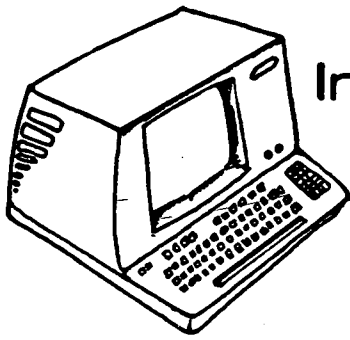
FAILURE:	PROBABLE CAUSE:
Dead APPLE System (Power Light Off)	Defective Power Supply
Dead APPLE System (Power Light On)	Replace the following ICs B2-74S86 B1-74S175 C2-74S195 A2-74LS00 C1-74LS153 B13-74LS02
No RESET or No Response	Replace the following ICs System RAM Rows C, D and E System ROM Row F3 through F11 F12-74LS138 H1-74LS08 B5-74LS174 B8-74LS174 B6-74LS257 B7-74LS257 H3-H4-H5-8T97 H14-74LS251 H10-H11-8T28 H8-6502 B11-74LS08 C14-74LS32 F13-74LS138 F14-9334 E11-E12-E13-74LS153
No Video (Speaker Does Beep)	Replace the following ICs C2-74S195 B13-74LS02 A2-74LS00 C11-74LS04 D11-D12-D13-D14-74LS161 B10-74LS74 A9-74LS151 A10-74LS194 A8-74LS257 B2-74S86
No Text Mode	Replace the following ICs A9-74LS151 B2-74S86 A3-74166 A5-2513 A10-74LS194 A8-74LS257 F14-9334 F13-74LS138
Hires or Lores Problem	Replace the following ICs F14-9334 A9-74LS151 A10-74LS194 A8-74LS257 B4-B9-74LS194 A11-74LS74 B10-74LS74 C12-74LS257 J1-74LS257 H1-74LS08 C11-74LS04
RAM Problems	Replace the following ICs System RAM Rows C, D and E E11-E12-E13-74LS153 E2-74LS139 F2-74LS139 H1-74LS08 D2-74LS20 A2-74LS00 C14-74LS32 B5-B8-74LS174
ROM Problems	Replace the following ICs System ROM F3-F11 F12-74LS138 H1-74LS08
Vertical or Horizontal Sync Problems	Replace the following ICs C13-74LS51 C14-74LS32 B11-74LS08 B14-74LS02 A12-74LS02 C11-74LS04 D11-D12-D13-D14-74LS161 A2-74LS00 B13-74LS02
Game Paddles Problem	Replace the following ICs H13-558 H14-74LS251 F13-74LS138
Cassette Loading Problem	Replace the following ICs K12-741 OP AMP H14-74LS251 F13-74LS138
Cassette Saving Problem	Replace the following ICs K13-74LS74 F13-74LS138
Speaker Problem	Replace the following ICs K13-74LS74 F13-74LS138
Keyboard Problem	Replace the following ICs B6-B7-74LS257 B10-74LS74 A12-74LS02 C11-74LS04 F13-74LS138
Peripheral Card in Slot Won't Work	Replace the following ICs H2-H12-74LS138

contd.

# APPLE II CHIP MAP







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PROGRAM COORDINATOR: Judy Wood

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## THE PROGRAM

The advent of computers, and specifically microcomputers, has revolutionized methods and procedures for information storage and retrieval. This whirlwind of change has created a need in business and industry for specialists in information systems. The Information Systems Specialist Program (ISSP) has been designed to meet this need by providing a solid foundation of information systems design and management.

The program is comprised of a series of courses that will provide the participant with computer-based management skills and techniques including; basic systems analysis, computer programming, implementation of programs, final documentation, and evaluation.

In addition to the technical skills acquired, the participant will examine the relationship of data management systems to telecommunications, as well as to other advances in the profession.

The ISSP Certificate of Achievement is awarded after successful completion of the required courses.

## FORMAT

Certificate candidates attend two evening classes per week for four eight-week courses each fall and spring semester and two eight-week courses in the summer sessions. Courses may be taken on a single-course, space available basis.

### Program Courses:

- Fundamentals of Computer Systems*
- Introduction to Information Systems Development*
- Computer Programming Techniques*
- Comparative Computer Systems*
- Information Systems Design*
- Information Resources Management*
- Advanced Computer Programming*
- Microcomputers*
- Contemporary Issues In Information Systems Management*
- Special Topics in Information Technology*

# CHRISTMAS MESSAGE

by Randy Philipp

JLIST

JRUN

ENTER XMAS MESSAGE>>FROM WASHINGTON APPLE PI.  
MERRY CHRISTMAS!

```
1 HOME
2 INPUT "ENTER XMAS MESSAGE>>";A
  $
5 LET LE = LEN (A$)
7 IF LE < 40 THEN 10
8 LET LE = 40
9 LET A$ = LEFT$ (A$,40)
10 HOME
20 VTAB (3): PRINT TAB( 15)"MER
  RY CHRISTMAS!"
30 VTAB (5)
40 LET X = 20
45 LE = LE + 1
50 FOR I = 1 TO LE STEP 2
60 LET Q$ = LEFT$ (A$,I)
70 PRINT TAB( X)Q$
80 LET X = X - 1
100 NEXT I
105 FOR I = 1 TO 4
110 PRINT TAB( 18)"*****" ]
120 NEXT I
```

```
F
FR0
FROM
FROM WA
FROM WASH
FROM WASHIN
FROM WASHINGT
FROM WASHINGTON
FROM WASHINGTON A
FROM WASHINGTON APP
FROM WASHINGTON APPLE
FROM WASHINGTON APPLE P
FROM WASHINGTON APPLE PI.
*****
*****
*****
*****
```

6

## PLAIN TALK ABOUT "COPY PROTECTION"

A lot has been said and written about copy protection and software piracy since Omega made Locksmith available to Apple II users earlier this year. We have been accused of encouraging illegal copying of copyrighted software. Software publishers have threatened to boycott magazines which carry our advertising, and the pros and cons of Locksmith and copy protection devices have been debated in Apple forums throughout the country. But, we at Omega haven't really told you, the Apple user, our side of the story.

Locksmith was originally developed as an intellectual exercise by an Apple user over a year ago. And we suspect that sufficient information about the Apple DOS and the way information is stored on a disk has been long available to the general public, so that ANYONE who was REALLY interested, and who wished to spend a LOT of time, could have written a program that does many of the things that Locksmith does. Similarly, there is really no "secret" to writing data base programs, adventure programs, or even spread sheet programs. The literature is there if you want to look for it. But it takes a lot of hard work to develop any software package that works in all cases, that is crashproof, that interfaces easily with a non-experienced computer user, and that is well documented. A LOT of hard work.

But even before Locksmith was available to us, we, as Apple users, recognized a definite problem with the software we were buying and using. Much of it worked well. But it was very aggravating to not be able to make a backup copy of certain "copy protected" programs. Most software publishers didn't supply backups of their programs, and those that had any policy required signing oppressive agreements or paying questionably high yearly fees for presumed, but not guaranteed, updates. Among those who did not offer back-up was one who 'sold'

us a new copy (when we returned our crashed disk). Although they advertised the importance of having their program running every day, they made us wait up to 6 weeks to get the replacement. Most vendors just ignored the problem. We, as consumers, were simply taken advantage of. In many cases we relied so much on a particular program, that it became very costly to have to wait weeks or more to replace a blown disk. Software publishers were just not responsive to the users problems caused by "copy protection".

When we first became aware of Locksmith, we investigated the state of the law, and discovered that no one knew whether the owner of a program could copy it for backup. And for quite a while we debated whether we should market Locksmith.

On December 12, 1980, a change was made to the Copyright Act which resolved these questions. It is now the law of the United States that the existence of a copyright notice on a computer program does NOT make it illegal for the legitimate owner of that program to copy it for archival purposes. Backups are now clearly legal. (Of course, when you sell your purchased program, you must destroy the backups you have made). Only after such use clearly became legal did we decide to sell Locksmith.

Now with the new copyright law, which for the first time gave software publishers clear rights that were enforceable in court, but which also gave "backup" rights to software purchasers, and with the demonstration that Locksmith could and would provide back-up for the user, we assumed that software publishers would drop their copy protection schemes and educate the public as to their rights and responsibilities. Even the use of hardware protection that gives copy-ability to the software would be acceptable. Unfortunately, their

response has been to pressure magazine publishers into refusing our advertising, and to invent new copy protection schemes.

Well, the word about Locksmith was impossible to stop. We couldn't advertise, but we have sold a gratifyingly large number of programs. As to new copy protection schemes, the new Locksmith (version 4.0) will adjust to them, and copy virtually anything protected that way. But please. For us, for yourselves, and for the entire industry, use Locksmith only for its intended legal purposes.

The new version is more than just the best copy program available. There are also four additional utilities included. A disk speed program, a degausser, a nibble editor and a media surface analyzer are included. And we stand behind our products. Our customer service department is available (and anxious) to help with problems.

Locksmith 4.0 is available from us, or your local dealer. Visa and Mastercard users call Toll Free 1-800-835-2246. Kansas residents call 1-800-362-2421 or send \$99.95. (Registered owners of prior versions can obtain an update for only \$20. If you haven't received a letter from us, please call.)

**Another Quality Product from  
Omega MicroWare, Inc.**

(formerly Omega Software  
Products, Inc.)  
222 So. Riverside Plaza  
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Phone 312-648-1944



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The following table shows our advertising rates, which will go into effect with our next issue (January 1982). Our newsletter distribution is about 1600 copies, with more than 200 of these going around the country. If you would like to advertise please send camera ready ad copy in black and white (half tones are permitted, but no bleeds) by the 10th of the month to:

Washington Apple Pi  
 Attention: Editor  
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Single Issue (or split series)	\$ 60	\$ 40	\$ 25	\$ 15	\$ 60
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 -----

Washington Apple Pi has a program library, and disks are available for purchase by anyone. The price to members is \$5.00 per disk and \$8.00 to non-members. These disks are chock full of exceptional programs - the utilities are especially useful. The games are some of the best - not just simple and uninteresting ones. You may pick them up at any meeting or have them mailed for \$2.00 per disk additional. (If you order five or more the additional charge will be \$10.00 total.)

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- |           |                    |     |             |                            |
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WAP TUTORIAL REGISTRATION

The second WAP tutorial will be held on two consecutive Saturdays, February 13 and 20, 1982, from 10:00 AM to 1:00 PM at USUHS on Jones Bridge Road (on the campus of the National Naval Medical Center) in Bethesda, MD. Check the ABBS and club phone for any changes in details. An outline of the two sessions is shown below.

February 13, 1982

February 20, 1982

- 9:00 - 11:30 Introduction
  - A. Binary/hex number systems
  - B. Bits, bytes, and nibbles
  - C. RAM, ROM and devices

- 9:00 - 11:30 Applesoft
  - A. Basic programming
  - B. Commands and applications
  - C. Memory usage; HIMEM, LOMEM and variable space

- 11:30 - 1:00 Internals
  - A. Memory Map: What's really in there
  - B. The Monitor: Examine, disassemble
  - C. The mini-assembler, step and trace

- 11:30 - 1:00 DOS
  - A. The Catalog and VTOC
  - B. Reading and writing files
    - 1. sequential
    - 2. random access

WAP is requiring a nominal fee for this tutorial to assure the interest of attendees and to gauge the number of interested participants. A maximum of 40 people will be included, half with their own APPLE and half without.

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"Inside Apple Pi" is published and ready for distribution. It is a bound compendium of articles from the Washington Apple Pi Newsletters of 1979 and 1980. We do not plan to print any more of the original 1979 and 1980 newsletters, so this will be the only form in which they will be available for purchase. You may order by mail using the form below. Copies will also be available for purchase at our regular monthly meeting (at a slightly lower price than that quoted below because no postage necessary.)

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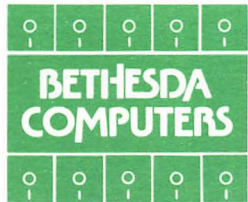
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the apple to  
Adam



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