$ 2.50

Washington Apple Pi

The Journal of Washington Apple Pi, Ltd.

Volume 8 December 1986 Number 12

Highlights

- Hi-Res Screen Calculation Methods (Let to Ed pg 16)
- Button-Down Guide to the Apple
- The WAP Telecommunications System (pgs 44-77)
- ReadySetGo 3.0: A Review
- Review Corner: Microsoft Works

In This Issue

Officers & Staff, Editorial 3
President's Corner ..... Tom Warrick 4
Apple Teas 5
Event Queue, General Information 6
WAP Calendar, SigNews 7
WAP Hotline 8
Classifieds, Commercial Classifieds 9
Annapolis Apple Slice News ..... Claire Johnson 9
On the Trail of the Apple /// ..... David Ottalini 10
Pascal News ..... Robert C. Platt 12
Q & A ..... Bruce F. Field & Robert C. Platt 14
Letter to the Editor ..... Woz 16
Button-Down Guide to the Apple ..... Raymond Hobbs 18
The Musical Apple ..... Raymond Hobbs 20
Music SIG News ..... Raymond Hobbs 21
Family Home Money Manager ..... Brian G. Mason 22
GameSIG News ..... Steven Payne 28
Jet: A Review ..... Thomas Johnston 28
Landing on the Carrier in Jet ..... Thomas Johnston 29
Leather Goddesses of Phobos: A Review..Charles Don Hall 29
Hitchhiker's Guide to Galaxy: A Review ....David L. Porter 30
Amnesia: A Review ..... Steven Payne 32
Amnesia: Another Review ..... Bob Oringel 33
UniDisk 3.5 Status Bug ..... Tom Vier 34
Cumber's Corner ..... James F. Cumber Jr. 35
AppleWorks SIG News ..... Peg Matzen 38
Best of Apple Items from TCS ..... =Alexander- 39
Beginner's Guide to the WAP TCS ..... Eric Rall 44
The New WAP TCS ..... Leon H. Raesly 46
UBBS Quick Card .... Richard Langston & Leon H. Raesly 47
The Cult of Information: Book Review...Joseph A. Hasson 48
WAPAcrostic ..... Professor Apple 49
Mac Q & A ..... Jonathan E. Hardis 50
MacNovice Column ..... Ralph J. Begleiter 52
View from the Hill ..... Rich Norling 54
Taking Care of Macintosh: A Reprint ..... Jon Thelin 56
Softviews ..... David Morganstein 58
Data Desk : A Review...John Rogers & David Morganstein 61
ReadySetGo 3.0: A Review ..... Martin Milrod 63
Review Corner ..... James M. Burger 66
Microsoft Word 3.0 Demo 68
Developer's View ..... Jim Lanford 70
Answers to Last Month's WAPAcrostic 71
Two Mac Tips ..... Bob Marder 71
Frederick Apple Core 72
Macintosh Bits and Bytes ..... Lynn R. Trusal 72
Mac Disketeria Dispatch ..... Martin Milrod 75
Disketeria Order Form 79
Index to Advertisers ..... Back Cover
Index to Authors ..... Back Cover

Family Computer Center

6691 Backlick Road Springfield VA (703) 866-9122
11917L Fair Oaks Mall Fairfax VA (703) 385-2758

An Authorized Apple Dealer

Microsoft Works

It brings a powerful new idea to computers. Common Sense.

Microsoft Works is the complete business package for your Macintosh. Works features several powerful data-crunching applications including a spreadsheet for quick numerical analysis; a database for those instances when you want to see developing trends and emerging markets; a word processor for jotting down quick memos to fellow workers or even a multi-page report; and an easy-to-use communication package that makes tying into information services even easier.

And there's even another reason why **Microsoft Works** is the software package for your Macintosh. It's all integrated. Which means that you can move from any part of the program to another part. Play with some numbers on the spreadsheet, then transfer them instantly to the word processor. Or get some facts from any information service using the built-in communication software and move them immediately to the database.

When was the last time a best seller made you money. Well, there's always a first. Microsoft Works.

Retail List Price.....$295
WAP Special.....$235

Mouse Pads.....$4.95
Imagewriter I/II Ribbons.....$4.99
by Checkmate

Get these special prices at our Springfield location only. Must present Pi membership card for special price.

Multi-Megabyte Storage

for the Macintosh Plus & Apple //GS

Introduce your Macintosh or Apple //GS to the fastest mass storage devices available...hard disk drives featuring SCSI interfaces. These hard disk drives attach to the appropriate port on your Macintosh Plus or //GS (except for the Hyperdrive 20's & 2000's which work with the Macintosh only.)

Hyperdrive FX-20	**$1049**
Dataframe 20 HD	**$ 949**
Hyperdrive 2000	**$2490**
Macbottom SCSI	**$ 990**
Hyperdrive 20	**$1390**
Apple HD 20SC	**In Stock**

WordPerfect for the Apple //c & the Apple //e.....

Now that you have an Apple, fill it up with premium software like WordPerfect. New version now includes a 50,000 word spell checker, mail-merge, macros, and footnotes.

Suggested Retail Price	$179.00
WAP Special	$139.00

Family Computer Center offers a 10% discount off our *regular* price to all Pi members on software and supplies. Pi members must present card to qualify for discount. 1% additional charge for credit card or personal checks.

Clinton Computer

Your #1 Apple Dealer!

277 S. Washington St, Alexandria, VA (703)838-9700 ✦ 9636 Ft. Meade Rd, Laurel, MD (301)953-1110 or (301)792-0600 ✦ 6443 Old Alex. Ferry Rd, Clinton, MD (301)856-2500

Clinton Computer, *p.s.*

Clinton Computer, *p.s.* is the largest and most professional microcomputer product service center in the Metro area. The "*p.s.*" symbolizes that you get something extra -- *Professional Service, Personal Service, Prompt Service, Post-Sale Service, Parts and Supplies* -- the type of support that our customers have come to expect, the type of support that has won us rave reviews from local consumer rating services!

Located at 6457 Old Alex. Ferry Road in Clinton, with satellite shops at our Alexandria and Laurel store, *p.s.*'s primary purpose is to provide factory-authorized service for the main lines of products we sell. We stock the parts to service your equipment quickly. "While-you-wait" service can be arranged if you call for an appointment.

If you need service at your site, we can send out the Mobile Service Van. The only vehicle of its type in the Metro area, our van has its own fully-equipped workbench and power supply.

Save $ -- AppleCare *Baker's Dozen* Sale

An ***AppleCare*** service contract on your Apple computer equipment is a smart way to avoid unexpected expense, at an annual cost less than that of one major repair. In addition, Clinton Computer provides **FREE PREVENTIVE MAINTENANCE** check-ups for all of our service contract customers.

And, as an *Apple Pi* member, you receive a 25% discount off the list price of ***AppleCare.*** If you purchase one year of AppleCare for your system before December 31, 1986, Clinton Computer will give you an extra month of coverage absolutely **free**!

Call Karen Smith at (301)856-2500.

Training Available

Clinton Computer is offering a comprehensive training program on both Apple™ and IBM™ microcomputers. Classes include New Owners' Workshops. Introduction to AppleWorks, Word-Perfect, and many of the most popular software topics for Apple and IBM microcomputers.

Clinton Computer's commitment to the "hands-on" approach is evident in all of the training services available. We offer public computer courses and private tutoring for adults and children, as well as executive seminars, field training, and a custom courseware service for organizations and agencies.

For registration information, contact Paula Majerowicz at our Laurel location (301)953-1110 in the Washington area or (301)792-0600 in the Baltimore area.

Metro Area Schools Choose Clinton Computer

Over the past three years, Clinton Computer has been selected by local school systems to install an amazing 10,000 Apple computer systems! We are the designated dealer for five Maryland counties and four Virginia jurisdictions, as well as a large number of private and parochial schools.

BBS at Clinton Computer

Clinton Computer now has a Bulletin Board System (BBS). Through it you can get --

- The Latest Info on Hardware and Software
- Public Domain Software (Apple // and Macintosh)
- Upcoming Special Sales and Events

We are on-line 24 hours a day at 300/1200 Baud.

(301)856-2365

DISCOUNT POLICY FOR WASHINGTON APPLE PI MEMBERS

CLINTON COMPUTER offers Washington Apple Pi members a 25% DISCOUNT OFF THE LIST PRICE on all non-allocated Apple brand peripherals and software and on AppleCare (no CPU's). For upgrades, the 25% discount applies only to the parts; the normal labor rate will be charged. Discount is available to persons who have been Pi members for at least 3 months. Discount applies to cash and certified check purchases and cannot be applied retroactively. Add 1% for credit card and personal check purchases. If the product is not in stock, we can take your prepaid order. Pi members need to present their cards up-front. No phone or mail orders, please. Discount cannot be used in combination with other promotions. Products on allocation from Apple are excluded from this offer. Clinton Computer reserves the right to change this policy at any time.

This ad was produced on a Macintosh and LaserWriter, using MacWrite and Aldus PageMaker. Apple, the Apple logo, and LaserWriter are registered trademarks of Apple Computer, Inc. Macintosh is a trademark of McIntosh Laboratory, Inc. and is being used with express permission of its owner.

9 AM To 9 PM
7 Days A Week
By Appointment Only
Rush Jobs And
Overnight Service
Available.

MacTography

Laser Printing/Desktop Publishing
Service For The MacIntosh
...What are the advantages...

MasterCard VISA

Call For
Appointment
And Directions
(301) 424-3942
702 Twinbrook Pkwy
Rockville, MD

Desk Top Publishing

- Laser Printing Service
- Optical Scanning-300 DPI
- Custom Laser Fonts
- Work Station Rental $10.00 Per Hour/Includes Software
- IBM File To Macintosh
- Photo Copier Service
- Self Service GBC Binding

Support

- Consulting/Training
- Laser Fonts Sales, Adobe Image Club. Century, Casady
- Laser Screen Fonts
- The LaserSampler II Sample of all Laser Fonts
- Customized Laser System Disks For Proper Screen Formating

CADD for The Mac

- EZ-Draft 2D $2495.00
- M.G.M. Station 2D $799.00
- VMI 13" & 19" Color Monitors Works with EZ-Draft & M.C.A.D
- Try our demo packages before you buy @ $10.00 per hour.
- Training on 2D and 3D packages
- Pen Plotting on the DMP 52-MP.

MacTography Now Prints From Over 200 Different Laser Fonts On The LaserWriter Plus

Other Laser fonts

Downloadable fonts

Century–
Software
The Image Club
Casady Co.

LaserWriter Plus

ROM based Laser fonts
available for Use

- Times Roman • Zaph Chancery
- Narrow Helvetica • Helvetica
- Zapf Dingbats • Palatino Roman
- New Century Schoolbook
- ITC Bookman Light
- Avant Garde Gothic Book
- Courier • Symbol

Adobe fonts

DownLoadable
Laser fonts

All Adobe
Fonts
Printed

NEW! ***Design Service***

• Graphic Artist • Fine Arts Artist

LASER PLUS

MacTography Now Prints On Hammermills New Laser Plus Printing paper. This paper was designed to produce camera ready copy from the LaserWriter.

NEW! **Abaton Scanner**

The Scan 300 digitizes drawings, graphics and photographs into the Macintosh. Its 300 DPI resolution matches the LaserWriter. Saves files in Pagemaker, MacPaint and PostScript formats.

• 300 DPI • Fast-Typically under two minutes
• Selfservice operation or by Our Operator

IBM files Printed

...Avaliable Soon...
Abaton Drive 5.25

To Help our IBM Friends enjoy the same pleasures of the Mac that we have, we have taken the first steps to make it a little less painful to transfer files between the two systems.

Laser Sampler II

...Over 350 Pages...
$23.95

The LaserSampler II wil be ready in late October. It shows all the fonts from Adobe, Century Software, The Image Club, Allotype and Casady Co. A very Handy Reference Guide.

Custom Fonts

If we do not have the Laser Font that you need we can now produce fonts with the Fontographer from Altsys. Also avaliable are custom logos and special symbols. Any often used symbol or special characters can be designed.

OFFICERS & STAFF

Board of Directors

President	- Tom Warrick	(301) 656-6649
Vice Pres-Apple	- Bruce Field	(301) 340-7038
Vice Pres-Mac	- Jay Heller	(301) 977-2599
Treasurer	- Edward Myerson	(703) 759-5479
Secretary	- Peter Combes	(301) 251-6369
Directors	- Theron Fuller	(703) 370-5563
	- Martin Milrod	(301) 464-2154
	- Leon Raesly	(301) 439-1799
	- Jay Thal	(202) 244-3649
	- Mike Ungerman	(703) 455-3441
	- Bernie Urban	(301) 229-3458
	- Rich Wasserstrom	
Past President	- David Morganstein	(301) 972-4263
Editor	- Bernie Urban	(301) 229-3458
Head Software Libr.	- Jim Little	(301) 762-3215
Office Managers	- Gena & Bernie Urban	(301) 654-8060
Journal Staff:		
Associate Editor	- Gena Urban	(301) 229-3458
Store Distrbtn.	- Raymond Hobbs	(301) 490-7484
Columnists:		
Apple ///	- Charlene Ryan	(703) 836-0463
Developer's View	- Jim Lanford	(202) 723-0050
DisabledSIG	- Jay Thal	(202) 244-3649
EDSIG	- Peter Combes	(301) 251-6369
GAMESIG	- Steven Payne	(202) 832-6622
Mac Bits & Bytes	- Lynn R. Trusal	(301) 845-2651
MacNovice	- Ralph Begleiter	(301) 340-3296
Mac Q & A	- Jonathan Hardis	(301) 330-1422
Musical Apple	- Raymond Hobbs	(301) 490-7484
Pascal (PIG)	- Bob Platt	(703) 486-1466
Q & A	- Bruce Field	(301) 340-7038
Softviews	- David Morganstein	(301) 972-4263
Telecomm	- Dave Harvey	(703) 527-2704
Review Coord.	- Jim Burger (day)	(202) 337-7900
Review Coord.	- Raymond Hobbs	(301) 490-7484
Review Coord.	- David Morganstein	(301) 972-4263
TCS - Apple	- Alexander Barnes	(301) 474-5310
TCS - Mac	-	
View from Durham	- Chris Klugewicz	(301) 262-1816
Disketeria Staff:	- Jim Little	(301) 762-3215
	- John Malcolm, Joy Aso, Ed Lang,	
	- Pat Foreman, Gordon Stubbs,	
	- Nancy Little, Richard Langston III	
Mac Disk Copiers	- Dave Weikert	(301) 926-4461
	- John DeMarco, Gary Elliott (contd.)	
Mac Disk contd.	- Andy Gallant, William Jones	
	- Ralph Mullendore, Shirley Weaver	
DOS 3.3 Lib.	- Jim Little	(301) 762-3215
Macintosh Lib.	- Larry Halff	(703) 237-0984
	- Martin Milrod	(301) 464-2154
Pascal Lib.	- Mike Hartman	(301) 445-1583
ProDOS Lib.	- J.T. (Tom) DeMay Jr.	(301) 779-4632
Group Purchases	- Rich Wasserstrom	
Head Reading Lib.	- Walt Francis	(202) 966-5742
Apple Tea Coord.	- Amy Billingsley	(301) 622-2203
Arrangements	- Leon Moore	(301) 946-2642
Dealer Rel. Comm.	- John Alden	(202) 686-1656
	- Jim Burger (day)	(202) 337-7900
	- Rich Wasserstrom	
General Counsel	- Jim Burger (day)	(202) 337-7900
Membership	- Dana Schwartz	(301) 654-8060
Program	- John Alden	(202) 686-1656
Publicity Chairman	- Hunter Alexander	(703) 820-8304
Public Relations	- Charles Redmond	(202) 363-3184
SIGs&Slices Coord.	- Jay Thal	(202) 244-3649
Telecom Sys. Opr.	- Leon Raesly	(301) 439-1799
Tutorials	- Bob Platt	(703) 486-1466
Volunteer Coord.	- David Morganstein	(301) 972-4263
SIG Chairmen:		
Annapolis Slice	- Steve Toth	(301) 757-3280
AppleWorks	- Ken DeVito	(703) 960-0787
Apple ///	- David Ottalini &	(301) 681-5792
	- Bill Rosenmund	(703) 941-5050
CP/M	- Charles Franklin	(301) 997-9138
DisabledSIG	- Jay Thal	(202) 244-3649
dPub SIG	- Tom Piwowar	(202 223-6813
EDSIG	- Peter Combes	(301) 251-6369
Federal SIG	- Gordon Stubbs	(703) 750-0224
Forth SIG	- Kevin Nealon	(703) 280-1136
Frederick Slice	- Scott Galbraith	(301) 865-3035
Game SI	- Thomas Johnston	(703) 243-2795
LawSIG	- John Weld (day)	(202) 463-0662
Mac Prog. Grp.	- Bob Shaffer	(703) 671-1194
	- Charles Weger	(703) 836-5150
Music SIG	- Raymond Hobbs	(301) 490-7484
NEWSIG	- Bernie Benson	(301) 951-5294
Pascal (PIG)	- Mike Hartman	(301) 445-1583
PI-SIG	- Bob Golden	(301) 593-6165
StockSIG	- Ron Grognet	(301) 296-5444
	- Ben Fogle	(301) 469-5822
Telecomm. SIG	-	

☛ Use the Hotline for Technical Questions

Washington Apple Pi, Ltd.
8227 Woodmont Avenue, Suite 201
Bethesda, MD 20814
Business Office (301) 654-8060
Telecommunications System (formerly BBS) (301) 986-8085

Copyright 1986, Washington Apple Pi, Ltd.

EDITORIAL

Where are we heading? Joseph Hasson, in his book review of The Cult of Information - The Folklore of Computers and the True Art of Thinking by Theodore Roszak, points out the perils of "this headlong rush to computers" that we are all engaged in. You can read Hasson's thoughtful review which appears on page 48 of this issue.

I am reminded of a review (WAP Vol. 1 No. 4, May 1979) which I had done of an article, "The Microelectronic Revolution" by Jon Roland, that appeared in the April 1979 issue of the Futurist. In his article, Roland stated, "Technology has dealt us another surprise, one that will soon radically transform the ways we live and do business and the skills we need ... During the next few years this microelectronic intelligence is likely to be in almost every product large enough to contain it ... Many of these products will become linked together by a world-wide communications system into a vast network that will dominate our lives and fundamentally change the world in which we live." It would be an interesting exercise to review his predictions to determine which have already come true. Space does not allow further elaboration here.

I, too, share(d) concern about the possible misuse of this technology and invite you to consider forming a special interest group for discussing the positive and negative consequences of our collective actions, and to determine what role, if any, the WAP should have in all of this.

PRESIDENT'S CORNER
by Tom Warrick

Once again, the IIgs was the star of the show at a WAP monthly meeting. AST Research, which was to be our featured product at our October Apple II meeting, canceled out at the last minute, but we were able to get ***Chuck Perelli*** of Clinton Computer to bring one of his IIgs's along with the IIgs version of Music Construction Set, which people wanted to see more of (or is it "hear more of"?) after the brief demonstration of it at the premiere showing of the IIgs in September. Special thanks should go to ***Lee Raesly*** and ***Mike Ungerman,*** who put together the October IIgs show at the last minute (and I do mean last minute!).

I know a number of you who didn't make it to the meeting were disappointed that you missed an opportunity to see the IIgs. Unfortunately, program cancellations and changes are an unavoidable fact of life for a computer user group. You may want to check the WAP ***answering machine*** (654-8060 after office hours) or the ***Telecom- munications System*** (986-8085, 300, 1200 or 2400 bps, 24 hours a day) shortly before each meeting to see if the program has changed since it was announced in the Journal.

And speaking of changes in the program schedule, you probably know that for the past year WAP has generally been following a ***meeting schedule*** that calls for ***alternating*** Apple II and Macintosh programs in the USUHS Auditorium, with question and answer sessions alternating for whichever group was not meeting in the Auditorium at the time. I know from informal surveys that most people who are interested in only one program—regardless of which one it is—prefer that program to follow immediately after the business meeting with the corresponding question and answer period after the program.

Accordingly, since the Apple II program has gone first for the past year, equity suggests that we should ***switch it for 1987*** so that the Macintosh program comes first. For joint programs like the telecommunications extravaganza planned for January, as well as for the two garage sales WAP sponsors each year, the question of which program goes first is not an issue, so we're really talking about no more than nine programs a year.

We've talked about (and tried) some other suggestions, such as having the business meeting between the two programs, but with no success. One possibility that was made at the October meeting (***Twila,*** I forgot your last name—sorry!) was to have the business meeting in the USUHS Cafeteria. This idea has a number of advantages, and so we may do it. In any event, ***watch the Journal*** for the next couple of months for details.

Last month I promised a more detailed report on the survey statistics gathered by Tom DeMay and others from the ***back-of-the-ballot survey*** taken in May. Here are some of the interesting findings about us:

It is ***no surprise*** that people tend to have at home the ***same type*** of computer they have at work. For example, 54% of those who use Apple II+'s at work have an Apple II+ at home. For Apple //e owners the figure is 51%, and for Apple IIc owners, 44%. For Apple II owners, though, only one-fourth have Apple II's at home. The general rule applies to those of use who own or use MS-DOS machines as well.

The same rule holds even ***more strongly for the Mac,*** with more than 67% of those who use them at work having one at home. And although only 19% of those who use a Lisa or Mac XL at work have one at home, almost 58% have a Macintosh at home.

Apple /// owners, interestingly, tend to be a special case. First, people who use Apple ///'s tend more than most to have a similar computer at both home and work: 40% of the 20 members responding who use ///'s at work have one at home, and 36% of those who have a /// at home have a /// at work. In contrast, no one who owns an Apple /// at home has or uses an Apple II or IIe or a Lisa/Mac XL. People who use Apple ///'s at home seem to be a ***contented*** bunch, as they are less likely than anyone else to have a different type of computer anywhere else.

Given the ***MS-DOS*** nature of the ***Federal Government*** and the businesses that work with it, the large number of PC-family owners and users who are members of Washington Apple Pi is not surprising. One thing is interesting, though: Those who own or use an ***MS-DOS*** machine at work are more likely to use a ***Macintosh*** at home (36.8% using a weighted average of PC, PC XT and PC AT at-work users) than any single model of the Apple II series, of which the //e is the individual leader (31.5%). For those who use an ***MS-DOS*** machine at ***home,*** however, more people have ***II+'s*** (36.9%) and ***//e's*** (29.5%) than ***Macs*** (27.9%) at home. There are a number of ways of interpreting these data, but my favorite is this: People who have to use MS-DOS machines at work prefer the ease-of-use of a Mac in their leisure hours. On the other hand, anyone who would use an MS-DOS machine at home, for heaven's sake, must be "into" operating systems, drive numbers, text-based command processing or color. For those people, the II+ or //e is a comfortable machine. I think it also shows that someone who could build a PC-compatible disk drive that would allow the Mac to read PC disks would have quite a market open to them. I understand somebody is doing this—I hope the price is right!

Of those WAP members who use ***minicomputers*** or ***mainframes*** at work, far more have Macs (38.8%) than any

contd.

single model of Apple II (30.4% for the //e). The same general rule holds for laptops, 46.4% for the Mac vs. 26.1% for the II+.

I draw these rules from these and the other data I have seen from Tom's work:

1. If you own or use an ***Apple II***-series computer, you are more likely to own or use another type of ***Apple II*** rather than some other kind of computer such as a ***Macintosh*** or a ***PC*** or compatible.

2. If you own or use a ***Mac*** family computer (i.e., the ***Mac*** and the ***Lisa/Mac XL),*** you are more likely to own or use another type of ***Mac*** rather than an ***Apple II.***

3. If you own or use some ***other*** type of computer, you are more likely to own or use a ***Mac*** rather than an ***Apple II.***

4. If you use an ***Apple ///*** at work, you probably use another ***Apple-brand*** computer (including the ***Macintosh***) at home, rather than a ***PC*** or compatible.

5. If you own an ***Apple ///*** at home, you're happy as a pig in mud.

In another area, the following people are most likely to own a modem:

Apple /// owners at work (95.0% own a modem)
Laptop owners at home (94.9%)
PC AT or comp. at home (92.3%)

Apple /// owners I can't explain. Laptops often have modems built in, so that's no surprise. And I suppose if you can afford a PC AT at home, the price of a modem is petty cash.

At the other end, these people are least likely to own a modem:

Apple II owners at home (100.0% don't own a modem)
Apple IIc owners at home (48.6%)
Apple IIe owners at home (35.8%)

Mac owners at work came in 9th out of 28 categories in terms of the proportion of those who own a modem. Mac owners at work "fared" much worse—21st out of 28.

The printing presses at ***Apple's User Group Support*** program must be working overtime. We continually receive boxes of new materials from them each month. A great deal of it is quite interesting, and well worth looking at if you're in the Pi office sometime. For example, we have received a copy of ***"Apple Developer Express,"*** a hefty notebook containing brief flyers from third-party hardware and software vendors. Developers were invited to submit these materials, so there is no critical analysis. But the materials contain more specific product information than you may find collected in one place anywhere else. Also, perhaps more importantly, this notebook gives equal coverage to some of the more obscure and unique products that cannot afford the advertising rates of A+ or MacWorld. If you are looking for an obscure vertical market package, you may want to take a look at this notebook.

Finally, I want to take an opportunity to thank ***Tom Vier*** for his participation as WAP's coordinator on the Apple II forum on CompuServe. Tom has contributed greatly to the forum with his reservoir of technical knowledge and insights. His skills are rare these days, and I am sure he will be missed on the forum. We hope Tom will continue to give us the benefit of his advice on Corvus hard disks, Unidisks and the like, and we may perhaps see him here in the Journal from time to time. (Ed. Note: See Tom's article elsewhere in this issue.)

APPLE TEAS

HELLO OUT THERE! How about starting the New Year off right by attending or hosting a Washington Apple Pi Tea?

What is an Apple Tea? It's a User's meeting, tutorial session, party, all in one. It's an opportunity for Apple users to get together in small groups (from 3 to 12) to discuss a specific area of Apple computing, expand each other's knowledge, ask questions and share tips.

How can you have an Apple Tea?

1. Pick a topic - one that interests you and one that you think might interest others.

2. If you like, obtain a resource person, someone who is knowledgeable in that area. The WAP Hotline volunteers have been very good about agreeing to come as resource persons.

3. Pick a date a month or two in advance to allow for Journal publication and distribution. Pick a suitable time.

4. Plan to host your Tea with refreshments at your home or another suitable location. (There have been successful Teas hosted in the Training Room of Clinton Computer, and the Computer Lab of the Elizabeth Seton High School.)

5. That's all there is to it. Call Amy Billingsley at 622-2203, or George Sall at 768-0212 with topic, resource person, date and time, place and directions. Start working on your Apple Tea today. It is a great way to share information and learn more about one of your own areas of interest. The following tea is scheduled for January:

Washington Apple Pi
Silver Spring Apple Tea
Sunday January 11th, 2 - 4 PM
Learning Through Games
With the Apple][+ and the Mac
Construction Sets, Puzzle Solving, Fantasy
Character Develop., Adventure Kits, and more
at the home of Ray Hakim
812 Hyde Court, Silver Spring, MD 20902
Refreshments. Bring computer if convenient.

RSVP 649-1891. Directions: Take Beltway to Georgia Ave., North, past Wheaton Plaza to Arcola. Turn right. Proceed 2 traffic lights to Lamberton. Turn Left. Go 2 blocks to North Belgrade. Turn right. Go 1 block to Hyde Road, which is on the left. Make a right turn at Hyde Court. 812 is at the back of the court.

EVENT QUEUE

Washington Apple Pi meets on the 4th Saturday (usually) of each month, both Apple and Mac, at the Uniformed Services University of the Health Sciences (USUHS), on the campus of the Bethesda Naval Medical Center, 4301 Jones Bridge Road, Bethesda, MD. Disketeria transactions, Journal pickup, memberships, etc. are from 8:45-9:30 AM and during the Q& A sessions (times for these vary according to the main meeting topic). The business meeting is from 9:00-9:30.

Please note that the ***December meeting is on the third Saturday.***

A sign interpreter and reserved seating can be provided for the hearing impaired, but we need 5 business days notice. Call the office.

Following are dates and topics for upcoming months:

December	20	- Garage Sale (3rd Saturday) Demo of Word 3.0 for the Mac
January	24	- Telecommunications

The Executive Board of Washington Apple Pi meets on the second Wednesday of each month at 7:30 PM at the office. Sometimes an alternate date is selected. Call the office for any changes.

General Information

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

Membership dues for Washington Apple Pi are $32.00 for the first year and $25.00 per year thereafter, beginning in the month joined. If you would like to join, please call the club office or write to the office address. A membership application will be mailed to you. Subscriptions to the Washington Apple Pi Journal are not available. The Journal is distributed as a benefit of membership.

Mailing Notice: Change of address must be postmarked at least 30 days prior to effective date of move. Journal issues missed due to non-receipt of change of address may be acquired via mail for $2.50 per issue.

Current office hours are:

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

Please note that the office is closed on all U.S. Government holidays.

Members are asked to place phone calls to the office during the day hours Monday - Friday whenever possible, since only one person staffs the office during evening hours and on Saturday.

Please Note!

The meeting date for December is the 20th, 3rd Saturday - Garage Sale.

COMPUTER DEN LTD.

Don't believe the rumors! we are still in business and offer 30% and more off on all software, peripherals and accessories for all Apple computers, including MAC. Take advantage of our clearance prices as you shop for the Holidays. We attempt to beat all locally advertised prices!

C. Itoh color printer 180 cps.....$450.00

Panasonic 1091I w/ 30cps NLQ new!..$295.00

1080I new in stock.....$245.00

Citizen Premiere 35 Daisywheel.....$489.00

Epson Printers.....$CALL

PAPER - MICROPERF - SPECIAL!.....$22.50

Ribbons.....$CALL

Cool + Time Surge, Fan and Clock.....$75.00

Olympia or Samsung 12' green or amber monitor.....$85.00

LASER 128 computer w/ cable.....$415.00

External disk drive $135.00

Expansion box $68.00

Koala Pad touch tablet.....$80.00

Grappler +.....$80.00

Serial Grappler, Grappler C.....$83.50

Thunderclock.....$100.00

Record Master (40 or 80 column).....$40.00

Copy II+ or Copy II MAC.....$28.00

Complete line of Kensington MACcessories including System Saver Call for prices

JOYSTICKS: CH MACH III $37.50, Kraft $35.00

COMPUTER DEN LTD.

11716 Kemp Mill Road

Silver Spring, MD 20902

301-649-6868

Call to order Sunday-Thursday 10 A.M.-9P.M.

UPS shipping available, Quantity Discounts

WAP

* December 1986 *

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
	1Mac Beg. Tutorial #2 7-10PM-Off. PI-SIG 7:30 Office	2	3 Mac Programmers 7:30 PM Office	4 GameSIG 7:30PM-Off. dPub SIG 7:30 Pepco Bldg.	5 Deadline for Journal Articles	6 Pascal Tutorial #3 9AM-12 Noon Office
7	8 Telecom SIG 7:30 PM Office	9	10 Executive Board 7:30 PM Office	11StockSIG 8PM Office; FAC Slice 7:30 MRIID Ft. Detrick	12	13 Pascal Tutorial #4 9AM-12Noon Office
14	15	16	17 Apple /// 7:30 PM Ch.of Comm. DC	18 Pascal SIG 7:30 PM Office EdSIG 7:30 Office	19	20 WAP Meeting Garage Sale 9AM-USUHS
21	22	23	24 Christmas Eve Office Closed	25 Christmas Day Office Closed	26	27
28	29	30	31			

WA.

* January 1987 *

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
				1 New Year's Day Office Closed	2	3
4 Deadline for Journal Articles is January 5->	5 PI-SIG 7:30 PM Office	6 Apple // Beginning Tutorial #1 7:30-9:00PM Office	7Mac Progrms.-7:30 Office; dPub SIG 7:30 Pepco	8StockSIG 8PM Office; FAC Slice 7:30 MRIID Ft. Detrick	9	10 WordStar Tutrial 9AM-12 Noon Office
11	12 Telecom SIG 7:30 PM Office	13 Apple// Beginning Tutorial #2 7:30-9PM Office	14 Executive Board 7:30 PM Office	15 Pascal SIG 7:30 PM Office	16	17
18	19 Mac Begin. Tutorial #1 7-10 PM Office	20 Apple// Beginning Tutorial #3 7:30-9:00PM Office	21	22 EDSIG 7:30 PM Office	23	24 WAP Meeting 9:00 AM USUHS
25	26 Mac Begin. Tutorial #2 7-10 PM Office	27	28 Apple /// 7:30 PM Ch. of Com. DC	29	30	31

SIGNEWS

Apple /// SIG usually meets on the 4th Wednesday of the month at 7:30 PM in the Chamber of Commerce Bldg,, 1615 H Street NW, DC. However, due to the holidays the December meeting will be on the 3rd Wednesday, December 17.

AppleWorks SIG offers two meeting options: 8:00 AM before the regular meeting and 12 Noon after the Apple II Q&A session. Attend either or both.

DisabledSIG - For information call Jay Thal at 344-3649.

dPub SIG (Desktop Publishing) will meet on Thursday, December 4, at 7:30 PM in the PEPCO auditorium at 1900 Penn. Ave., NW. Note that the date for December has changed.

EdSIG (the education special interest group) will meet on December 18 at the office, 7:30 PM.

Fed(eral)SIG - Call Gordon Stubbs (703) 750-0224 for meeting details.

GameSIG meets on the first Thursday of each month at the office, 7:30 PM. The next meeting will be on December 4. See their news elsewhere in this issue.

MusicSIG meets on the 2nd Saturday of each month at 1:30 PM. See their news elsewhere in this issue.

PIG, the Pascal Interest Group, meets on the third Thursday of each month at the office, 8:00 PM. New and prospective users are welcome. The next meeting will be on December 18.

PI-SIG meets on the first Monday night of each month at the office, 7:30 PM. Call Bob Golden at 593-6165 for details.

SigMac Programmers meet on the 1st Wednesday of each month at 7:30 PM at the office. The next meeting will be on December 3.

StockSIG meetings are on the second Thursday of each month at the office, 8:00 PM.

Telecom SIG meets on the second Monday night of each month at the office, 7:30 PM.

WAP HOTLINE For Use by WAP Members Only

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

General - Apple //	John Day	(301) 621-7543
	Dave Harvey	(703) 578-5621
	Robert Martin	(301) 498-6074
Accounting Packages		
Accountant(Dec.Sup.)	Mark Pankin	(703) 524-0937
BPI Programs	Jaxon Brown	(301) 350-3283
	Otis Greever	(615) 638-1525
Home Accountant	Leon Raesly	(301) 439-1799
Howardsoft (Tax)	Leon Raesly	(301) 439-1799
	Otis Greever	(615) 638-1525
APPLE SSC	Bernie Benson	(301) 951-5294
Apple TechNotes	Joe Chelena	(703) 978-1816
AppleWorks	Ken Black	(703) 369-3366
	Ken DeVito	(703) 960-0787
Communications Packages and Modems-Telecom.		
Anchor Mark 12	Jeremy Parker	(301) 229-2578
Apple Inc. Modem	John Day	(301) 621-7543
ASCII Express	Dave Harvey	(703) 578-5621
BIZCOMP Modem	Jeremy Parker	(301) 229-2578
General	Tom Nebiker	(216) 867-7463
Hayes Smartmodem	Bernie Benson	(301) 951-5294
Robotics Modem	Joan B. Dunham *	(301) 585-0989
SeriAll Comm. Card	Joan B. Dunham *	(301) 585-0989
Smartcom I	Harmon Pritchard	(301) 972-4667
VisiTerm	Steve Wildstrom	(301) 564-0039
XTALK CP/M Comm.	Bernie Benson	(301) 951-5294
Computers, Specific		
Apple //c	John Day	(301) 621-7543
Franklin&Laser128	Doug Trueman	(417) 679-3526
LISA/Mac XL	John Day	(301) 621-7543
Macintosh:		
General	Michael Yourshaw	(703) 534-2077
	Terry Monks	(703) 471-4610
	Steve Hunt	(301) 262-9080
	Donald Schmitt	(717) 334-3265
Comm. & Modems	Steve Hunt	(301) 262-9080
Desktop Pub/Graphics	Jay Rohr	(301) 655-0875
Excel	David Morganstein	(301) 972-4263
	Mark Pankin	(703) 524-0937
File Vision	Steve Hunt	(301) 262-9080
Helix	Jim Berry *	(703) 662-0640
	Harvey Levine	(301) 299-9380
Inside Mac	Jon Hardis	(301) 330-1422
MacDraw	Tom Berilla	(301) 434-3256
	Tom Parrish	(301) 654-8784
MacLion (DBMS)	Mark Miani	(202) 362-8123
MacProject	Jay Lucas	(703) 751-3332
MacTerminal	Jon Hardis	(301) 330-1422
MS-BASIC & MS-File	John Love	(703) 569-2294
Multiplan	John Boblitz	(301) 356-9384
	John Love	(703) 569-2294
	Steve Hunt	(301) 262-9080
	Walt Francis	(202) 966-5742
OverVue	J.T.(Tom) DeMay Jr.	(301) 779-4632
	Tom Parrish	(301) 654-8784
Programming	Michael Yourshaw	(703) 534-2077
Spreadsheets	David Morganstein	(301) 972-4263
Spreadsheets&Graphcs	Bob Pulgino	(202) 797-0879
Sidekick	Ray Hobbs(7:30-10)	(301) 490-7484
ThinkTank	Tom Parrish	(301) 654-8784
Word	Marty Milrod	(301) 464-2154
Data Bases		
dBase II	Paul Bublitz	(301) 261-4124
	John Staples	(703) 893-5985
dBase II & III	Ray Hobbs(7:30-10)	(301) 490-7484
	Jim Kellock (day)	(301) 986-9522
	Leon Raesly	(301) 460-0754
DB Master	Dave Einhorn	(301) 593-8420
Data Perfect	Leon Raesly	(301) 439-1799
Data Factory	Bob Schmidt	(301) 736-4698
General Manager	Normand Bernache	(301) 935-5617
PFS	Bill Etue	(703) 620-2103
	Ginny Spevak	(202) 362-3887
QuickFile II	J.J. Finkelstein	(301) 652-9375
Q-Pro-4	John Staples	(703) 893-5985
VisiPlot	Leon Raesly	(301) 439-1799
Games - Apple //	Charles Don Hall	(301) 330-4052
Games - Mac	Ron Wartow	(301) 654-4439
Hard Disks		
Corvus & Omninet	Tom Vier (BBS)	(301) 986-8085
Corvus	Leon Raesly	(301) 439-1799
Sider	Jaxon Brown	(301) 350-3283
	Otis Greever	(615) 638-1525
Languages (A=Applesoft, I=Integer, P=Pascal, M=Machine)		
A	Louis Biggie	(301) 967-3977
A	Peter Combes	(301) 251-6369
A,I	Jeff Dillon	(301) 422-6458
A	Richard Langston	(301) 869-7466
A	Leon Raesly	(301) 439-1799
A,I,M	Richard Untied	(609) 596-8816
A,I,M	John Love	(703) 569-2294
M	Ray Hobbs (7:30-10)	(301) 490-7484
P	Donn Hoffman *	(412) 578-8905
P	Michael Hartman	(301) 445-1583
Forth	Bruce Field	(301) 340-7038
MS Basic	Ray Hobbs(7:30-10)	(301) 490-7484
Math/OR Applns.	Mark Pankin	(703) 524-0937
Monitor, RGB	John Day	(301) 621-7543
Music Systems	Ray Hobbs(7:30-10)	(301) 490-7484
Operating Systems		
Apple DOS	Richard Langston	(301) 869-7466
	John Love	(703) 569-2294
	Adam Robie	(301) 460-6537
	Richard Untied	(609) 596-8816
CP/M	Ray Hobbs (7:30-10)	(301) 490-7484
	Leon Raesly	(301) 439-1799
MS-DOS	Ray Hobbs (7:30-10)	(301) 490-7484
ProDOS	Richard Langston	(301) 869-7466
	John Love	(703) 569-2294
Printers		
General	Walt Francis	(202) 966-5742
	Leon Raesly	(301) 439-1799
	Joan B. Dunham *	(301) 585-0989
Apple Color Plotter	John Day	(301) 621-7543
Apple Daisy Wheel	John Day	(301) 621-7543
Daisywriter 2000	Bill Etue	(703) 620-2103
	Henry Greene	(202) 363-1797
IDS 460	Jeff Stetekluh	(703) 979-8249
Imagewriter	John Day	(301) 621-7543
MX-80	Jeff Dillon	(301) 434-0405
NEC 8023	Bill Mark	(301) 774-0238
Okidata	Michael Proffitt	(301) 874-2270
	Dan Robrish	(301) 530-4202
Scribe	Phil Leber	(703) 378-4391
Silentype	Bruce Field	(301) 340-7038
Spreadsheets	Leon Raesly	(301) 439-1799
	Walt Francis	(202) 966-5742
Lotus 1-2-3	Walt Francis	(202) 966-5742
	Ray Hobbs(7:30-10)	(301) 490-7484
Multiplan	Terry Prudden	(301) 933-3065
VisiCalc	Walt Francis	(202) 966-5742
Sprdsht. 2.0(MagicCalc)	Leon Raesly	(301) 439-1799
SuperCalc Ver. 2.0	Leon Raesly	(301) 430-1799
Stat. Packages	David Morganstein	(301) 972-4263
Stock Market	Robert Wood	(703) 893-9591
Time-Sharing	Dave Harvey	(703) 578-5621
Word Processors	Walt Francis	(202) 966-5742
Apple Writer II	Dianne Lorenz	(301) 530-7881
	Leon Raesly	(301) 439-1799
Gutenberg	Neil Muncy Can.	(416) 298-3964
& Jr.	Harris Silverstone	(301) 435-3582
Letter & Simply Perfect	Leon Raesly	(301) 439-1799
Magic Window and II	Joyce C. Little	(301) 321-2989
Peach Text	Carl Eisen	(703) 354-4837
PIE Writer/Apple PIE	Jim Graham	(703) 643-1848
ScreenWriter II	Peter Combes	(301) 251-6369
	E. E. Carter	(202) 363-2342
Supertext II	Peter Rosden	(301) 229-2288
Word Handler	Jon Vaupel	(301) 977-3054
Word Juggler //e	Carl Eisen	(703) 354-4837
Word Perfect	James Edwards	(301) 585-3002
	Henry Donahoe	(202) 298-9107
Word Star	Leon Raesly	(301) 439-1799
	Dana Reil	(301) 350-3283

* Calls until midnight are ok.

CLASSIFIEDS

FOR SALE: 400K Apple Disk Drive for the Macintosh, $130. Call Dan Adkins for information. (h) 822-8052 or (w) 252-5990.

FOR SALE: 512K Macintosh, MS-Basic, $1250; 400K External Disk Drive, $150; Apple 1200 Modem, Mac Terminal, $175. Call Steve Kaplan at 474-5064.

FOR SALE: Macintosh 512 upgraded to 512E, with modem cable, MacPaint, and MacWrite. Call Chuck Bouldin (301) 921-3786 (days) 564-1431 (evenings).

FOR SALE: Apple /// computer, 256K single drive, hardly used, great backup unit for /// user, $650. Add printer, monitor and Advanced Version VisiCalc, $750. Call Stuart Cohen (301) 774-9182, evenings.

FOR SALE: Apple //c, Apple color monitor w/stand, printer cable. Best offer. Nancy, 333-5817.

FOR SALE: 300 Baud Apple modem, excellent condition, hardly used. $100 or best offer. Call Cynthia, (301) 565-3951.

FOR SALE: Apple //e accessories & software: Joystick, $25; Parallel Printer Card & Cable, $45; Apple Writer IIe, $35, Mastertype, $15; Sargon II, $5; Games: Wizardry, Olympic Decathalon, Taxman, Loderunner, Cannonball Blitz, Musicman, Eamon and others, $15 for all; DOS Reference Manual and 3 other books, $5. $75 for the entire lot. Call Bob Diamond, (o) 296-6710 or (h) 244-4630.

FOR SALE: Apple II+ compatible computer, 64K, 2 disk drives, Mono Monitor, includes dust covers, Word Processor, Home Accountant, VisiSchedule, box of blank disks and many more software programs. Excellent condition, $600. (919) 228-8458 or write to June Dennis, 1804 Woodhue Drive, Burlington, NC 27215.

FOR SALE: Apple //e computer w/monitor, 1 disk drive, 128K, Z-80 card for condensed screen, misc. Apple software. Call Glen, 598-7838. Best offer.

BUSINESS OPPORTUNITY: Mac Enthusiast/Partner/Investor wanted for local foodservice trade publication venture. Part time/full time/no time. Foodservice experience preferred. Call Mike, 821-0059, evenings and weekends, leave message.

COMMERCIAL CLASSIFIEDS

FOR SALE: DSDD Floppies. Black, $.85; colors, $1. Lifetime warranty locking case for 100, $18. For 50, $12. A-B switch with cables, $55. Visa/MC/AE. UPS daily. 703-759-3393.

INTERNATIONAL USERS GROUPS: APPLE-80, 1st Laser, & The Franklin Users Group Int'l supports users of Apple CP/M, Apple, Franklin, Laser & all compatibles. Membership includes a monthly newsletter, public domain library & hotline. U.S. membership $20 a year, $30 with expanded disk newsletter, $42 with our Disk of the Month. Add $15 outside North America. Sample Newsletter $2, PDS catalog $5. A.S.C.I.I., 87 Eastwind, Tecumseh, MO 65760. 417-679-3526, 2-5 PM Central.

THE WIZZ QUIZZER - an exciting entertainment/learning program (II, +, c, e) packed with songs and sound. 18 quizzes with thousands of questions NEVER EXACTLY THE SAME when replayed. Great for contests, trivia, or just enjoyment. Makes inexpensive fun Christmas gift. Quizzes: Movies, Sports, Cartoons, Inventions, Zodiac, Planets, Names, Famous Initials, etc. Written by WAP member. Send $7.50 ($7.88 in MD) to Gary Hayman, 8255 Canning Terrace, Greenbelt, MD 20770, and enjoy.

FOR SALE: Custom designed postscript logos (fonts) for your organization or yourself. Call Dan Adkins for information, (h) 822-8052 or (w) 252-5990.

FOR SALE: Apple Scribe Printer, $225 or best offer. Call Mal, 894-7811.

FOR SALE: Microsoft Excel v1.0 for Mac. Brand new - not opened. Must sell. Best offer. Call Jeff, 983-2327.

FOR SALE: 64K Apple][+, 2 Disk Drives, Olivetti ink-jet printer and graphics card, 80-column card, fan and surge protector, Hayes 300 baud modem and serial card, and lots of software. Will sell as system or parts. Phone: (o) 786-1283 or (h) 544-3646.

ANNAPOLIS APPLE SLICE NEWS
by Claire Johnson

The Annapolis Apple Slice (AAS) of Washington Apple Pi held its third meeting on October 10. Proposed bylaws were passed out for review and are on the agenda, along with an election of officers, for our next meeting. AAS has a goal of having a Disketeria by next month.

A thorough review was conducted of "Dollars and Sense", a budget and financial managment software package for small businesses and home accounting. Advantages and limitations of the software were discussed, and it was concluded that this is a recommended program for the very small business, and for home use. It can be utilized with very little effort, it tracks income and expenses, has multiple checkbook and check writing capability, can be used for small payrolls, and generates reports through a balance sheet. Comparative analysis exercises can be performed through graphics.

Annapolis area WAP members are invited to join our slice. Call Jim Wint (301) 544-5850 to get on the mailing list for meetings, and to receive an application blank.

ON THE TRAIL OF THE APPLE ///

by David Ottalini, /// SIG Chairman

Merry Christmas and Happy New Year! Seems strange writing this to you now, since the Journal deadline is early for December's issue. I am writing this in late October and already the Christmas Ads are out in full force. They never give you time to breathe, do they?

A Look Back and A Look Forward

From the standpoint of our /// SIG, I think you'll have to agree this was a very good year. You may remember in last year's December issue I provided you with some goals for 1986. I think most, if not all, were actually accomplished. We were able to get an Apple /// donated to Washington Apple Pi, we got our PD library going, began actively adding materials to the WAP library and even held a tutorial or two. We also got our own board on the Wap Telecommunications System. In addition, we found a new meeting place at the National Chamber of Commerce.

Our membership in the SIG now totals about 80, making us the largest Apple /// group on the East Coast. And it seems like every meeting there is at least one or two individuals (yes, even ladies on occasion!) attending who are new users looking for help of some form or another.

Now what goals should we have for 1987? I think at the top of my list this next year will be an all-out effort to make the WAP library a true resource for our members. We have already made a good start with manuals, an instructional videotape and software for the ///. There are also back issues of some magazines and newsletters. Thanks to Jim Salerno, they have been placed in data bases that will be made available to all as well. I'd like to see those resources increase, ultimately to the point where we have a copy of every major product and Apple /// manual in the library for all /// SIG members to use as a resource tool. I would also like to get hold of every training disk or product training pak, so that members can try out a program before deciding whether to buy it from a /// Vendor.

Another goal is to increase the PD library offerings. By the time you read this, we hope to have a special "New Members Disk" on-line, which contains a great deal of information about the /// and how to get it up and running. And our Disketeria Chairman, Al Lambert has a lot of excellent stuff we hope to bring you in the near future.

Also on the list: adding /// SIG volunteers to the help page of the Journal. We are sending out another /// SIG survey to find out if you would be interested in being part of the help page and for what particular programs. We also need your input on what the SIG can do to better serve you. We need to have more tutorials (especially for beginners) and will look into ways to provide them for you. I'd also like to get more members on the WAP TCS. I know it costs a little extra to get onto the system, but it's a great place to talk with other members in between our meetings.

An Answer to One Question

At our October meeting, there was some discussion about how to turn a 128K Apple /// into a 256K. A similar question was asked on CompuServe, but in relation to what one could do with the 256K memory board once a /// was upgraded to 512K (NOTE: On Three has reduced their prices for the 512K upgrade to $324). Here's what Ed Gooding, of ///'s Company suggested:

Save your 256K memory board and the PROM chips you remove when you upgrade. Next, find a 128K /// at a good price, and insert the 256K memory board and the PROM chips from your current system. Next, clip the resistor at location R58 and solder a jumper to the two small solder pads that lie perpendicular, and under the removed resistor. Voila! You now have a backup 256K ///!

Ed did not mention what to do if your system has a 12 volt power supply and you wish to change over to the more current 5 volts. We will endeavor to get that information for you in a future issue.

/// to Mac and Back

I am really excited to tell you about a new product that should be coming from Apple Computer shortly. I first found out about this from On Three's Editor Lynne Denicola. Apple has a program they are calling "Passport" that can do the following: It can convert SOS/ProDos files to Macintosh text files and back again. It works with a 3.5 inch Unidisk as one of the disks, since the Mac only uses the 3.5 inch format. The program was written by an Apple ///er within Apple by the name of Karl B. Young, whom Lynne says wanted some way to get his /// files over to the Mac. There is no indication when it will be offered or how much it will cost.

It was also not made clear to me if Apple would actually offer it in /// native mode. If it was indeed written by a ///er it would have to exist in that form, but given the fact it's a // and Mac world at Apple, it may only be released in ProDos (On Three got it apparently as a Beta tester for the IIgs). We could still use it in emulation mode then, but that would not be as satisfactory for many of us.

Null Modem Cables

There were a few questions at the October SIG meeting about null modem cables. They are the cables you use to connect your serial port or serial card to a printer. Unlike a modem cable, where each of the 25 pins goes directly from one pin to its partner on the other end, the null modem printer cable is a little different. The reason is that the modem needs to talk back to your /// while the printer does not. Thanks to the Apple Three Users of Northern California for the following description of how to make a null modem cable.

First you need two MALE DB-25 connectors (for the ends of your cable) and whatever length of cable necessary to reach from your /// to the printer. You should be able to get all these parts from Radio Shack (in fact check them out for ready-made null modem cables). The following is the order to connect the pins in the cable to make your own single cable. The notation used: 1-> 1 means pin one on one connector goes to the same pin on the connector on the other end. You will be hooking ten wires to a total of nine pins.

1-> 1	2-> 3	3-> 2
4-> 8	5-> 8	6-> 20

contd.

7-> 7 8-> 4&5 20-> 6

You can use either solderless connectors or soldered ones depending on how proficient you are with a soldering iron. Along with Radio Shack there are a number of computer catalog supply firms (like Inmac) that can supply you with the materials needed (they also have ready-made cables).

The last item you will need to check is your driver configuration. Your .Printer driver must be configured correctly so that it can run your serial printer. Usually, the printers come set at 1200 baud and 7 bit, odd parity. See your printer manual and check if this is the way your printer's dip switches are set. Now check your .Printer driver (by using the System Configuration Program on your Utilities disk) to see 1) that the .Printer driver you have is indeed a serial driver and; 2) that the driver configuration block is set to 1200 baud and odd parity. The value for 1200 baud is 08 and odd parity is 22. Detailed instructions on how to set this are in your Standard Device Drivers Manual on pages 102 to 105. Instructions on how to make changes to your SOS drivers are on pages 2 to 18 of the same manual.

I should also mention that if you buy an Apple /// serial card you do not have to get a null-modem cable. The card itself has a switch that changes from a regular RS232 setting to a null modem setting.

Cataloging Disks

As promised last time, here is that nifty little WPL program (for use with Apple Writer ///) that will catalog any disk and then print it if you want. This was adapted from an Apple // WPL program available in the WAP PD library. Simply type this in while using Apple Writer, save it and then, after clearing the screen type (Control)P Do (.dx/file name) and it will take things from there. Note that where you see the "ppr#" the "#" should really be an embedded reverse backslash (Control) V, Reverse Backslash, (Control) V.

```
 p update 10/22/86 p Tom Ostertag
 p Adapted by Dave Ottalini WAP
begin
 ny
 pnd
 pgo start
clear
 ppr#   <- Make the "#" an embedded reverse backslash.
 prt
home
 psr clear
 ppr=========================================
 ppr  PRINT CATALOG TO MEMORY PROGRAM
 ppr=========================================
 ppr
 prt
start
 psr home
 ppr  This program will load the catalog into memory and
 ppr  then print it out.
 ppr
 pin     Drive to Catalog => =$A
 OA$A#
 p
 p (5 spaces ^)
choose
 psr home
 ppr  Do you want to print a hard copy of
 ppr  the catalog?  (Y/N)
 ppr
 pin  => =$b
 pcs/$b/Y/
 pgo print
 pcs/$b/y/
 pgo print
 ppr Do you want to catalog another disk? (Y/N)
 pin => =$c
 pcs/$c/Y/
 pgo start
 pcs/$c/y/
 pgo start
 pgo quit
print
 pnp
 ny
quit
 pqt
```

And One More

I also promised you a great little 3EZP's tip. When setting up your custom printer, instead of going through all the trouble of plugging in each control code for underline, bold, shadow, etc. simply use the Boldface Begin (BB) designation to put an "Escape" in (just press the Escape key). Then, when you want to embed any control code from within 3EZPs or AppleWorks, just hit open apple O and type "BB". At the point where your cursor is you will now have the familiar caret "^".

Now, look in your printer book for the designation for what you want to happen at that point and type in the letter or number. For example, for my Star Powertype, to get Shadow printing I need an Escape Q, so I hit Open Apple O and then "BB" to get the caret. Then I simply type in Q immediately after the caret. To stop Shadow printing later, I'll hit Open Apple O, BB (and return) and then type an R. I like it because its simple and easy and it works.

Finally

A big thank you to Bob Consorti of On Three for his fine presentation to our /// SIG members in November. Bob demonstrated his company's excellent Desktop Manager program along with other On Three offerings. All of us appreciate the fact that he and his new wife came all the way out here to provide such an excellent program.

Again, have a super holiday and we'll see you at the Janaury SIG meeting (back to the 4th Wednesday by the way).

Let your computer earn money for you—develop mailing lists of various professions or specialties and we will rent them for you. Royalties paid for each rental. Call Professional List Services—**PLS, Inc**—for full details. Ask for Lee Raesly. (301) 439-1799.

PASCAL NEWS
by Robert C. Platt

This month's column covers news from the November USUS annual meeting.

Apple Pascal Canceled!

Apple was the leader in adopting the UCSD p-system and placing it into widespread retail circulation. The two Steves (while still in their sandal-wearing phase) recognized the need for a professional programming environment on the Apple //. As a result of their efforts, Apple got the first and only manufacturer's license for the p-System directly from UCSD. (All subsequent machine implementations were handled by SoftTech, now Pecan.) The p-System was an excellent choice for a number of reasons. Many important features of the p-System, including its compilers, were later ported over to the Apple /// as the foundation for its Sophisticated Operating System (SOS). Through the early 1980's, Apple encouraged software developers to work on the p-System and promised to support their products by supporting the p-System. A number of successful products resulted, including *Wizardry* , *ThinkTank* and *pfs:file*.

To date, Apple has kept its commitment by offering version 1.2 to support 128K Apple //'s and version 1.3 to support 3.5" drives. However, Apple now appears to be in the process of betraying its loyal p-System developers and users. It is proposing to cancel Apple Pascal as a commercial product. If you have been reading the **WAP Journal** for the past 7 years, you will realize what withdrawing the p-System from the market will do to the world of Apple // programming. I therefore ask you to join me in communicating your concern directly to Apple. I would hope that if Apple can no longer offer Apple Pascal as a retail product, it could at least sell it through APDA or users groups, such as WAP. Please write to:

Dan Cochran, Manager of Languages and Tools
Apple Computer, Inc.
20525 Mariani Avenue
Cupertino, California 95014

Point out that Instant Pascal does not meet the needs of experienced Pascal programmers. Also point out that released packages such as Desktop Toolkit, SANE, Pascal-ProDOS Support Tools, which were previously sold to developers by Apple should be transferred to APDA as well.

Other USUS Gossip

Chirs Jewell, formerly Apple Pascal marketing manager, is actively developing a ProDOS-16 hosted p-System for the IIgs. Pecan Software will release this Version IV p-System before the end of the year. It will not run on other //'s or ///'s. The first release will include the normal compilers and a preliminary version of the 65816 assembler. A subseqeuent release will offer an upgraded assembler and library units to call the IIgs ROM toolbox.

Pecan is also beta-testing Volition's modula-2 compiler. It is expected to ship within a month. The source code to all standard modula-2 system modules; Kerrigan & Plaugher's *Software Tools* written in modula-2; and Volition's p-shell will all be offered as separate products. Pecan is developing a new version of the Advanced System Editor (ASE) for Version IV of the p-System. The old version is once again available through Pecan for Apple Pascal users.

The new one-pass ETH compiler from Modula Corp drew high marks from the crowd. It generates native 68000 code for the Mac and features interface modules to the ROM in version 2.0, which is shipping now. The TVI Modula-2 compiler for the Mac is not shipping yet; call before you send your money.

Direct Access Files in MacPascal

One way in which MacPascal and Instant Pascal differ from standard Pascal is their funny implementation of random access disk files. Ordinarily, standard Pascal syntax requires a get command to read in a record from a file. But in MacPascal, the get is implied. There is no way to turn off this feature. This makes updating random access files very tricky. Listing 1 is a program which creates and updates a random access file. The program writes out the numbers from 0 to 8, in the form of the odd numbers and the doubles of the even numbers. It should print out 0,1,4,3,8,5,12,7 and 16. Try it! If you were to insert a *get(f)* between the *seek(f,i*2)* and the *f^:=f^*2* you would get an end of file message. The reference to *f^* next to the *2 implies reading in the next record and then multiplying the new value by 2. This means that if you want to modify several fields in a file record, you must be careful so as to avoid accidentally updating the neighboring record.

Listing 1

```
program RandomDemo;
    var  f : file of integer;
         i : integer;
         fname : string;
    begin
         fname := newfilename('Which file?');
         open(f, fname);
    for i := 0 to 8 do
         begin
              f^ := i; {load the number of the record into the
                                                        buffer}
              put(f)
         end;
    close(f);
    open(f, fname);
    for i := 0 to 4 do
         begin
              seek(f, i * 2);
              f^ := f^ * 2; {implied get}
              put(f)
         end;
    for i := 0 to 8 do
         begin
              seek(f, i);
              writeln(f^)
    end
end.
```

7 Meg IIe/1 Meg IIc

Want the best & easiest-to-use memory card on the market — at the best price? Buy Checkmate Technology's State-of-the-Art MULTIRAM RGB RAM CARD™ from us w/ BATTERY BACKED-UP STATIC RAM options that can load & save programs like AppleWorks for 10+ years! It's a FAST CHEAP REPLACEMENT FOR HARD DISKS, USER EXPANDABLE TO **7 MEGABYTES,** compatible will all (100%) 3rd party software/hareware, has an optional 65C816 slot saver Co-Processor card ($147), sharp 80 columns/Double Hi-Res, & FREE RGB*! It's a direct substitute for Ramworks I-III™ or Apple 80 col cards, has a **5 YR WARRANTY & FREE AUTOMATIC SOFTWARE UPDATES ONLY FROM US! For a limited time, you can buy Autoworks™ (BEST AppleWorks MACRO/mail-merge program on the market + more) for $23 with every 512k or larger IIe/IIc card.**

MultiRam RGB expands to 1 Meg RAM + optional 4 Meg's battery protected piggyback RAM + optional 2 Meg's STATIC RAM. **MultiRam IIe** expands to 768k and can piggyback w/ MultiRam RGB. **And the software & manual is the best on the market!**

FREE APPLEWORKS EXPANDER SOFTWARE WITH EVERY CARD — loads ALL (even printer routines) or PARTS of AppleWorks, runs faster, expands Desktop over 2048k, stores 23,000+ records & 4,800+ word processor lines, auto-segments large files onto multiple disks! **FREE** APPLEWORKS TIME/DAY/DATE ON-SCREEN w/ clock, AUTO-COPY TO RAM, ULTRA-FAST PRODOS/DOS 3.3. RAM DISK & RAM TEST. Optional CP/M & Pascal Ram disk ($20/ea)!

	MultiRam RGB Card	MultiRam IIe Card
64k **MULTIRAM**	169.	129.
128k **MULTIRAM**	179.	139.
320k **MULTIRAM**	199.	164.
576k **MULTIRAM**	229.	199.
832k **MULTIRAM**	254.	234.
1024k MULTIRAM	**279.**	← ← ← ← ←
1344k **MULTIRAM**	419.	
1600k **MULTIRAM**	449.	
1792k **MULTIRAM**	479.	

SpeeDemon II/II+/IIe-350% Speedup Card	**167.**
Apple IIe Enhancement Kit	**62.**
Cermetek 1200 Baud internal modem IIe/II+/IIgs	**184.**
Incomm 2400 Baud external univ. modem	**319.**
Clockworks Clock (Thunder/Time HO™ compat)	**89.**
13" Teknika RGB Monitor*	**322.**
AutoWorks (Best AppleWorks Macro+)	**34.**
ProAPP 10/20 Meg Hard Disks (+ FREE software)	**Call**
Apple Compatible Drives IIe/II+ (IIc + $15)	**135.**
256k Memory Chips-1 yr warranty (8)	**39.**

Terms: Add $4-Ground or $6-Air shipping & phone # to each U.S. MultiRam card order (foreign orders/FPO/APO extra). Add 3% for MasterCard/Visa (include #/expir) & P.O.'s. For fast delivery send Cashier's/Certified check/Money Order. C.O.D. (add $6) & personal checks accepted (allow 16 days). Tex res add 6 1/8% tax.

Checkmate Technology's MultiRam CX card easily expands your IIc to 640k and has a **CX+ Piggyback** to add another 512k **(over 1152k total)!** It's 100% compatible with all IIc software/hardware & upgradable with a 65C816 kit ($105) to likely run new technology software — all using about 50% less power than Z-RAM! It has the **SAME FREE SOFTWARE, FREE UPDATES & 5 YR WARRANTY AS IIe CARDS. For a limited time, buy a IIc System Clock for $50 w/ 512k or larger card.**

256k MULTIRAM CX	**179.**
512k MULTIRAM CX	**209.**
768k MULTIRAM CX Combo	**328.**
1024k MULTIRAM CX Combo	**354.**
256k MULTIRAM CX+	**210.**
512k MULTIRAM CX+	**222.**
1200 Baud IIc Modem (+$20/cable)	**159.**
Clip-on IIc Rechargable Battery	**129.**
IIc Flat Panel Display (W O W !)	**299.**
IIc System Clock (w/ 512k+ card)	**50.**

WHY BUY FROM COIT VALLEY COMPUTERS RATHER THAN SOME MAIL ORDER HOUSES? Only we offer a **15 day MultiRam complete money back satisfaction guarantee,** extra software, more support, **free automatic software updates,** free 64k w/ each 256k/512k/768k IIe card. We know the products, & stock them for fast shipping! CALL FOR QUESTIONS, PRICES, DISCOUNTS. **SCHOOLS & GROUPS WELCOME.**

Autoworks, Ramworks III/Timemaster II H.O./Z-ram, respective trademarks of Software Touch, Applied Engineering. *Call for RGB Connectors/cables (not included).

ORDER NOW!

COIT VALLEY COMPUTERS (214) 234-5047
14055 Waterfall Way Dallas, Texas 75240

NAME _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

PHONE ( ) _____

SIGNATURE

QTY	DESCRIPTION	PRICE
	SHIPPING	
	TOTAL	

MC/VISA _____ EXP _____

COIT VALLEY COMPUTERS

(214) 234-5047 MCI 2969684 Telex 6502969684 (WUI)

14055 Waterfall Way
Dallas, Texas 75240

Q & A
by Bruce F. Field and Robert C. Platt

Recently I had a question about eliminating carriage returns from files uploaded to the Apple from a Radio Shack M100. My original solution, in response to the question, was to use the Ctrl-F function in Apple Writer to globally replace the carriage returns. I also reported Chris Arndt said that when using the Radio Shack Telecom program to transfer programs, the "width?" prompt should be answered with only a carriage return (no number). George Katzenberger has written with another solution.

"The secret is that the M100's RS-232 port and built-in modem can be accessed from within the TEXT program. Here's how it works. With the file you desire to send loaded into the TEXT program, press F3 and at the 'Save to:' prompt, type COM:87N1E. The 'COM:' command selects the RS-232 port, and the M100 users will recognize the string that follows as a parameter setting string, in this case, 9600 baud, 7 bit word length, no parity, 1 stop bit, XON enabled. The user will have to set the parameter string to match his equipment and software. The M100 modem can be used from TEXT as well, the technique is the same except that at 'Save to:' type 'MDM:M7N1E'. Using the modem limits transfers to 300 baud."

Thanks George, I'm sure our readers will find that helpful.

Q. I recently bought an Apple color monitor for my //c and an unusual problem came up. Certain disks would not now boot. I took the //c and the disks to my dealer's repair shop and it worked perfectly! It was suggested that I plug in the peripherals one at a time in order to isolate the problem. The color monitor was the problem. The fix was to make a shield of household aluminum foil and cover the top of the computer. It would appear that the color monitor should be shielded better by Apple. Is there a better looking fix for this problem?

A. You are not alone—this same problem has been discovered in the past with other monitors. Agreed, the monitor manufacturers should shield the monitors better, but you may have an especially noisy one, or your //c may be particularly sensitive to noise. One solution is to move the monitor further away from the //c. A few inches can sometimes make enough of a difference to eliminate the problem. The only other solution I know of is to place the foil shield inside the case of the monitor or the computer. This can be risky as you must put some insulating material (mylar film?) between the foil and the circuitry in the instrument so it doesn't short anything. The foil should be electrically connected to the power line ground but nothing else. Perhaps you can make or buy a decorative metal monitor stand that will also shield the computer.

Q. I have a very intermittent hardware problem with my Apple][+ that has been driving me up a tree. The problem only happens when the room is warm and the computer has been on for a few hours. The "G" execute command in the monitor will not execute. For example, 3D0G will cause the pointer to move to $03D0 at which point the computer stops in the monitor. The jump instructions are correct. Basic programs execute normally. I have peeked all F8 ROM memory locations and stored them on a file during normal operation and during the problem. A comparison of the values indicate all F8 memory locations read normally and compare to the pre-problem condition, thereby eliminating the F8 ROM. The failure of the "G" command will happen at any memory location. The routine at a memory location will execute normally if called from Basic with "call".

A. Assuming you have done all the usual Apple trouble-shooting things, like pushing all the chips down in the sockets, and removing and replacing all the peripheral cards, my best guess is that you have a malfunctioning RAM chip. It's possible that the "G" command uses a memory location that occasionally fails, or fails when accessed after another particular location. I had a memory chip once that worked fine 99% of the time but with one, and only one, Applesoft program it replaced one of the characters in the program with an ampersand whenever I saved the program to disk. I could edit the bad line to change it back and run the program fine, but as soon as I saved it the ampersand was back! Try running a RAM memory test program to see if anything turns up. You could also swap pairs of RAM chips (two at a time) to see if the problem changes. This is easier in a //e with only eight chips rather than the 24 in the][+, but, if you are really desperate...

Using the same convoluted logic I wouldn't necessarily rule out problems in the F8 ROM or the other ROM chips. I might believe that accessing certain combinations of address locations could produce problems. One other test you might try is to NOT boot DOS on power up. If you then get in the Monitor and use only Monitor commands you can be determine exactly what RAM and ROM memory locations you are using. DOS won't be doing things you are unaware of, and Applesoft will also be out of the picture, so you will be using only the F8 ROM, the zero and first page of RAM and whatever other locations you specify.

Q. What are the valid values for the variable "NUMELS" in the Fast Garbage Collection Routine that appeared in Call -A.P.P.L.E. magazine and in Call -A.P.P.L.E. In Depth, Vol. 1, "All About Applesoft"? I can't get any value greater than 64 to work.

A. For the uninitiated, Fast Garbage Collection (FGC) is a machine language program written by Randy Wiggington that can be called from an Applesoft program to clear unused strings from memory. If left to it's own devices, Applesoft will do this whenever memory gets full, but the process can take several minutes. During this time the computer appears to have died, it won't respond to the

contd.

keyboard or print anything on the screen. FGC will perform the same function in a few seconds or less. NUMELS is a variable that controls the number of strings that are processed on each pass through FGC. The value of NUMELS used is a tradeoff between speed and the amount of storage the program requires to do the processing.

As printed in "All About Applesoft", NUMELS is set to 16. However Randy says it can be increased to 32, 64, or 128. In fact it is limited to a maximum of 64 because of two conditional branches in the program. Near the end of the program ($914A) register X is set to NUMELS*2 - 1. This register is used as a loop counter and is decremented at $9191 and tested for a positive value at $9192. Normally it starts as a positive value and is decremented through zero and becomes negative at which time the loop is terminated. If NUMELS is set to a value greater than 64, NUMELS*2 - 1 is interpreted as a negative number and the loop terminates incorrectly after only one pass. The same situation happens at $9194 and $919E, $919F.

Q. I run a //e driving a Hewlett Packard 7475A plotter via a Super Serial Card. The sad fact is that there seems to be very little software available for such a combination as the machine driver to the plotter must be quite complicated. The question I have is—do you know of any driver routine that is available anywhere in the world that will enable me to use the plotter to dump work produced by such programs as Print Shop or Newsroom?

A. I am not aware of any general purpose driver to do what you want. It is most likely that some charting programs can be found that have drivers built in to produce bar graphs and the like on the plotter. The problem is that you have two incompatible methods of producing graphics. The screen is arranged as bit mapped graphics; it is composed of a matrix of dots that are either on or off. Your plotter on the other hand is designed to process a series of vector commands; move to a location, draw a line to another location, etc. Once the screen picture has been drawn, there is no way to convert that image into vector commands. The only way this can work is if the graphics generating program produces both the vector commands and the screen drawing commands.

It is possible to write a driver program to command the plotter to do the equivalent of a scan of the screen and reproduce the dot pattern on the plotter. Using this method turns your plotter into a jackhammer and produces a drawing resolution the same as the screen resolution. I don't think this is a very acceptable solution, especially since inexpensive dot matrix printers do it better and quicker.

Q. My five year old Apple][+ has developed a distressing malfunction. A key that is pressed once is frequently automatically repeated one to several times. Initially it occurred only with keys on the upper row of the keyboard, but recently the malady has spread, in seemingly random fashion, to other areas of the keyboard. Any diagnostic or therapeutic suggestion would be greatly appreciated.

A. The problem is most likely with the keyboard encoder chip on your keyboard. Different Apples have different chips so you will have to look at yours to see which you have. The chip will be the only 40 pin chip (approx. 2.5" x 0.6") on the keyboard printed circuit board. You may also have a second board attached to the keyboard printed circuit board, in which case the encoder chip will be on this board. The keyboard printed circuit board is the one that has all the keys soldered to it and you will have to disassemble your Apple to get to it. Turn the Apple upside down and remove the Phillips head screws around the outside of the bottom panel. Carefully lift the top case of the Apple off and disconnect the cable which runs from the keyboard in the top case, to the motherboard which is attached to the metal bottom panel. It is possible to buy some of the encoders from electronics parts supply companies for about $5, see the ads in the back of BYTE magazine. Some of the early model encoders are out of production and it that case you will have to have your Apple dealer replace the entire keyboard.

Q. Is a compiler for the C language available for the UCSD p-System?

A. C is a structured programming language developed at Bell Labs. At present, no C compiler is commercially available under the p-System.

Q. Is a C compiler available for the Apple //?

A. Yes, Aztec C is available to run under the 65C02.

Q. Is the p-System available for the IIgs? Will it support 65816 op codes?

A. Yes, Pecan Software will ship a ProDOS 16 hosted p-System before the end of 1986 that will offer an assembler that will handle 65816 op codes.

Q. I have purchased UniDOS 3.3 to run DOS 3.3 programs with my UniDisk 3.5. When I run THE Spreadsheet 2.0 under UniDOS I get terrible problems. I know that UniDOS 3.3 uses more memory than DOS 3.3. Could that be causing the problem?

A. Lee Raesly, our resident THE Spreadsheet expert, reports that both programs are trying to use the same segment of memory. Also, THE Spreadsheet patches DOS 3.3. Accordingly, he recommends against using THE Spreadsheet with anything other than true DOS 3.3.

Q. Is there a bug in ProDOS 1.1.1 that will sometimes wipe out track 0 on a disk?

A. Yes, Stephen Thomas of MacLagan Wright & Associates in West Heidelberg, Australia has identified the source of the bug and provides the following patch program. Thanks to Tom Weishaar of *Open Apple* for allowing us to reprint it.

```
10  REM Stop ProDOS track 0 trashing
20  REM by Stephen Thomas
30  TEXT: HOME: D$=CHR$(4): E=0
40  VTAB 12: PRINT "NOW PATCHING
    PRODOS."
```

contd. on pg 17

LETTER TO THE EDITOR

October 22, 1986

Dear Editor,

I enjoyed Rick Chapman's analysis of the Apple II hi-res screen address calculation methods and agreed with his conclusions.

A little history. The Apple II was basically designed and demonstrated mid-76 with the intent to create unique features with few chips, and no clear idea that the computer was to be a product, or that it could be successful as one. Many of the Apple II features which set the standards for early 'personal' computers came from an effort to duplicate the Atari arcade game "Breakout" but programmed in BASIC. At this time only a couple microprocessor-based arcade games were out and Atari had not yet introduced the first home video game.

By late-76 I wasn't sure that hi-res would be worth including (at the cost of two or three chips). What would it be used for? This wasn't clear at a time when it wasn't clear that we'd ever add floppy disks and the like. Remember, the Apple II was the first low cost computer ever to include as a standard feature color. Or graphics. Paddles. Sound. XBASIC in Rom. 2K ROMS. Home TV output. Monitor in ROM. Cassette I/O. Predecoded and addressed slots. Shared screen/micro RAM. One of the first to follow the smart terminal (keyboard/TV) paradigm for home computers. And more. Even hi-res. So, despite the fact that I had played *Spacewar* at the Stanford AI Center where Allen Baum worked, it wasn't at all obvious in those early years who would actually use hi-res or how they would use it in the end.

We did decide to include hi-res with the memory mapped out as it is today (first hi-res page $2000-3FFF). Because 16K RAMs were so expensive then, I had to include 3 rows for hi-res to be usable with 4Ks. That's why the capacity of early Apples was 48K (*three* rows of 16K RAMs).

I had a little spare time just before the Apple shipped (5/77) and I managed to write a subset of *Spacewar*. It was this program that led to the non-blitted shape routines seen later in Applesoft. Both RAM and ROM were expensive then but that wasn't the reason for the short calculation routine. I wrote the routine not worrying about speed, and this presumption was reinforced by the fact that I demonstrated that *Spacewar*, my assumption of the ultimate demanded by video games, would work adequately. I felt that all users would just use the subroutine calls for 'computer-speed' graphics and never gave thought to the need for faster routines. It's safe to say that had I estimated their importance, I would possibly have gone with a table-driven approach for screen address calculation.

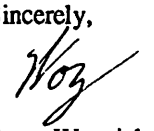
The hi-res routines were used in a few demo programs during mid-77. When outside developers/enthusiasts (they were the same then) called our Dana Reddington he would send them the routines on cassette tape and the descriptive "Woz Pak". Dana wrote one of the first small computer hi-res games which Apple shipped as *Star Wars* (before we were large enough to be corrected!) We then shipped the *Programmer's Aid #1* in (early?) 1978, which consisted of a ROM with several enhancements for the Integer Basic System, virtually entirely written by myself. The ROM plugged into the "D0" ROM socket ($D000-D7FF) of the Apple. The hi-res listing included with this ROM was dated 9/77. One should note that the line- and shape-drawing routines implemented shorter algorithms for single-line up and down operations on the hi-res base address, HBASL/HBASH. This was done for speed considerations which were a greater factor in those drawing operations than in a hi-res screen scroll. [My solution to hi-res scrolling once was to generate a subroutine in RAM which used the faster *direct addressing* mode for the hi-res screen memory. The scroll routine would alter addresses within the ram-based subroutine in-between eight calls. I didn't go with this routine because the speed made the text unreadable anywhere on the screen as it scrolled.]

I am glad to read the conclusions of the article and I agree with them. Even within a company such as Apple everyone tells how to improve an aspect of performance several times, yet overlooks the fact that users will never actually see any speedup in real applications.

Below is a re-write of the hi-res base address calculation routine which was done last night. Of course I had the advantage of more 6502 experience since the original was written, plus the advantage of the first (rather good) routine to observe and compare with, plus the goal to improve it. But in cases such as this I follow the standard protocol: "The guy who wrote the original is not as smart as I."

Well, thank you for keeping me informed.

Sincerely,



Steve Wozniak

GBASL,GBASH calculation

28 bytes, 36-39 cycles

```
        ASL             bcdefgh0 ('a' in carry)
        TAX
        AND   #$F0      bcde0000
        BPL   next1
        ORA   #5        bcde0b0b
next1   BCC   next2
        ORA   #$A       bcdeabab
next2   ASL             cdeabab0 ('b' in carry)
        ASL             deabab00 ('c' in carry)
        BCC   next3
        INX             bcdefghc
next3   ASL             eabab000 ('d' in carry)
        STA   GBASL
        TXA             bcdefghc
        ROL             cdefghcd
        AND   #$1F      000fghcd
        ORA   HPAG      0xxfghcd
        STA   GBASH
```

GBASL,GBASH calculation - Variation #1

27 bytes, 38-40 cycles

```
        TAX             abcdefgh
        ASL             bcdefgh0 ('a' in carry)
        AND   #$F0      bcde0000
        BPL   next1
        ORA   #5        bcde0b0b
next1   BCC   next2
        ORA   #$A       bcdeabab
```

contd.

```
next2   ASL             cdeabab0 ('b' in carry)
        ASL             deabab00 ('c' in carry)
        STA     GBASL
        TXA             abcdefgh
        ROL             bcdefghc
        ASL     GBASL   eabab000 ('d' in carry)
        ROL             cdefghcd
        AND     #$1F    000fghcd
        ORA     HPAG    0xxfghcd
        STA     GBASH
```

GBASL,GBASH calculation - Variation #2

26 bytes, 36-38 cycles
(requires HPAG2=HPAG/2)

```
        ASL             bcdefgh0 ('a' in carry)
        TAX
        AND     #$F0    bcde0000
        BPL     next1
        ORA     #5      bcde0b0b
next1   BCC     next2
        ORA     #$A     bcdeabab
next2   ASL             cdeabab0 ('b' in carry)
        ASL             deabab00 ('c' in carry)
        STA     GBASL
        TXA             bcdefghc
        AND     #$E     0000fgh0
        ADC     HPAG2   00xxfghc
        ASL     GBASL   eabab000 ('d' in carry)
        ROL             0xxfghcd
        STA     GBASH
```

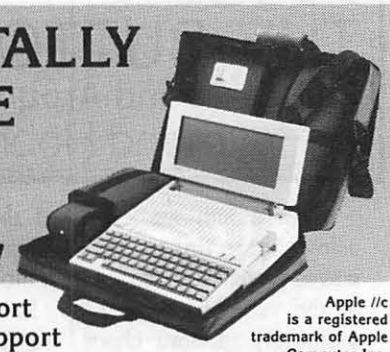
Q & A contd. from pg 15

```
 60 IF PEEK(116)<96 THEN E=1: GOTO 500:
    REM MAKE SURE THERE IS ROOM
 70 PRINT D$;"UNLOCK PRODOS"
 80 PRINT D$;"BLOAD PRODOS,A$2000,TSYS'
 90 FOR ADR=22211 TO 22220 STEP 3 :
    REM CHANGE FOUR STA TO LDA
100 IF PEEK(ADR)=189 THEN E=2:
    GOTO 500
110 IF PEEK(ADR)<>157 THEN E=3:
    GOTO 500
120 POKE ADR,189
130 NEXT
200 ADR=20484: V(0)=189: V(1)=142: V(2)=192:
    REM CHANGE NOP TO LDA $C08E,X
210 FOR I=0 TO 2
220 IF PEEK(ADR+I)<>234 THEN E=3: GOTO 500
230 POKE ADR+I,V(I)
240 NEXT
250 PRINT D$;"BSAVEPRODOS,A$2000,TSYS"
260 PRINT : PRINT "PATCHES COMPLETED."
270 END
500 PRINT CHR$(7);"ERROR! NO PATCHES
    WERE MADE."
510 ON E GOTO 530,540,550
520 PRINT "PRODOS FILE NOT FOUND." : END
530 PRINT "NOT ENOUGH ROOM TO LOAD
    PRODOS." : END
540 PRINT "FILE HAS ALREADY BEEN
    PATCHED." : END
550 PRINT "THIS VERSION OF PRODOS NOT
    1.1.1."
560 END
```


The C-VUE is now compatible with the Laser 128!

FIRST TOTALLY PORTABLE APPLE //c

Use it wherever you are!



Apple //c is a registered trademark of Apple Computer Inc.

- FREE Technical support
- FREE Appleworks support
- FREE Checkmate Tech software updates
- Toll-Free order line (HI, AK & OUTSIDE CA)
- Open 7 days a week, (7am – 7pm PST)

JANUARY SPECIALS!

- 10% OFF on all Checkmate Technology Memory Boards!
- 256K Dram Chip (each) only $3.35! (reg. $3.75)

PORTABLE SYSTEM

C-VUE LCD Flat Monitor*	$299.00
Prairie Power System Battery Pack & Carrying Case	139.00
512K Multiram CX	225.00
Proclock //c (int)	129.00
Cigarette Lighter Adapter	24.95
Power Extension Cable	16.95
Power - Y - Adapter	18.95

//e UPGRADES

Enhancement Kit	60.00
Proclock //e	129.00
Unidisk 3.5/Controller	399.00
768K Multiram //e	219.00
1024K Multiram RGM	280.00

IIGS UPGRADES

Apple 1 Meg Memory Expansion Card	299.00

//c UPGRADES

C-VUE Back Lighting	250.00
Apple Back Lighting	275.00
Apple //c 1 Meg Memory Expansion Board	339.00
512K Multiram CX/C816	339.00
CPU //c Clock (Ext)	64.00
Unidisk 3.5	349.00
1 Meg Legend C' Card	249.00
Locksmith 6.0	69.95

TELECOMMUNICATIONS

Promodem 300C	125.00
Apple Personal Modem	349.00

- If you don't see it CALL US!
- Next-day delivery available

MasterCard and VISA accepted
Prices subject to change without notice

Roger Coats
P.O. Box 171466
San Diego, CA 92117

FREE! Price Quotes on all Apple Products & Peripherals

*14-day money-back guarantee

Ordering Information:
(All products F.O.B. San Diego)
1-800-438-2883 (AK, HI, & outside CA)
(619) 274-1253 (within CA & outside U.S.)

Please Note!

The meeting date for December is the 20th, 3rd Saturday - Garage Sale.

THE BUTTON-DOWN GUIDE TO THE APPLE

Part IV: In and Around the Apple][

by Raymond Hobbs

Last month we looked at the Apple's way of counting, using sixteen fingers. The reason for sidetracking in that way was to prepare the reader for a more detailed look at the insides of the venerable Apple][. In order to make sense out of seemingly random chaos, we look at the Apple's memory addresses in hexadecimal, and the whole structure suddenly takes on the appearance of a well-ordered design.

The Apple's memory is broken down into what we call *pages* . In decimal terms, a page is 256 bytes of memory. That's also (amazingly enough) equal to 100 hexadecimal bytes. For the purposes of this article, we shall precede each hexadecimal number with a dollar sign, in order not to confuse anybody, so we'll amend that number to $100 bytes (users of CP/M or MS-DOS will note that an "H" is used in lieu of the "$" to distinguish hex numbers in those environments, but Apple has always used the "$" for the Apple][series, and we shall follow that convention).

If we do a little arithmetic, we find that a 64K Apple has 65536 bytes of memory ($FFFF hex) broken into 256 byte ($100 hex) pages, so we can deduce that there must be 256 pages in the Apple (65536/256 = 256, or $FFFF/$100 = $100). Several of these pages are reserved for particular uses, while others are "general-purpose" areas. It is also important to note that ROM (read-only memory) occupies the upper 25% of this area, equal to 64 pages. This means that we can write to 192 pages and read all 256 pages. Although all of the 192 read/write pages are available to us for writing programs, we must be careful about the use of some of these areas, because both the Monitor and DOS also want use of them. Figure 1 is a memory map of the Apple][, with the areas which the Monitor and/or DOS makes use of shaded in. The read-only areas (ROM) are shaded a darker color:

Page(s)	Function(s)	# of pages
00	"Zero page" - stores pointers used by the Monitor for calculations, etc.	1
01	System Stack - used by Monitor to hold subroutine addresses and such.	1
02	Keyboard Buffer - used to retain what is typed in at keyboard.	1
03	DOS vector page. Used by DOS like the Monitor uses Zero page.	1
04-07	Text and LoRes screen 1. Used to display text and LoRes graphics.	4
08-0B	"Free memory" - programs are loaded here. Also used as a secondary	4
0C-1F	"Free memory" - text and LoRes graphics screen.	20
20-3F	"Free memory" - also used as for HiRes graphics, screen 1.	32
40-5F	"Free memory" - also used as for HiRes graphics, screen 2.	32
60-95	"Free memory"	54
96-BF	DOS is stored in this area.	42
C0-CF	Peripheral Device input/output area.	16
D0-DF	Bank-Switchable Memory - Programmer's Aid ROM	16
E0-F7	The Applesoft Interpreter is stored here.	24
F8-FF	The Monitor is stored here.	8

FIGURE 1

As you can see, there is quite a lot of jostling for the real estate inside the Apple. The only totally uncontested areas available to the programmer add up to about 18.5 K, or 74 pages. However, programs that will not make use of the secondary graphics screen can gain another 32 pages, and those programs that do not use graphics at all can gain 64 pages.

Some explanation of these areas is in order. To take the simplest cases first, the screen areas (pages $04 through $07 and $08 through $0B for text and Low-Resolution graphics screens 1 and 2, and pages $20 through $3F and $40 through $5F for High-Resolution graphics screens 1 and 2) are really *buffers* . What we mean by *buffer* is an area where data is stored on-the-fly. Actually, by storing data in these areas, something will appear on the screen (assuming that that particular screen mode is currently active). In BASIC, try this: 1. Turn on HiRes graphics by typing "HGR". 2. Display something by typing "POKE 8764,119". What you should see is a broken line in the middle of the graphics screen. Remember that decimal 8764 is hex $223C. What you did was to place (POKE) character 119 into location $223C, which is in the HiRes screen 1 buffer. When you have returned to text mode, what has happened to the data you stored in location $223C? It is still there. The command "HGR" in BASIC will clear out the area between $2000 and $3FFF to null values prior to switching to HiRes graphics mode, so that is why nothing appeared on the HiRes screen before you POKEd value 119 into the buffer. The same type of thing happens with the other buffers. Return to text mode by typing "TEXT" and clear the screen by typing "HOME". Now try this: Type "POKE 1124,90". You should see a "Z" in the middle of the screen, about two-thirds of the way down. The character was placed there because storing it in memory in the text screen buffer (1124 decimal + $464 hex) is the same thing as putting it on the screen (again, assuming that the screen is active at the time). Actually, almost all game graphics are done this way—instead of drawing the figure on the screen, the figure is stuffed into the screen buffer. That way, the Apple doesn't have to figure out where and how to draw the figure—the figure just appears!

The next simplest area is the keyboard buffer, but there's not much to be said here: as you type in data at the keyboard, the keystrokes are stored in the keyboard buffer. Programs can fetch those characters either one at a time, or a line at a time, and the Monitor provides special program routines to accomplish this. If the keyboard buffer is used to store data, it should be kept in mind that anything typed in at the keyboard will wipe out whatever was in the buffer before.

The next area to look at is the System Stack, located on page $01. The stack is used as a storage area, but in a special way: instead of merely storing data there, the data is "pushed" onto the stack. This implies that there is something there to push, and that is the case. It works like a stack of cafeteria trays, in that when a tray is added, it is added on top of the ones that are already there. When one is removed, it is removed from the top of the stack, so that the last tray placed on the stack is the first one which will be removed. This type of stack is called a "LIFO" (last-in-first-out) stack. Data is "pushed" on the stack and "popped" off of it. How is a stack used? Well, in the most common case, it makes a BASIC command like "GOSUB" possible. Did you ever wonder how the Apple could remember where to return from a subroutine? Well, when a "GOSUB" is encountered, the first thing that the Apple does is to push the address of the next program line onto the stack. Then it branches out to the subroutine called

contd.

by the GOSUB and performs the required work until it encounters a "RETURN" statement. When the RETURN is found, the Apple pops the address off the stack and branches to it. That address is, of course, the address of the program line following the GOSUB statement. Why not just use any old area to store the RETURN address? A simple case is shown below in Figure 2:

```
10 GOSUB 100          <-- Push the address of line 20 statement onto the stack.
20 TEXT: HOME
30 PRINT "WELCOME TO THE APPLE ]["
40 PRINT: INPUT "PLEASE ENTER YOUR NAME:", N$
50 IF N$ = "" THEN GOTO 40
60 N$ = N$ + " IS A REAL DODO!"
70 PRINT: PRINT: PRINT N$
80 END
100 HGR
110 GOSUB 200         <-- Push the address of line 120 statement onto the stack.
120 IF A$ = "N" THEN GOTO 60
130 RETURN            <-- Pop the address of line 20 statement off the stack.
200 VTAB(20)
210 INPUT "DO YOU WANT TO GO THROUGH THIS?", A$
220 RETURN            <-- Pop the address of line 120 statement off the stack.
```

FIGURE 2

As you can see in Figure 2, there is a GOSUB within a GOSUB. such nesting of subroutines can result in quite a number of addresses stored in a particular order. Notice that the line 20 address is stored first, then the line 120 address. Following the RETURN statements, the line 120 address must be retrieved first, then the line 20 address. This is just the way the stack operates. Moreover, each of these BASIC program lines may require a significant number of Monitor routines to be run, in order to carry out the required tasks. The Monitor routines, in turn may call other Monitor routines, so that it is not difficult to wind up storing 30 or more addresses on the stack. Most programmers complain that stacks are too short—never that they waste space!

The uses of pages zero and three ($00 and $03) are so varied that they warrant a column of their own. However, such things as the location of the start of DOS, the system RESET vector (a pointer to the RESET routine), the location of the cursor (both horizontal and vertical), pointers to error subroutines, Hi-Res graphics positions, scratchpad areas for calculations by the Monitor, temporary register storage and many other wonderful things are stored in these areas. The Monitor is the primary user of Zero page, while DOS is the primary user of page three. If space is really tight, the programmer can sneak a short subroutine into page three, at the very top of the page, but it had better be short. As for page zero, there are only a few bytes available to programmers on that page. Why is the low-address real estate so valuable? When we get into how the Apple manages its addresses, we'll see that a lot of time can be saved by using Zero page wisely. For now, the best thing is to look at it and sigh.

The last area in RAM to consider is that area occupied by DOS (pages $96 through $BF). DOS is only part of the Apple's operating system—that part which handles disk operations. DOS is loaded into the Apple from the boot-up disk, and if you power up the Apple without a disk in the drive, DOS will be absent entirely. You will then notice that DOS commands, such as "CATALOG" or "RUN" will not work—instead, typing these commands in at the keyboard will result in a "SYNTAX ERROR" message and a friendly (!) beep. To make matters worse, "PR#6" will not work either, so in order to load DOS, it is usually necessary to power down, insert a disk, then power up again (this can be circumvented by using a Monitor subroutine—type "CALL -151" then "C600G" with a disk in the drive and the machine will boot the disk. The CALL -151 enters the Monitor, and the C600G tells the Apple to go to location $C600 and execute the program stored there—more on this in a moment). DOS contains all the routines necessary to interpret our DOS commands and then execute them. At the lower end of DOS are file buffers, which contain free space used to keep multiple files open simultaneously. Initially, the buffer space is sufficient to keep 3 files open at once, but this may be adjusted downward to 1 or upward to 6. Each buffer uses up 595 bytes of storage ($253 hex), so if space is tight and multiple files are not needed, this space can be reclaimed (use the MAXFILES command).

That leaves us with only the ROM areas left. The highest area (pages $F8 through $FF) are occupied by the Monitor, which we have mentioned frequently. The Monitor is the most basic unit of the Apple's operating system. It is a collection of machine-language subroutines which manage the most mundane jobs on the Apple, such as reading lines and characters typed in at the keyboard, placing text onto the screen (although we have already duplicated this process ourselves, above), and routing output to the proper device. The Monitor is also responsible for getting the Apple in order when the computer is first powered up, or when the RESET button is pressed. There is even a subroutine for printing "APPLE][" on the screen when the machine is first booted up. When we study the Monitor in detail, we'll see how to make direct use of the Monitor's subroutines to make our work easier for us.

The next lowest area of ROM (pages $E0 through $F7) contains the Applesoft BASIC interpreter. This collection of subroutines first reads and interprets our BASIC statements, then interacts with the Monitor or with DOS to carry out the desired functions. Some functions, such as floating-point math, are accomplished entirely by the interpreter, without recourse to the Monitor.

The area from page $D0 through page $DF is used to "flip-flop" between banks of RAM memory. This area, which we shall work with later, is useful only if you have a RAM expansion card in your Apple. If you do, you can access the extra memory on that card through this area.

The last area to look at is probably the toughest to learn. The area which occupies pages $C0 through $CF is the peripheral device input/output area. This area is subdivided into two groups: The first group, the peripherals themselves, occupies the first 8 pages, while the second group, called the "Expansion ROM" group occupies the last 8 pages. Let's look at the peripheral group first. The addressing scheme is really easy to understand in hex: the peripheral device is located at address C_00, where the slot number replaces the blank space. Remember our escape from a DOS-less boot, where we entered the Monitor and called a subroutine to reboot the machine with a disk in place? The Montor command was "C600G". We can see now that the C600 part refers to the peripheral device in slot 6—the disk drive. The "G" part is the Monitor command "GO", which means to execute the code found at the specified location. What really happens is that the Apple looks at the peripheral card in slot 6 and starts to

contd. on pg 38

The Musical Apple

.....by Raymond Hobbs

One of the most perplexing problems in music synthesis is locating and getting rid of those nagging little noises that somehow get into our "best" patches. The easy way out is to pass it off to a fault of the equipment, but even though some of the synthesizers out there are less than ideal in reproducing sounds, by and large they are pretty good at doing the job. Of course, we're not likely to see a good trombone sound come out of our Mockingboards, but if we recognize the limitations of the equipment we are using, and work within those limitations, we should begin to hear some very good patches. What is really needed is a little more understanding of the nature of the unwanted noises on our parts.

Which leads us naturally to *aliasing* . Aliasing occurs when the frequency that is being reproduced is more than twice the *sampling rate* . I should note here that sampling can occur in two places in synthesis. The first is when the sound is created—that is, with a sampling synthesizer. Since there are relatively few sampling synthesizers currently in use, this is not of much interest to most computer musicians. The second, however, is of concern to all synthesists—it occurs when the sound is played back.

Sounds are stored as digital representations of waveforms within the synthesizer's memory. Whether this memory is located on board the synthesizer or in a computer's RAM makes no difference. The point is, the digitized waveform must be converted to an analog signal prior to being reproduced by an amplifier/speaker system, which involves a DAC (digital-to-analog converter) sampling the waveform table in memory. The DAC can only access the wavetable so many times per second. This is its sampling rate. Obviously, in order to get any meaningful data from the wavetable, at least two points must be sampled (remember that a waveform must have both positive and negative values). If the frequency is more than twice the sampling rate, the DAC will not be able to get two values from the wavetable per cycle. The figures below will illustrate how this occurs.

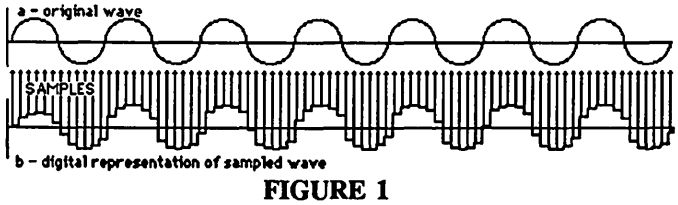


FIGURE 1

In the upper diagram, a series of waves are displayed. In the lower diagram, the sample which results from those waves is displayed. This figure represents the normal method of digital synthesis. The synthesizer stores the digitized wavetable (the lower part of the diagram), which the DAC will convert to analog sound.

In the second figure, the same sampling is shown; however, the enclosed area represents the single wavesample which would be stored in the synthesizer's RAM.

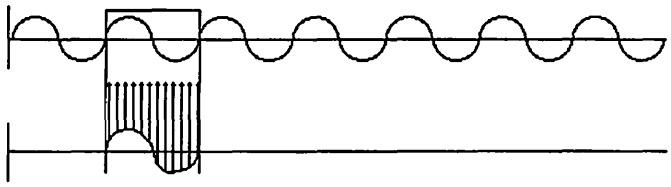


FIGURE 2

As you can see, twelve points have been sampled. The number is low because the waveform being sampled was a rather high-frequency wave. A higher-frequency wave is sampled in Figure 3, below:

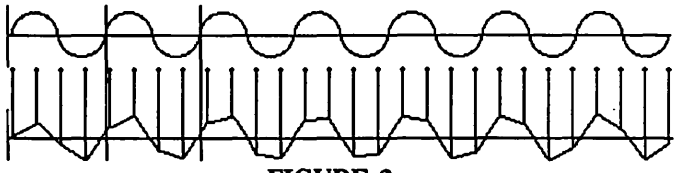


FIGURE 3

In this figure, the waveform was sampled at a considerably higher frequency, resulting in only four sampling points. Note that the digital representation of the waveform appears much cruder than the first illustration (the reproduced sound would appear much cruder, too).

In Figure 4, the waveform was sampled at too high a frequency, with the result that only one point was recorded in the wave table. If we run through this wavetable, we get aliasing.

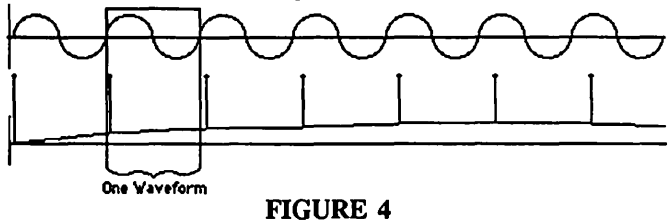


FIGURE 4

As you can see, making several iterations through this wavetable produced a waveform, but not the one that was intended. Instead, a much lower sound was produced. This is called *retrograde* sampling, and is what we want to eliminate.

Let me use another example to illustrate this occurrence, so it can be well-understood. I'm using this example because just about everybody has seen this happen: It's a western movie, and the wagon moves out and down the trail. As the wagon starts, we see the wheels moving around *forward* . Then, as the wagon picks up speed, the wheels seem to stand still for a second, then move *backward* . Here's why: The wagon's motion was recorded on film, which runs at 24 frames per second. Assume, in this example, six spokes on the wheel (keeping in mind that it is the spokes that our eyes focus on). Now, the wagon starts out, quickly attaining a speed of, say two revolutions of the wheel in each three seconds. What we see is pictured in Figure 5, below:

contd.

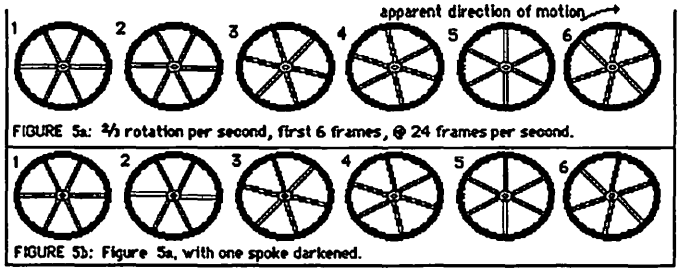


FIGURE 5

The only difference between the top and bottom parts of this figure is that one spoke has been darkened in the bottom part. The figure itself shows six views of the wheel. At 24 frames per second, that means that we have a quarter second's worth of frames. As we can see, the apparent motion of the wheel is, in fact, forward. As the wagon picks up speed, however, the view becomes more confusing, as shown in Figure 6:

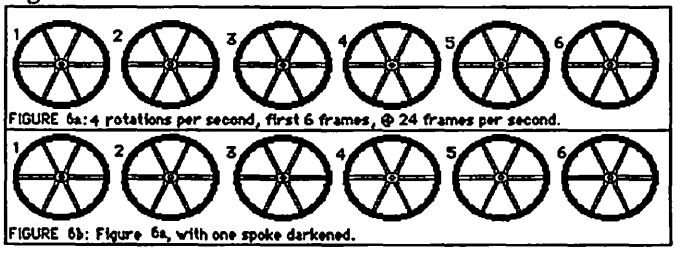


FIGURE 6

Although we can see that, at four revolutions of the wheel per second, the wheel is moving forward at a good clip (look at the bottom part of the figure), what we actually see (refer to the top part of the figure) suggests that the wheel is standing still. As the wheel picks up more speed, to five revolutions per second, the wheel appears to be moving backward, unless we are looking at the part of the figure with the one spoke darkened, which shows that the motion is really forward.

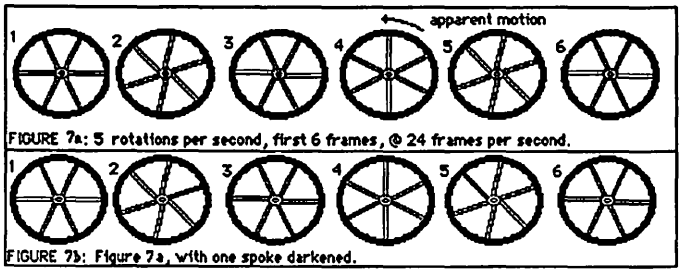


FIGURE 7

What we see is a retrograde optical illusion, resulting from the failure of the sampling rate to coordinate with the sample being taken. The same thing happens with sound samples on synthesizers.

There is really only one way to deal with aliasing in synthesis (at least, given the present state of technology). That is to make sure that the wave being sampled is less than twice the sampling rate. Almost all synthesizers include technical data including the sampling rate. However, our ears can tell us rather quickly when we have crossed the magic boundary where the sample frequency is too high.

For analog synthesizers such as the CASIOs, KORGs and ROLANDs, aliasing is something that is largely academic, since these synthesizers have basic waveforms built into them at low enough frequencies to avoid aliasing. For the digital synthesizers such as the YAMAHAs, SOUNDCHASERs and ALPHA SYNTAURIs, however, aliasing is quite real. It can be avoided by limiting the number of high harmonics. If the synthesist encounters aliasing in a patch, dropping off the highest harmonic will usually alleviate the problem. For sampling synthesizers such as the ENSONIQ or AKAI samplers, however, aliasing can creep in right at sampling time. If that happens, the only recourse is to re-sample.

Other unwanted noises can creep into our patches through incorrect looping (usually detected as a "click" or "pop") or by having a patch too complex for the resolution of the synthesizer (usually sounds like an indistinct whistling, or like background wind). We'll look into those other snakes in the woodpile another time, though.

The November meeting was held at the Dolly Madison Library in McLean, Virginia. It looks as though we will be holding a number of Virginia meetings in McLean—we still haven't found a permanent meeting site in Washington or in Maryland, so for those meetings it's still pretty much catch as catch can. By the time this article is read, however, we may very well have resolved all of our meeting locations. Meeting time will still hold constant at 1:00 P.M. on the second Saturday of the month.

Up to now, our focus has been solely on putting together beginning computer music systems, but our members have begun to amass some pretty impressive hardware and software, so we're going to be throwing in some meetings devoted to intermediate level synthesis.

Don't get left out! Give me or Gary Larson a call, so we can get you started in music synthesis! Give your creative bent a chance to let go!

Phone numbers are:

Raymond Hobbs - (301) 490-7484
Gary Larson - (202) 337-4267

THE FAMILY HOME MONEY MANAGER: Part 8

Working One's Way Through an Applesoft Program

by Brian G. Mason

Remember when we first entered this module called EOM PROCED., we said if Q% = 15 then go to line 7000, and if Q% = 16 then goto line 7100. These options from the Main Menu are to print to a printer "THIS MONTH'S SUMMARY" and the "END-OF-MONTH SUMMARY" respectively.

What you get on paper with these two options is very similar to what you get on the screen. In fact, it is best as you use this program to print these two reports out first if you have a printer before you enter option #6, "CLOSE OUT END-OF-MONTH". So let me take you to these lines before we go any further, and you can see how the printer flag, PR, is keeping track of what is happening. Type "LOAD EOM PROCED." and let us proceed.

```
7000 HOME : INVERSE : VTAB 10: PRINT "HIT
     SPACE BAR WHEN READY TO PRINT":
     VTAB 13: PRINT "<ESC> TO CANCEL":
     WAIT - 16384,128: NORMAL : IF PEEK
     (- 16384) = 155 THEN POKE - 16368,0:
     GOTO 1500
7001 MS$ = "MONTH'S SUMMARY BY
     CATEGORY":IF Q% = 16 THEN 7110
7005 POKE - 16368,0: HOME : INVERSE :
     HTAB 7: PRINT MS$: NORMAL: VTAB 10:
     HTAB 16: PRINT "PRINTING": VTAB 23:
     INVERSE : PRINT "HIT <ESC>
     TO CANCEL": NORMAL : PRINT D$;
     "PR# 1":P% = 0: PR = 1: GOSUB 7010:
     IF NOT EF THEN GOSUB 5040
```

If we are going to print the Month's Summary by Category, the user is taken to line 7000 where we encounter one of the more elusive commands in Applesoft, WAIT. This command causes a pause to occur in the execution of your program until certain conditions are met in the memory of your Apple at the bit level. We will not try to explain the operation of WAIT here. If you can understand the explanation of the operation of this command as given in your Applesoft manual, you are doing better than most of us. As we are using it here, however, we are simply looking at the keyboard strobe location of the Apple's memory. We are WAITing until any key is pressed. Then we can look at that location to see which key it was. If the user pressed <ESC>, then we reset the keyboard strobe by POKEing 0 into location -16368, and go back to the Main Menu via line 1500. Otherwise, we move along to the next line of the program.

In line 7005 we reset the keyboard strobe, print a title at the top of the screen, print the message that we are printing, and tell the user that they may press <ESC> to cancel the operation. Next we change output to the printer, set our page numbering variable, P%, to zero, and our printing flag, PR, to 1.

```
7010 P% = P% + 1: HTAB 7: PRINT MS$
7015 HTAB (20 - INT ( LEN (DT$) / 2)):
     PRINT DT$; TAB( 35);"PAGE ";P%:
     PRINT :L% = 11: RETURN
7007 GOTO 5600
```

At line 7010, we increment our page number, print the title, the date (centered), and the page number at the top of the page. Then we go to our main routine at line 5600. EF is the flag we use to indicate (when it is equal to one) that we have already printed out the end-of-the-month report once. Therefore, we do not have to request the user to input the amount in the checking account and the amount of cash on hand all over again. We can just go directly to the routine for printing out the End-of-Month Summary.

```
7100 IF EF THEN 7000
7105 HOME : GOTO 5022
7110 POKE - 16368,0: HOME : HTAB 10:
     INVERSE : PRINT ES$: NORMAL :
     VTAB 10: HTAB 16: PRINT "PRINTING":
     VTAB 23: INVERSE : PRINT "HIT <ESC>
     TO CANCEL": NORMAL : PRINT D$;
     "PR# 1":PR = 1
7112 PRINT CHR$ (9);"40N"
7115 HTAB 10: PRINT ES$
7120 HTAB (20 - INT ( LEN (DT$) / 2)):
     PRINT DT$: PRINT
7125 T% = 36: PRINT "AMOUNT IN CHECKING
     ACCOUNT ";:C = CG: GOSUB 70
7127 PRINT
7130 PRINT "TOTAL CHANGE ON HAND ";:
     C = CA: GOSUB 70: PRINT : GOSUB 10
7135 GOTO 5510
7150 PRINT CHR$ (12): PRINT D$;"PR# 0":
     PR = 0: GOTO 1500
```

This part of the program allows us to print to paper the End-of-Month Summary. I will cover only a couple things here that we have not seen before. I am not going to deal with program flow, since you should be able by now to figure that out, and I will touch on it as we go through the part of the program where we print the same information to the screen.

In line 7112, we are telling the printer to print in 40 columns. CHR$(9) is Control-I. Your printer may require a different set of instructions to define column width.

In line 7150, after we are finished printing to paper, we issue a form feed, CHR$(12), which causes the paper to move to the top of the next page, and then we redirect output to slot #0, which is the screen, and we reset flag, PR. Then we return to the Main Menu.

There, that wasn't too bad, was it. I really did not feel it was worth it to change the reports as I had developed them for output on the screen when I acquired my printer and decided I could have a permanent record on paper. So the only thing I had to do was redirect the reports to slot one and add some titles to the top of each page. So let us return now to the process of closing out the end of the month.

```
5036 R = 0: HOME : VTAB 10: PRINT "WRITING
```

contd.

```
      TO DISK THE BUDGET DATA
      FOR    MONTH OF ";M$;".": GOSUB 45
   45 VTAB 23: HTAB 1: INVERSE : PRINT
      "WAIT!": NORMAL : HTAB 1: VTAB L%:
      RETURN
 5037 PRINT OP$;FK$
 5038 PRINT WR$;FK$
 5039 PRINT R
 5040 K = MO%: FOR R1 = 0 TO NS
 5041 IF MO%(R1) < > K THEN  NEXT R1:
      GOTO 5100
 5055 IF CT%(R1) = 0 THEN  NEXT R1: GOTO 5100
 5057 IF CT%(R1) = 1 THEN  NEXT R1: GOTO
      5100
 5060 IF  NOT PP THEN  PRINT CN%(R1);",";
      DT%(R1);",";VEN$(R1); ",";AMT(R1);",";
      CT%(R1);",";R(R1)
 5061 TL(K,CT%(R1)) = TL(K,CT%(R1)) + AMT(R1)
 5062 IF CT%(R1) < > 2 THEN AE(K) = AE(K) +
      AMT(R1): GOTO 5065
 5063 INC(K) = INC(K) + AMT(R1)
 5065 R = R + 1: NEXT R1
 5100 IF PP GOTO 5170
```

We are going to use R as a counter here to keep track of how many records we write to disk, so we start by setting R equal to zero. Next we print a message on the screen to let the user know what is going on, and then the standard "WAIT" message. Next we open the file, and tell the computer we will be writing to that file. Next we print R to the file. It is zero right now, but that is OK; we need to hold a place for it here. And then we set K equal to the current month and start going through our data base to pull out those records we want to write to the file.

First of all, if the record does not belong to the current month, we skip it and get the next record. If the record is in the category "Cash" or "Checkbook Activity", we skip it, also. In other words, we are only interested in saving to this file items dealing with the current month which are in categories for which we have a budget. So now we print the record to disk (if we are not trying to print a report on paper) with the fields separated by commas.

```
 5101 PRINT CL$;FK$
 5105 PRINT OP$;FK$
 5110 PRINT WR$;FK$
 5115 PRINT R
 5135 PRINT CL$;FK$
```

The array, TL(K,CT%(), contains the total for the month for each budget category. If the category is not income, we also add the amount to the Actual Expenditures for the month (AE(). Otherwise, we add it to the Income for the month (INC(). Finally, we increment R and then go to the next record. If we are printing to paper, we skip to line 5170. Otherwise, we close the file, and then open it again. This sets the pointers back to the beginning of the file. Then we write the final value we got for R as the first record of the file.

```
 5140 HOME : VTAB 10: PRINT "CALCULATING
      TOTALS FOR EACH BUDGET CATE-
      GORY": GOSUB 45
 5170 FOR J = 0 TO NC
 5175 PD(J) =  VAL (DF$(J)):DF(J) = BUD(J) +
      VAL (DF$(J)) - TL(K,J)
 5180 NEXT J: IF PP THEN  PF = 1: RETURN
```

Our next task is to calculate the differences between what we spent and our budget. But first we have to copy the previous month's difference into the array PD(. Have we covered the use of the command, VAL, before? It is used to convert a string into a number. The RETURN if we are printing to paper takes us back to line 5035, and then to line 5250. The flag, PF, is used to remind us that the values of DF(have been altered so we will not save the budget categories as altered unintentionally. (See line 1201 of our BUDGET 1/85 module.)

```
 5230 HOME : VTAB 10: PRINT "CALCULATING
      GRAND TOTAL FOR THE MONTH"
 5250 CALL 43089: PRINT OP$;FR$
 5255 PRINT RD$;FR$
 5260 INPUT AC
 5265 PRINT CL$;FR$
 5266 PRINT "IS ";AC;" THE FIGURE YOU
      WISH":PRINT "TO USE FOR TOTAL
      CASH ON HAND": PRINT "AT THE
      BEGINNING OF THE MONTH? "
 5267 INPUT "(Y/N)";C$: IF C$ = "N" THEN 6000
 5268 IF C$ < > "Y" THEN 5267
 6000 VTAB 23: HTAB 1: INPUT "ENTER
      TOTAL CASH ON HAND AT THE BEGIN-
      NING OF THE MONTH - ";AC
 6001 GOTO 5270
```

We keep in our Budget Reconciliation File the actual cash we had on hand at the beginning of the month. However, we also give the user the opportunity to change this figure in case it has changed for whatever reason between the time last month's budget was closed out and now.

```
 5270 BC = AC:EC = AC - INC(K) - AE(K)
 5280 T% = 1:L% = 5: VTAB L%: HTAB T%:
      CALL  - 958:Q = 5285
 5285 GOSUB 26: VTAB L%: HTAB 1: INPUT
      "AMOUNT IN CHECKING ACCOUNT
      AT THE END OFTHE MONTH - ";CG:
      C = CG:L% = 7:T% = 30: GOSUB 30
   30 VTAB 23: HTAB 1: CALL  - 958: PRINT
      "DID YOU ENTER THE CORRECT AMT?
      (Y/N)";: INPUT C$: IF  LEFT$ (C$,1) =
      "Y" THEN  GOSUB 26: GOTO 70
   31 IF  LEFT$ (C$,1) = "N" AND Q = 5285
      THEN  GOTO 5280
   32 IF  LEFT$ (C$,1) = "N" AND Q = 5290
      THEN  GOTO 5290
   33 GOTO 30
```

Once we have established AC, we set the variable BC, beginning cash, equal to AC, and we calculate EC, ending cash, to be equal to the actual cash on hand at the beginning of the month minus the income (which is a negative number, so we are actually adding it) minus the actual expenditures.

The next thing we need to know is the amount in the checking account. Since this is a very important figure if we are going to have the right amounts to use to close out the month, we ask the user to verify that they entered the correct figure. Once they have, we go ahead and print it with two decimal places on the screen. Answering "no" to the question

contd.

takes the user back to line 5285 because of the value we gave to Q.

```
  26 VTAB 24: HTAB 1: CALL  - 958: VTAB L%:
     HTAB T%: RETURN
  70 IF C < 0 THEN  INVERSE :SG =  - 1:
     C =  ABS (C): GOSUB 71: RETURN
  71 D = C:C =  INT (C): GOSUB 50
  75 T$ = "." +  RIGHT$ ( STR$ ( INT ((D +
     1.0001) * 100)),2)
  78 PRINT T$;: NORMAL :SG = 1:T$ =
     STR$ (C) + T$:C =  VAL (T$): RETURN
  50 HTAB T%: IF SG =  - 1 AND PR THEN
     CALL  - 1008
  51 FOR A = 1 TO 4: IF  ABS (C) > = INT
     (10 ^ A) THEN  CALL  - 1008
  52 NEXT
  53 IF SG =  - 1 AND PR THEN  PRINT "-";
  54 PRINT C;: RETURN
5289 Q = 5290: I% = 10
5290 HTAB 1: VTAB L% - 1: INPUT
     "TOTAL CHANGE ON HAND - ";CA:C =
     CA: GOSUB 30
5291 GOSUB 26
5295 CC = CG + CA
5299 PRINT
```

Next we ask how much money the user has in cash, the total of the folding stuff and the jingling stuff they might have in their pocket or wallet. And again we ask the user to verify that they used the correct figure, returning to line 5290 if they did not. After printing that figure on the screen, we add the amount in the checking account and the amount of cash, to get a total figure for the actual cash on hand.

```
5300 PRINT "EXPECTED CASH ON HAND -- ";:
     C = EC: GOSUB 70
5305 PRINT : PRINT "ACTUAL CASH ON
     HAND -- ";:C = CC: GOSUB 70
5310 PRINT : PRINT "DIFFERENCE -- ";:
     C = EC - CC: GOSUB 70
5314 PRINT
5315 GOSUB 100
 100 VTAB 23: HTAB 1: CALL  - 958: INPUT
     "PROCEED?";C$: IF  LEFT$ (C$,1) = "N"
     THEN  POP :AC = BC: PRINT OP$;FR$:
     PRINT WR$;FR$: PRINT AC:
     PRINT CL$;FR$: GOTO 1500
 105 IF  LEFT$ (C$,1) = "Y" THEN 26
 110 GOTO 100
```

Now we print on the screen the expected cash on hand, the actual cash on hand, and the difference. This is the real test of how well the user has done keeping track of their cash flow during the month. Hopefully, the difference will be very small. It is supposed to be zero. If it is not, the user will know that they forgot to enter something during the course of the month, and will need to try to figure out what that was. Therefore, we ask the user if they wish to proceed beyond this point. If they do not, we POP out of the subroutine we are in, reset AC to the value we put in BC, and write it back into our BUDGET RECONCIL. file.

THE RANDOM-ACCESS FILE

```
5320 IF PP THEN 7000
5330 HOME : VTAB 10: PRINT "WRITING DATA
     TO DISK": GOSUB 45
5335 LE% = (20 * NC) + 40:L$ =  STR$ (LE%)
5340 PRINT OP$;FY$;"(L";L$"),L";LE%
5355 PRINT WR$;FY$;"(L";L$"),R";K
5360 FOR J = 0 TO NC
5365 PRINT TL(K,J): NEXT J
5370 PRINT INC(K): PRINT AE(K)
5375 PRINT CL$;FY$;"(L";L$")"
```

If we are printing to a printer, we GOTO line 7000. Otherwise, if we are actually closing out the end of the month, I get to introduce you to something new—the random access file.

All of the files we have been dealing with so far in this program have been sequential access files. That is, all records are written to the file, one following the other, separated by the RETURN character (CHR$(13)). With a random access file, each record is treated as a mini-sequential file. The records are not stored one after the other on the disk, but randomly on the disk, and access to a particular record does not have to proceed through all of the records from the first one, but can be achieved directly and thus more quickly.

One thing about a random-access text file, however. All records must be the same length. It makes the most sense to use a sequential text file when storing sentences in a word processing file for example because the sentences follow each other sequentially. It is only rarely and for specific reasons that you would ever want to jump to the beginning of, say, the 25th sentence. Also, sentences are all of varying lengths.

On the other hand, it makes more sense to store a data base as a random access file if you have some way of knowing which record is the 25th record, and if all the records are of the same length because they all contain the same number of fields with approximately the same number of characters in each field.

Part of the problem with setting up a random-access file, however, is determining just how long each record is. That is what we are accomplishing in line 5335. What we want to do is have a random-access file for each month containing the totals for each budget category, the total income for the month and the total actual expenditures for the month. The length of the record will be the total of the number of characters required to store this information for each month.

I am still not 100% sure of what I am doing here, but I know that I am dealing with a two-dimensional array, TL(. A two-dimensional array is like a spreadsheet with rows and columns. In this two-dimensional array, the rows are the budget categories, and the columns are the months. The way I understand the Applesoft II Basic Programming Reference Manual, copyright 1978, pages 119 and 137, a two-dimensional array takes two bytes for the name (TL), two bytes to tell the computer where to find the next variable, one byte to store the number of dimensions (in this case, two), two bytes to store the size of the second dimension (in this case, NC), two bytes to store the size of the first dimension (in this case, 12), and five bytes each to store the real numbers which are the values of each element. This is a total of 19 bytes. With a RETURN character as a separator between fields, this makes a total of 20 bytes. The one-dimensional arrays, INC(and AE(, I believe would take a total of 12 bytes each—two for

contd.

the name, two for the offset, one for the number of dimensions, two for the size of the dimension, and 5 for the value of the element.

Hopefully, someone who is more of an expert on this subject than I am can tell me if I am on the right track or not. Just to be safe, rather than just adding 26 bytes for the two one-dimensional arrays ((12 + 1) X 2) I add 40. After calculating the length of the record, we convert the value to a string.

Now we are ready to open our file, which we call FY$, YEAR'S BUDGET DATA. So we can look at a catalog of our disk and see what the length of a record is, I make that number a part of the name of the file. Also, you have to specify the length of a record when you open a random-access file by appending ",L" and the record length to the name of the file. (See p. 88 of The DOS Manual, copyright 1980, 1981.) You can see that since the length of a record depends on the number of budget categories we are using, if you change that number during the year, you will end up with two different files with different lengths. That will ruin your ability to retrieve data for the entire year. So you should stick with the same budget categories throughout the entire year if at all possible. Or else set up a couple of dummy categories at the beginning of the year with zero budgets for which you can substitute real categories later on if you want to.

Since there will be a separate record for each month, when we write to the file we just opened, we have to specify which record it is we are writing to. This is done with the ",R" and the number of the month at the end of the WRITE statement.

Now we can write our data to the file. When we go to close it, we do not have to specify its length.

```
5430 PRINT OP$;FR$
5435 PRINT WR$;FR$
5440 PRINT CC
5445 PRINT CL$;FR$
```

Our next task is to write the new value of the actual cash on hand at the end of this month (the beginning of the next) to our BUDGET RECONCIL. file. That's very easy and straight forward.

```
5500 POKE 34,0: HOME : INVERSE : HTAB 10:
     PRINT "END-OF-MONTH REPORT":
     NORMAL : VTAB 2
5501 EF = 1
5505 HTAB (20 - INT ( LEN (M$) / 2)):
     PRINT M$
5507 T% = 36: VTAB 3: POKE 34,2
5510 PRINT "CASH ON HAND - BEG. OF
     MONTH";:C = BC: GOSUB 70
5512 PRINT
5515 PRINT "INCOME";:C = - TL(K,2):
     GOSUB 70: PRINT : GOSUB 10
  10 HTAB 32: PRINT "--------": RETURN
5517 PRINT "TOTAL";:C = - TL(K,2) + BC:
     GOSUB 70
5519 PRINT
5520 PRINT "TOTAL EXPENDITURES";:
     C = AE(K): GOSUB 70: PRINT :
     GOSUB 10
5525 PRINT "EXPECTED CASH ON HAND";:
     C = EC: GOSUB 70
5527 PRINT
5530 PRINT "ACTUAL CASH ON HAND";:
     C = CC: GOSUB 70: PRINT :
     GOSUB 10
5535 PRINT "DIFFERENCE";:C = EC - CC:
     GOSUB 70
5537 PRINT
5540 PRINT : PRINT "MONTH'S INCOME";:
     C = - TL(K,2): GOSUB 70
5542 PRINT
5545 PRINT : PRINT "PLANNED INCOME";:
     C = BUD(2): GOSUB 70: PRINT : GOSUB 10
5550 PRINT "INCOME DIFFERENCE";:
     C = - TL(K,2) - BUD(2): GOSUB 70
5551 PRINT
5555 PRINT "CASH DIFFERENCE";:C = EC -
     CC: GOSUB 70: PRINT :
     GOSUB 10
5560 PRINT "AMT. TO DISTRIBUTE AMONG
     CAT.";:C = - TL(K,2) - BUD(2) - EC
     + CC: GOSUB 70
5562 IF PP GOTO 7150
5565 GOSUB 100
```

Now we get to report our status for the end of the month, how much we had at the beginning of the month, how much we took in, how much we spent, and how that varies from our budget. The subroutine at line 10 prints a line above a total figure.

When we are all done, if we have spent more than our budget called for, we will have to take that amount from some part of our budget next month. If we spent less, then we will have money that we can put in one or another of our budget categories to spend or save up next month. Here again, in line 5565, we give the user a chance to continue closing out the month or not.

```
5600 GOSUB 60
  60 IF NOT PR THEN HOME : VTAB 2
  61 PRINT "CATEGORY": PRINT
  62 PRINT " BUDGETED PREVIOUS MONTH'S"
  63 PRINT " AMOUNT DIFFER. TOTAL
     DIFFER.": RETURN
5608 IF NOT PR THEN VTAB 8: POKE 34,6:
     P% = 1
5610 FOR J = 3 TO NC
5615 PRINT CT$(J)
5617 L% = L% + 1
5620 T% = 6:C = BUD(J): GOSUB 70:T% =
     16:C = PD(J): GOSUB 70:T% = 26:
     C = TL(K,J): GOSUB 70:T% = 36:
     C = DF(J): GOSUB 70
5623 T% = 1:L% = L% + 2: PRINT
5624 IF NOT PP THEN 5629
5625 IF PEEK ( - 16384) = 155 THEN J
     = NC: POKE - 16368,0
5626 IF L% < 60 THEN NEXT J: PRINT :
     PRINT "THAT'S ALL": PRINT
     CHR$ (12): GOTO 5628
5627 PRINT CHR$ (12): GOSUB 7010:
     NEXT J: PRINT : PRINT "THAT'S ALL"
5628 PRINT D$;"PR# 0":PR = 0: PRINT :
     GOTO 1500
```

contd.

Our next step is to print some headings on the screen. If we are not printing to paper, then we set the scrolling window below those headings. Now for each budget category, we are going to show how much we budgeted for it, how much we added or subtracted from that amount in previous months to give us the amount we had to spend on this budget category this month, how much we actually spent, and the difference.

If we are printing this report on paper, we give the user a chance to quit by hitting escape. We permit 60 lines to be printed to the paper before we issue a form feed (CHR$(12)) and go back to print the heads one more time. When we are done printing to paper, we print "THAT'S ALL", issue a form feed, return output to the screen, and go back to the Main Menu.

```
5629 IF J + 1 = P% * 7 THEN  GOSUB 28:
     P% = P% + 1:L% = 1
5630 NEXT J
5635 PRINT : PRINT "THAT'S ALL.": GOSUB 28
```

If we are printing this report to the screen, we allow seven categories to be printed before halting to get a keypress.

```
5640 TEXT
5650 HOME : PRINT "YOU MAY NOW
     DISTRIBUTE ANY SURPLUS OR
     DEFICIENCY YOU HAD IN YOUR MONTH'S
     INCOME AMONG THE CATEGORIES."
5655 GOSUB 28
5660 HTAB 1: PRINT "PRESS <RETURN> IF
     YOU WISH TO PROCEED;  PRESS <S>
     IF YOU WISH TO SAVE THE DIFFERENCES
     AS THEY ARE NOW; PRESS <M>  TO
     RETURN TO THE MAIN MENU":
     PRINT "PRESS <Q> TO QUIT"
5662 INPUT C$: IF C$ = "" THEN 5670
5663 IF C$ = "S" THEN 5750
5664 IF C$ = "M" THEN 1500
5665 IF C$ = "Q" THEN  END
5666 GOTO 5662
```

The next step is to distribute any overage or shortage you had in your expenditures throughout your budget categories. After all, if you spent more in this month than you should have, then you will have less to spend next month, and you need to build that into your budget by deciding which category you will cut back on.

TEXT resets the screen to the full screen. The user is presented with a choice of keeping things just as they are, returning to the Main Menu, quitting, or proceeding. If he chooses to quit, the END command is issued, and the program stops. If he chooses to proceed, we are taken to line 5670.

```
5670 PRINT "WHICH CATEGORY  (ENTER
     CODE)":L% =  PEEK (37) + 1:T%
      = PEEK (36) + 2: GOSUB 80
  80 T$ = "":E$ = "": PRINT "?";
  81 GET E$:T$ = T$ + E$: PRINT E$;:
     IF E$ =  CHR$ (8) AND  LEN (T$) = 2
     THEN T$ = ""
  82 IF E$ =  CHR$ (8) AND  LEN (T$) > 2 THEN
     T$ =  LEFT$ (T$, LEN (T$) - 2)
  83 IF  LEN (T$) < 2 THEN 81
  84 IF  LEN (T$) < 5 AND E$ < > CHR$ (13)
     THEN 81
  85 GOSUB 26: FOR J = 0 TO NC: IF  LEFT$
     (T$, LEN (T$) - 1) = CD$(J)
     THEN  POKE 34,3: RETURN
  86 NEXT J: FOR J = 0 TO NC
  87 IF  LEFT$ (T$,2) =  LEFT$ (CD$(J),2)
     THEN 91
  88 NEXT
  89 VTAB 23: HTAB 1: CALL  - 958:
     PRINT "WHAT?";
  90 HTAB T%: VTAB L%: CALL  - 868: GOTO 80
  91 HTAB 1: VTAB 23: PRINT "IS ";CT$(J);
     " THE CATEGORY YOU MEAN?";:
     POKE 34,22
  92 INPUT "(Y/N)";C$: IF C$ = "Y" THEN
     POKE 34,3: RETURN
  93 IF C$ < > "N" THEN 91
  94 NEXT J
  95 GOTO 89
```

We have seen all this before in our previous program modules. Here we use PEEK(37) to set our current vertical tab position and PEEK(36) to set our current horizontal tab position.

```
5671 POKE 34,0
5672 GOSUB 60
5675 HTAB 1: PRINT CT$(J)
5680 T% = 6:C = BUD(J): GOSUB 70:T% = 16:
     C = PD(J): GOSUB 70:T% = 26:
     C = TL(K,J): GOSUB 70:T% = 36:C =
     DF(J): GOSUB 70
5685 HTAB 1: VTAB 24: PRINT "<C> CHANGE,
     OR <K> KEEP";: INPUT C$: IF C$ < > "C"
     AND C$ < > "K" THEN 5685
5690 IF C$ = "K" THEN 5660
```

After selecting the budget category we wish to deal with, we print some headings on the screen and then display the current values. Then we ask the user if he wishes to keep or change the figure for the difference. If he decides to leave it alone and presses <K>, he is taken back to the menu at line 5660.

```
5695 PRINT : INPUT "NEW DIFFERENCE - ";C:
     T% = 22:DF(J) = C: GOSUB 70
5699 PRINT
5700 GOSUB 28: GOTO 5660
```

Otherwise, the user is asked to type in the new difference. After doing that, it is displayed back on the screen as confirmation that the input has been accepted, and then control goes back to the menu at line 5660.

USING THE POSITION COMMAND

```
5750 FOR J = 0 TO NC
5755 DF$(J) =  STR$ (DF(J))
5760 GOSUB 300
5790 NEXT
```

When the user is satisfied with the way the budget is set up for the coming month and is ready to save the work, he is taken to line 5750. Here the first thing that is done is to change all of the budget difference values that we created in line 5175 and that we may have changed in line 5695 from numeric variables to string variables, since this is how we decided to store them on disk at the beginning. Also, we make sure the strings are all nine characters long so the

contd.

record's length does not change. We will get back to this in a minute.

```
5800 PRINT OP$;FB$
5810 PRINT D$;"POSITION";FB$;",R4"
5820 PRINT WR$;FB$
5830 PRINT DF$(0)
5840 FOR J = 1 TO NC
5850 PRINT D$;"POSITION";FB$;",R3"
5860 PRINT WR$;FB$
5870 PRINT DF$(J)
5880 NEXT
5890 PRINT CL$;FB$
5900 GOSUB 10060: CALL H2"ENTER DATA"
```

Now we do not have to rewrite all of the data to our file, BUDGET CATEGORIES. We can just change the difference fields by using the command POSITION. When we OPEN the file in line 5800, DOS sets a pointer to the beginning of the file. The command POSITION tells our Apple to count the number of fields from the pointer, and then when the WRITE command is given, to write to the file at that location.

Remember that the first field in this file is the number of budget categories we have. From this point on we have four fields for every record—the category name, the budget for that category, the code for the category, and the difference. To change just the difference, we need to move the pointer from the beginning of the file to the fourth field, hence the "4" after the "R" in line 5810. After we are finished writing to that field, we need to skip the next three fields before we begin writing again. Hence the "3" after the "R" in line 5850. Neat, huh!

The reason we have to be so careful about the length of the difference field is that if it were longer this time than last, it would write over the CR which marks the end of the record. The data in a sequential file like this one is stored sequentially, with one character following another. The way the computer knows it has reached the end of one record and the beginning of another is that it has come across a CR character. If the length of the difference field was eight characters last time followed by a CR and nine or ten characters this time, the CR would be covered up, written over, erased by the longer string of characters and the computer would no longer know where the beginning of the next record is.

The last thing we do in this program module is close the file and then return to the Main Menu.

We have come a long way this month. We will finish next month. We have only to enter the program lines for printing out the end-of-the-year reports. Save this program module by typing "SAVE EOM PROCED."

THE PRICE IS RIGHT ON.....

Apple™ Software		Macintosh™ Software	
Accounting			
AR/AP/PR(BPI) ea.	$235	MacOnewrite Sys.	$ 170
Managing Your Money	138	Back to Basics Sys.	230
Communications			
ASCII Pro	81	HabaDex w/Comm	63
Point to Point	80	MacMail Telecom	38
Database			
pfs: Workmates(f,r,p,w)	130	Filemaker Plus	180
The Data Factory	120	Reflex	71
Education			
Charlie Brown's ABC's	22	Speller Bee	51
Computer SAT (HBJ)	55	StatWorks	99
Graphics			
Fontrix 1.5	66	Cricket Graph	151
PrintMaster	26	Full Paint	70
Leisure			
G. Kitchen's Gamemaker	36	Smooth Talker 2.0	63
Goren's Learning Bridge	56	Toy Shop	46
Programming			
Enh. Terrapin LOGO 3.0	70	MacForth II	79
MacroWorks	23	Turbo Turtle	43
Spreadsheet			
HabaCalc N Graph	38	Business Filevision	235
Supercalc 3A	121	Multiplan	150
Word Processing			
PaperClip	43	Microsoft Word	140
Word Perfect 1.1	97	Word Handler	64

Introducing FILING SYSTEM™ for Apple Writer™
by MinuteWare Publishing
--List price $99.95.... Your cost $65 --

A new, unique word processing or text oriented filing system that works within Apple Writer. There is no limit to field length and you are actually using Apple Writer when entering or editing data. The entire program was written in WPL, and is completely listed, explained, and is user modifiable. (DOS or ProDOS)

Ask for a copy of our Apple or Macintosh catalog containing hundreds of other programs. Also, ask about our volume discount prices for 10 or more of any one item.

$3 shipping and handling per order (UPS-$4). MD residents, add 5% sales tax. No charges or COD's. Prices subject to change. Call for items not listed.

COMPUTER WARE UNLIMITED
P.O. BOX 1247 COLUMBIA, MD 21044
301/854-2346

GAMESIG NEWS
by Steven Payne

There was an especially good turnout for the monthly GameSIG meeting on November 7th, with many new faces. Chairman Thomas Johnston distributed some promotional materials on upcoming games, and read Accolade's letter praising Ray Hakim's review of LAW OF THE WEST in the October issue. Once again, Ron Wartow lamented the rather bleak prospects for new gaming software in the immediate future. (Perhaps this is the time to buy some of those "clas-ics" you missed earlier, now that several companies are dropping their prices.) Meanwhile, we received the following programs for review:

WARSHIP (SSI, Apple // series with 48K): A "tactical game of surface combat in the Pacific, 1941-1945";

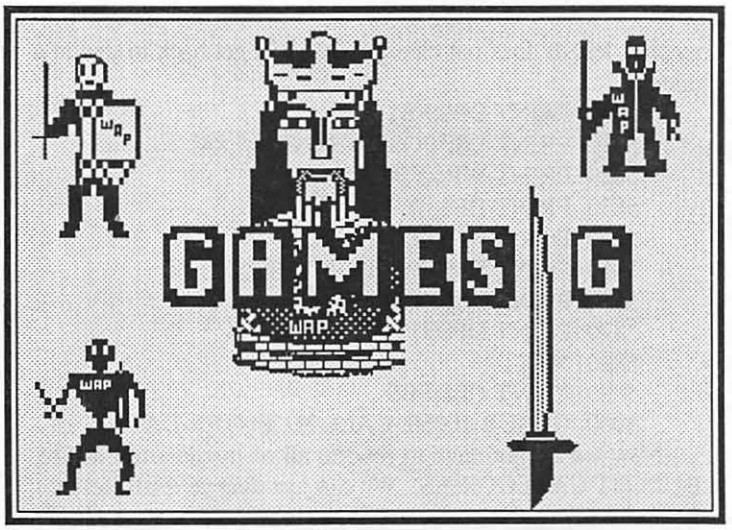
ROBOT RASCALS (Electronic Arts, Apple // series with 64K, joystick required): a scavenger hunt for 2 to 4 players, described as "half computer, half card game";

ARCTIC FOX (Electronic Arts, Apple // series): a battle against aliens who have landed in the Antarctic (sic), with 3-D model of the landscape;

SHANGHAI (Activision for the Mac, $39.95): a solitaire strategy board game, the demo of which was already reviewed by Thomas Johnston in this journal (October 1986).

Since this will be the last issue to appear in time for holiday shopping, GameSIG members, in our typically well-organized fashion, threw together the following list of Christmas recommendations, presented to the best of my ability to recall the meeting. All are for the Apple // series, unless otherwise noted:

FANTASY/ROLE PLAY:
ULTIMA IV (Origin), RINGS OF ZILFIN (SSI), SHARD OF SPRING (SSI) AUTODUEL (Origin), WIZARDRY for the Macintosh (Sir-Tech)



ALL-TEXT ADVENTURES:
SPELLBREAKER, LEATHER GODDESSES OF PHOBOS, and TRINITY (all from Infocom, for Macintosh and Apple // series)

GRAPHIC ADVENTURES:
UNINVITED (Mindscape, Macintosh)

WAR GAMES:
OGRE (Electronic Arts), BATTLEFRONT (Electronic Arts), UNDER FIRE (Avalon Hill), THE ANCIENT ART OF WAR (Broderbund, Macintosh)

SIMULATIONS:
GATO (Spectrum Holobyte, Mac and Apple // series), JET (SubLOGIC), SILENT SERVICE (Microprose), ORBITER (Spectrum Holobyte, Macintosh)

STRATEGY:
COLOSSUS CHESS IV (Firebird), BALANCE OF POWER (Mindscape, Macintosh), ELITE (Firebird), CHESSMASTER 2000 (Electronic Arts)

We hope these suggestions are helpful. Finally, our next regular meeting will be on Thursday, December 4th at 7:30 PM in the WAP Office. We look forward to seeing you there!

JET: A Review
by Thomas Johnston

I like to come home nowadays, get into my F-18 Hornet, catapult off a Nimitz-class aircraft carrier, and go sink a few enemy cruisers.

JET (Apple // series) extends SubLOGIC's flight simulation technologies to high-powered fighter craft. These are two jets, the land-based F-16 Fighting Falcon and the carrier-based F-18 Hornet. Both can fly free flight training, target-strike, or dog-fight missions.

The JET is easy to fly. Because the F-16 generates more thrust than it weighs it is considered ballistic. That means it flies in any direction you point it, including upside down or straight up. The controls are the same as for FLIGHT SIMULATOR II, either joystick or keyboard using the T, B, F, G, H cluster for elevators and ailerons. If you fly FLIGHT SIMULATOR you'll feel right at home and find it much easier.

Your screen is a Heads Up Display. Simple, uncluttered instrumentation surrounds a full field of view. Almost the whole screen is your window. There are no NAV radios or transponders, just flight controls—speed to 2.5 Mach, altitude to fifty thousand feet, radar to 30 miles. An attitude indicator and range finder are superimposed over the view, though each can be turned off. The view can be magnified from 1x to 8x for accurate aiming. You can view front, left, right and straight up (yes, you can fly upside down and try to polaroid a MiG a la Tom Cruse). You can also switch to a view from the control tower and watch yourself take off and fly.

Difficulty levels range from 0 to 9. In the 0 level you don't crash, but just find yourself taxiing along the ground. In the easier levels even a novice jet-fighter like myself can shoot down MiG-21's (just don't fly south directly at them). The onboard computer tells you when something is in range. Hit the spacebar and a heat-seeking AIM-9 Side Winder (or radar-controlled AIM-7 Sparrow) takes off after the MiG,

contd.

wherever he is. He does not even have to be in view. Sometimes when I've run out of missiles and am heading for the carrier, some dumb MiG will fly right in front of me. I can just blast him with the M-61 machine gun. In the higher levels of play, more maneuverable MiG-23's come after you. Watch our for their Atoll missiles! My favorite feature is the scoring. Each hit is marked on your rear fuselage. Look out the back window and there they are, stamped on your jet.

In target-strike, you bomb Soviet Kynda-class cruisers or land targets—fuel depots, factories, missile silos, etc. The cruisers are particularly fun to go after. From far away they are just flashing dots on your radar and out the window. As you get closer they expand into a hull shape with some vertical structures. When you are really close, just before you blast them, the outline of the whole superstructure appears. It disappears when the bomb hits, replaced by an outline of explosive force expanding across the water. You must refuel and rearm by landing back at the air base or on the carrier. Landing on the carrier is a real challenge (see my separate article).

JET is even fun without the combat. Load in the FLIGHT SIMULATOR disk as a scenery disk. I took off in the F-18 from JFK International, zoomed around the Statue of Liberty, zipped past the Empire State Building at Mach 1.5, and in 10 or 15 minutes I was in Boston landing at Logan airport. A curious thing happens if you start JET's demo after using a scenery disk. The JET demo appears in F-16 dog-fight over the FS2 World War I flying ace scenery.

If you can't land on the carrier, or the air base, or you're hit by a SAM missile, or you just run out of gas, when all else fails, you can EJECT. You see your jet fly out from under you (and maybe explode), and a parachute open above you. Switch to the view from the control tower and watch yourself drift down. The Navy is more than happy to pick you out of the water and give you a new multi-billion dollar JET.

LANDING ON THE CARRIER IN SUBLOGIC'S JET

by Thomas Johnston

If you have read *The Right Stuff* you know how hard landing on an aircraft carrier is supposed to be. Landing the F-16 on land in JET (see accompanying review) isn't too bad. No matter how bad your approach, you can pull up at the last minute, cut your engines and end up in a field next to the airport. Then taxi across the grass to the hanger to refuel and rearm.

You can't cheat like that on the carrier. If you don't approach on target and snag that trip wire, your only remaining option is to EJECT and ditch the jet in the sea. After reading JET's minimal directions and trying it myself, I thought landing on the carrier would be virtually impossible. Here's how I conquered it.

Presumably you are headed back from a mission in the south, straight for the carrier to the north. You should fly a pattern to line yourself up on the carrier runway which is at 80 degrees. Maintain altitude just above 5,000 feet. Use 2x magnification, and decrease your speed to about 75%. This will give you more time. When the carrier is almost halfway between the top of the radar screen and yourself in the center, turn left to 250 degrees. Level off.

You must master flying level so that you are no longer turning. This requires careful "single" keypresses of your banking keys. (The keyboard will give you more control than the joystick.) Look out your right window. When the carrier disappears from view, switch back to front view, and turn right to 350 degrees. Level off. Use the pause key to stop and think when you need to. Check that your altitude is still just above 5,000 feet.

Look right again. When the carrier is not quite to the center of the screen switch back to forward view and quickly turn until you are headed straight for the carrier. If you have done well you will be on or close to the required 80 degrees.

Use your range circle and point directly at the carrier. Go to 8x magnification and line up exactly on the runway to the left of the conning tower. Only use single keypresses or you will wander all over. You should then not have to make any more banking adjustments (well, maybe a few). You must line up quickly so that you can concentrate on altitude.

Apply airbrakes and lower landing gear. Reduce speed to 50%, then to 20%. If you drop too fast pull up or increase air speed, or vice versa. If you're too high you'll miss the trip wire and roll off the other side; too low and you crash into the stern.

When you can see the trip wire head for that. As you pass over the stern pull up level with the horizon, and hope you hit that wire. Good luck!

LEATHER GODDESSES OF PHOBOS: A Review

by Charles Don Hall

>OPEN METAL DOOR AND GO WEST

The metal door swings open.

"Examination Room"

A number of hideous experiments fill this room. Their obvious purpose: studies of the human anatomy, especially those parts rarely referred to in the New York Times. A pathetic-looking human is the current subject; however, even an author as fond of lascivious detail as this one would hesitate to describe it even in the LEWD mode, except to mention that it involves a lot of lubricants, some plastic tubing, and a yak.

Before you've really gotten as sick as you know you could get, one of the tall, neatly dressed Leckbandi tucks you under its arm. (The Leckbandi, who evolved in the asteroid belt, all work exclusively as security guards. This is odd, since there's not a single thing in the entire asteroid belt worth stealing.)

contd.

Unless you've been living under a rock for the past two months, you know that LEATHER GODDESSES OF PHOBOS ($39.95 list for Mac and Apple // series) is Infocom's new text adventure, billed as "a racy spoof of 1930's pulp fiction." Highlights include: a scratch-and-sniff card with 7 scents, which you are asked to smell at crucial points in the game; 3-D glasses and a 3-D comic book; an order blank for the official LEATHER GODDESSES T-shirt ($9.95) and poster ($5.95). And, of course, three levels of play: TAME, SUGGESTIVE, and LEWD. You can change from one level to another at any point during the game.

I recommend going into the LEWD mode as soon as possible. When you've finished the game, it's fun to play it over in the TAME mode to see how some of the responses change ("You have entered a plush sleeping cabin. The young woman is standing in the center of the cabin, clutching her clothes, looking shocked to see you. Naturally, you apologize and beat a hasty retreat.") SUGGESTIVE mode isn't very interesting; unlike TAME mode, it doesn't add new descriptions. It just edits the LEWD descriptions, dropping the most risque passages and toning down all the Words You Can't Say On Television (yes, there are a few of them in there). Of course, the puzzles are exactly the same in all three modes.

The program also has MALE and FEMALE modes. You don't have to type this in; the program cleverly figures out your gender by remembering which restroom you used at the beginning of the game. Again, the puzzles you have to solve are the same either way, but some of the descriptions are different; for example, if you play as a woman, then the shocked young woman in the paragraph above becomes a shocked young man.

As to the plot of the game, you start out in Joe's Bar in Upper Sandusky, Ohio, in the year 1936. After five beers and a trip to the restroom, you are kidnapped by the Leather Goddesses for research purposes. If you can escape (easier than you'd think!), then you'll find yourself wandering through such strange places as Mars, Cleveland, Venus and the Rings of Saturn in search of items that will help you stop the Leather Goddeses before they invade Earth.

IMPORTANT HINT: If you want to find out how much progress you've made towards winning, use the command "status." In most Infocom games you'd use the command "score," but this program only understands that in sentences of the form "score with x," where "x" can be pretty much anything. Naturally, you are told about using "status" on page 3,000,006 of the documentation.

The puzzles are for the most part fairly easy, except for one really tough riddle followed by an especially obnoxious maze about halfway through. I finished the game in 3 or 4 days, and most of the time was spent trying to answer the riddle. Of course, I've played so many Infocom games that I'm starting to learn how the designers think. People with less experience would get a lot more playing time out of it.

WARNING: while trying to solve the riddle, I had an unpleasant experience. At about 3 in the morning I remembered that both this game and HITCHHIKER'S GUIDE were written by Steve Meretzky. So, of course, I couldn't get back to sleep until I'd booted up the program to see if the answer to the riddle was "42." It wasn't. Try not to lose too much sleep over the riddle; it might make you irritable.

BOTTOM LINE: I found this game a welcome change from the self-righteous namby-pambyisms of BELOW THE ROOT, ULTIMA IV, and STICKYBEAR BOP III: THE NIGHTMARE CONTINUES. While the puzzles are a little on the easy side, the parser and the text are both up to Infocom's usual high standards. Even if you don't like text adventures, this one is a must-buy. That way, when people ask you what you do with your computer, you can show them this instead of a spreadsheet or worse. I give it a 10 out of 10.

THE HITCHHIKER'S GUIDE TO THE GALAXY: A Review

by David L. Porter

I was surprised when I read the review of HITCHHIKER'S GUIDE TO THE GALAXY (Infocom, Mac and many others) by Bob Oringel in the November 1986 issue of the WAP Journal, since I was expecting something more "in depth." I hope that this review will fill the gaps.

HITCHHIKER'S GUIDE is one of Infocom's many text adventures. The user plays the main character of the story, one Arthur Dent, as he wanders in a somewhat bewildered fashion throughout the galaxy. Arthur, who is incompetent to handle life on Earth, is taken into a more confusing galactic environment just before the Earth is destroyed. There he learns two important lessons: "DON'T PANIC" and "IT DOESN'T REALLY MATTER." The game has the standard text adventure format and makes no particular use of any machine's features. It tells you the situation and you tell it what to do. It then tries to figure out what you told it to do, and so forth. The parser is neither particularly good or bad. It is much better than the "verb noun" type but the supporting software in this case does not handle antecedents and its own questions as well as some other Infocom products. (There is at least one bug in it that I have found; it took me a while to decide that the message —BUG #17—was not part of the game.) The vocabulary is fairly good. It is not really up to the things you often feel you need to say to one of the other characters. It is sometimes hard to converse with something that doesn't understand the verb "to be."

In the positive vein, the adventure is true to the story. The characters and events really seem to be those that were created by Douglas Adams, the author of the original novel. It is not just an adventure set in the environment of the story.

contd.

APPLE DISCOUNTS

SPECIAL: AVATEC 300/1200 EXTERNAL MODEM $99

MACINTOSH CORNER

- SS/DD DISKS, BOX OF 10 ..... $14.00
- SS/DD DISKS, CASE OF 50 .... $60.00
- 10 DISK STORAGE BOX $2.50
- 36 DISK STORAGE BOX $9.00
- DS/DD DISKS, BOX OF 10 ..... $16.00
- DS/DD DISKS, CASE OF 50 .... $70.00
- IMAGEWRITER CABLE $19.00
- MODEM CABLE $19.00
- IMAGEWRITER RIBBON ..... $9.00 ⊙

5¼ INCH DISKETTES & STORAGE

- SS/DD, BOX OF 10 ..... $5.50
- SS/DD, PAK OF 25 ..... $13.00
- SS/DD, CASE OF 100 ..... $46.00
- SS/DD, CARTON OF 500 ..... $205.00
- 2-NOTCH/DS/DD, BOX OF 10 .... $6.50
- 2-NOTCH/DS/DD, PAK OF 25 ... $15.00
- 2-NOTCH/DS/DD, CASE OF 100 ..... $54.00
- 10 DISKETTE CASES ..... $2.25 EACH 5 for $10.00

(SPECIFY COLOR CHOICES: BEIGE, BLACK, BLUE, GREEN, GREY, RED, YELLOW)

- 75 FLIP TOP DISK CASE $11.00

PRINTERS

- PANASONIC 1080i, 120 CPS $239.00
- CITIZEN 120D, 120 CPS $219.00
- CITIZEN MSP-10, 160 CPS $299.00
- CITIZEN MSP-15, WIDE $419.00
- PANASONIC P3131, LQ $289.00
- NEC P6, LQ $495.00
- OKIMATE 20 COLOR $209.00

PRINTER ACCESSORIES

- 2400 SHEETS OF PAPER $29.00
- STANDARD PARALLEL INTERFACE $49.00
- GRAPHICS PARALLEL INTERFACE CARD $59.00
- MICRO BUFFER IN LINE $89.00
- PRINTER STAND $14.00
- SWITCH BOX, 2 WAY ..... $39.00 *
- SWITCH BOX, 4 WAY ..... $59.00 *

DISK DRIVES

- FLOPPY DRIVE $109.00
- CONTROLLER $49.00

*** DENOTES NEW PRICE**
⊙ DENOTES NEW ITEM

MONITORS

- 12-INCH COMPOSITE $79.00
- HI RES COMPOSITE $119.00
- COMPOSITE COLOR $139.00
- RGB COLOR $299.00

MODEMS

- AVATEC 1200 EXT. $99.00
- 1200 EXT. PLUS PHONE $169.00
- US ROBOTICS 1200 EXT. $219.00
- PROMETHEUS 1200A INT. $269.00
- US ROBOTICS 2400 ..... $369.00 *

SOUND & VIDEO DEVICES

- MUSIC SYNTHESIZER $149.00
- COMPUTEREYES $109.00

CHIPS

- EPROMS 2716/2732/2764 ..... $4.00
- EPROMS 27128/27256 ..... $7.00
- 64K, SET OF 8 ..... $9.60
- 256K, SET OF 8 ..... $26.40

GENERAL ITEMS

- SURGE PROTECTOR $9.00
- 6-OUTLETS WITH SURGE PROTECT $25.00
- CABLE GENDER CHANGER $9.00
- CABLES (S OR P) $19.00
- GLARE FILTER ..... $29.00 ⊙

COMPATIBLE COMPUTERS

- LASER 128 ..... $395.00
- VF PC, APPLE & IBM COMPATIBLE $1080.00
- VF PC, IBM COMPATIBLE $725.00

GAME I/O DEVICES

- CH MACH II JOYSTICK $33.00
- CH MACH III JOYSTICK $39.00
- I/O PORT EXPANDER $25.00
- 9-16 OR 16-9 ADAPTER $9.00

SLOT EXPANSION

- 16K RAM CARD (FOR II+) $69.00
- 64K RAM CARD (FOR II+) $159.00
- MULTI-RAM, 64K MEMORY ... $119.00
- MULTI RGB, 640K MEMORY $159.00
- 320K MEMORY $149.00
- 512K MEMORY $179.00
- SERI-ALL $99.00
- SLOT 3 CLOCK $65.00
- Z-80 BOARD $39.00
- ACCELERATOR $229.00
- EDD 4 PLUS EXACT BIT COPY BD $99.00
- MULTIPLE-SLOT CHASSIS $149.00
- SINGLE-SLOT EXTENDER $29.00
- QUICK-LOADER PROM BD $149.00
- PROM BURNER $119.00

SPECIAL PERIPHERALS

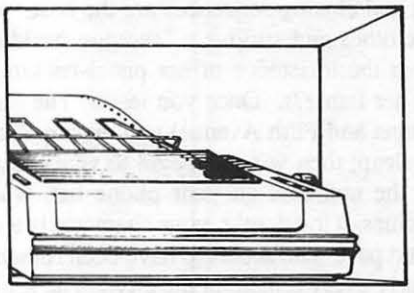
- COOLING FAN WITH SURGE PROTECT $39.00
- POWER SUPPLY $69.00
- SHIFT KEY MOD KIT $8.00
- RF MODULATOR $39.00

APPLE SOFTWARE

- COPY II + ... $29.00
- ESSENTIAL DATA DUPLICATOR $35.00
- PLUSWORKS (RUNS APPLEWORKS ON II+) $19.00
- "WRITE CHOICE" WORD PROCESSOR $39.00
- PRINT SHOP $39.00
- TURBO PASCAL, CP/M $56.00

APPLE IIc CORNER

- SECOND DISK DR FOR IIc $119.00
- HOTLINK TO PARALLEL PRINTER $55.00
- GRAPPLER C $95.00
- PRINTER OR MODEM CABLE $20.00
- DISK DRIVE CABLE ADAPTER $15.00
- 9-16 GAME I/O ADAPTER $9.00
- MULTI-RAM CX, 256K $239.00
- MULTI-RAM CX, 512K $269.00



(301) 652-4232

VF ASSOCIATES

8231 WOODMONT AVENUE, BETHESDA, MARYLAND 20814

STORE HOURS: Monday through Thursday: 12 noon - 8 p.m.
Friday: 12 noon - 6 p.m. ■ Saturday: 11 a.m. - 5 p.m.

CALL FOR OUR FREE CATALOGUE!

UPS SHIPPING: $4.00 per order plus **$6.00** per printer or monitor. Computers: **$30.00.**

10% surcharge per 30 days on purchase orders.

PLEASE NOTE! PRICES CHANGE OFTEN! PRICE ON DATE OF PURCHASE APPLIES.

LONG-DISTANCE: CALL TOLL-FREE FROM ANY TONE-GENERATING PHONE: DIAL 950-1088; (IF YOU RECEIVE A RECORDING, DIAL 800-446-4462 INSTEAD); WAIT FOR TONE; DIAL 363-1313.

Depending on which way your sense of humor runs, the story can be very amusing. (I find it so.) One of the items in the adventure is the "guide" itself. This device acts like an encyclopedia. You spend a lot of time looking up things in it. (I suggest that you have "**consult guide about**" on your clipboard so that you just have to **Control-C**, the topic, and hit return. It saves a lot of typing, spelling errors, etc.) The guide comes with footnotes (which also must be looked up) and everything. As Mr. Oringel pointed out, the game allows you to save multiple states of the game and to restore it to any of these states at any time. This is an important feature to counterbalance one of the game's drawback mentioned below.

On the negative side, the adventure is true to the story. (Yes, I did say that this was a positive aspect too!) You must be Arthur Dent and do what he would do or you will never get anywhere. If Arthur doesn't know which end of a screwdriver to stand behind, neither do you. It is almost necessary to have read the book or seen the series on PBS TV. The adventure is the most linear of any I have seen from Infocom. The story is one long but *single* path. (There are a few exceptions.) This is prevented from becoming a major drawback only by frequent use of the "save" feature mentioned above. Even then many of the actions, while amusing the first time, are tedious. You will get tired of typing "**wait.**" Finally, you never seem to have a goal to all this. (Then again, neither did Arthur.)

In conclusion, this is the type of game that develops a cult following and is recommended for its humor. If, however, you really love adventure games, I would leave this one low on your Christmas list. I would never give it to someone as their first game unless they first read, and loved, the book. If you do, be sure to tell them not to panic because it really doesn't matter.

AMNESIA: A Review
by Steven Payne

AMNESIA is a new all-text adventure from Electronic Arts which covers four disk sides, includes a 1500-word vocabulary and lists for $44.95 (for the Apple // series with 64K). Its plot might best be described as a collision between the computer games of DEJA VU: A NIGHTMARE COMES TRUE and FAHRENHEIT 451. As in the former, you awaken at the beginning with no recollection of who or where you are, only to discover that you are wanted by the police for murder, and must thread your way through encounters with various colorful characters who seem to remember you and have their own (friendly or unfriendly) designs on your fate. As in the latter, the game is set in New York City, though in this case you are not confined to a futuristic Fifth Avenue but have the whole of Manhattan to explore, with its restaurants, phone booths, and nearly the entire subway system. The package comes with a street and subway map of Manhattan, a tourist guide, and a sketchy list of phone numbers you will eventually need to call in order to win the game.

It won't give away too much of the plot to say that the opening and closing sequences are the best. Your first task is to find clothes and survive a "shotgun wedding" to a strange woman at the insistence of her pistol-packing redneck father (or*is* he her father?). Once you leave "The Sunderland Hotel" (53rd Street and Fifth Avenue) you must quickly find places to eat and sleep; then you can begin to visit locations corresponding to the numbers on your phone list, where you receive further clues. (Incidently, your character is a man with a very checkered past, who seems to have been romantically involved with nearly every female in the city.) The score is tallied continuously by combining points earned as a detective, as a character, and as a survivor. If you persist, you ultimately reach a bloody confrontation where all is revealed in a far-fetched but engaging solution. However, the game also provides less dramatic alternative endings; by making certain "wrong" choices you might end up a Trappist monk or a sheep rancher in Australia (high marks for survival but not for detection).

The story is by noted mystery and science fiction author Thomas M. Disch, who won the prestigious Campbell Award in 1980 for *On Wings of Song* and has written for such journals as *The Paris Review, Harpers Magazine,* and *Rolling Stone.* To be honest, I might not have guessed the author's literary credentials if the packaging had not emphasized them—an adventure game obviously has different requirements than a novel—but the text is nonetheless clever, exciting and very well written.

The main limitation of AMNESIA is that it has an erratic pace and can play very slowly. At least with the review copy, I seemed to spend an inordinate amount of time swapping disks. It took *three* swaps just to leave the hotel and head south the first time, and at least a minute every time I wanted to restart or restore a saved game. Moreover, this adventure is not particularly "interactive." At certain points you are given screen after screen of text, with little opportunity for input; the rest of the time is spent mainly wandering around New York. A recent reviewer in A+ (December, 1986) considered this an asset; for me it was a shortcoming, since I would have preferred more puzzles. In any case, with access to all of Manhattan it seems a shame that relatively few locations are described or have anything worth visiting. Besides, since it is so easy to die if you stray far from places of food or rest, and so hard to restart, there is little incentive to explore the city freely. I also stumbled across several apparent bugs. More than once, for example, I was unable to use a pay phone because the program demanded a quarter which it then declared I had already inserted. To get out of this loop, I would leave the booth and immediately re-enter, only to find that the phone had meanwhile been vandalized (perhaps by a "microscopic fleet" of juvenile delinquents who managed to slip by me?).

I hope that Electronic Arts will continue to develop its new line of text adventure games. As its first entry in this field, AMNESIA is certainly promising, and I suspect with further refinements could become first-rate, much smoother and faster. All it needs is the technology to match the superior quality of its prose. (But please, please, please give us the option of using two disk drives next time!!)

AMNESIA: Another Review
by Bob Oringel

It is perhaps unfortunate in life that one always compares things which are similar. And in this comparison, one thing (in this case, one program) stands out as better prepared or better organized than another.

I recently reviewed **The Hitchhiker's Guide to the Galaxy**, a game program of interactive fiction. I truly enjoyed playing "Hitchhiker", so when another interactive fiction game became available, what better idea than to try it as well.

Amnesia, by Electronic Arts, is based on a story written by Thomas M. Disch, a well-known and well-read science fiction and mystery author. The game was programmed by Cognetics Corporation.

Amnesia is a good adventure story game which moves along at a rapid and interesting pace. The player has plenty of input to a story which has a 1700-word vocabulary (according to the publisher) and which fills the four sides of two diskettes. A number of physical aids to help solve the game are included in the package, including a well-written manual. Hints to solving the game are included in the manual, cleverly disguised so that they will not be read unless the player wants to read them. A nice feature of the game is the use of Ctrl-R to repeat a command instead of retyping it. An enjoyable story-game, except ...

Here, then, is where the comparison begin. In my opinion, Cognetics could have done a better programming job. Like Hitchhiker, Amnesia purports to permit using your printer to print a hard copy of whatever text is on screen. I found this feature quite valuable when playing Hitchhiker, so of course I tried it with Amnesia. I tried it several times to no avail. The command summary card indicates that if one has problems with this feature, then one should adjust the switch settings on either the printer or the interface card. Hah! It was worse—the command to turn the printer on hangs up the program, and it's back to square one to play the game.

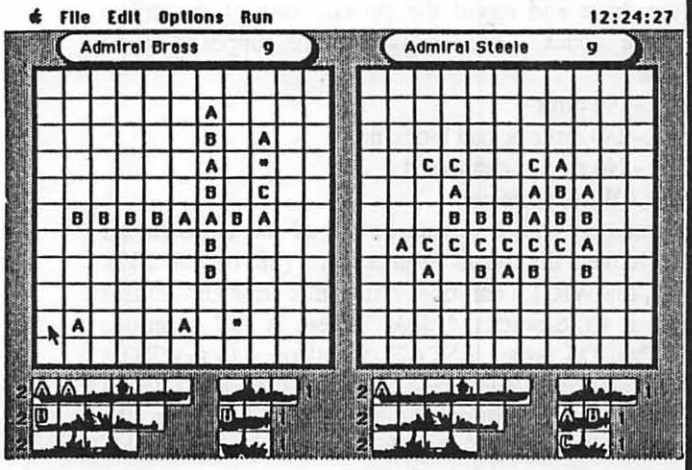
Another feature of Amnesia permits Saving and Loading games in progress to or from a data disk. This feature is really necessary unless the player has unlimited time to spend at the game. The manual indicates that if one saves a game to a numbered area where a previous "Save" was located, then the previous save would be overwritten. Great, just like my word processor. Perhaps that is so, but when I tried this feature several times, the saved game would not reload on the next attempt.

The bottom line on Amnesia, then, is good game, flawed programming.

BATTLE STATIONS!

A Game Of Strategy For The Macintosh

by M.L. Samford and W.P. Worzel



Battle Stations! is a game of strategy for one or two players. You command a fleet trying to hunt down and sink the enemy's fleet before he sinks you! Each ship sunk reduces his firepower but you must systematically plot your fire to discover where he has deployed his ships. From giant aircraft carrier to silent submarine, you hunt the enemy on the high seas. But beware! the hunt is on for you too!

TIMELINE LTD

SIMULATION DESIGNERS AND PUBLISHERS

P.O. BOX 60
YPSILANTI, MICHIGAN 48197

UNIDISK 3.5 STATUS BUG

by Tom Vier

The STATUS Bug

It's not a Yuppie affliction!

In the Fall of 1985, Apple Computer introduced the first 3.5" drive to the Apple II line. It was the UniDisk 3.5, which has turned out to have a major bug in it's interface firmware, both in the slot card and in the //c 3.5 upgrade ROM.

The bug is in the ProDOS STATUS call, which is one of four calls that can be made to the ProDOS entry point of any ProDOS compatible drive. Whenever ProDOS wants to access a disk device, it looks up the memory address of the interface driver for that device in a table in the Global Page at $BF10-BF2F. This table is filled in by ProDOS during the boot process when it scans the slots for interface cards. When it finds a disk device signature in a card's ROM, it looks at the last byte ($CsFF) and uses it as the entry point for that card's ProDOS driver. If it is zero, the Apple Disk II floppy driver is used. This driver is loaded into RAM during boot.

The disk driver, used by devices such as hard disks, is a program contained in the ROM on the interface card which processes the commands sent by ProDOS to the drive and causes the transfer of data. The command and parameters are passed to the driver in a table at $42-47. The four commands ProDOS uses are STATUS, READ, WRITE, and FORMAT. The one we are concerned with, STATUS, should return the size of the drive and report the current state of the drives through error codes. The codes that are supposed to be returned are:

$00 - No error
$27 - I/O error or bad block no.
$28 - No device connected
$2B - Write protected

Unfortunately, the firmware author of the UniDisk 3.5 driver overlooked the Write Protect error (2B or not 2B?). Thankfully, the WRITE call does return this error and refuses to write to a write-protected disk. There is still a serious problem. ProDOS issues a STATUS call prior to a WRITE call. If it doesn't receive an error, it does some some internal housework before executing the WRITE. So when the WRITE call fails, ProDOS is left in a bad, unrecoverable state!

If you should accidentally try to save to a write-protected disk while using ProDOS, you should replace the disk with a spare, unprotected, disk. Then do your update to that disk and reboot ProDOS. Hopefully, this will prevent any loss of your data.

Supposedly, Apple has produced a fixed ROM for the new UniDisk 3.5s now being produced. I have not seen any of the corrected drives in stock, as of yet. The "new, user-friendly" Apple has no plans as far as I know to retrofit the new ROM, Version 1.1, into any drives already produced and sold. Apple knew about this bug prior to the UniDisk 3.5's announcement and shipping. I would advise any owners of this drive to contact their dealers and Apple to find out what the current status of this situation is.

I have also included the listing of a short program that checks your drive for the STATUS bug. It's short for easier typing, so be careful when using it. It doesn't have any mistake-proofing built in. You will also find this program in the Library of the Apple II Hardware Board on the Pi's TSC (BBS) and in the DL2 area in the Apple Conference on CompuServe.

Listing 1

```
10  REM
20  REM * STATUS BUG CHECKER *
30  REM      BY TOM VIER
40  REM
50  GOSUB 1000: REM SHOW MESSAGE
60  GOSUB 2000: REM  SET UP MLI
70  PRINT : INPUT "CONTINUE? Y/N: ";A$
80  IF A$ < > "Y" AND A$ < > "y" THEN
    PRINT : PRINT "ABORTED.": END
90  PRINT
100 INPUT "INTERFACE SLOT: ";SLOT
110 INPUT "         DRIVE: ";DRIVE
120 PRINT
130 UNIT = SLOT * 16
140 IF DRIVE = 2 THEN UNIT = UNIT + 128
150 POKE 769,UNIT
160 CSLOT = 192 + SLOT
170 ENTRY =  PEEK (CSLOT * 256 + 255)
180 IF ENTRY < > 0 THEN 210
190 PRINT "APPLE'S FLOPPY DRIVER
    RETURNS THE      "
200 PRINT "STATUS CORRECTLY. NO
    NEED TO TEST IT.  ": GOTO 70
210 POKE 785,ENTRY: POKE 786,CSLOT
220 CALL 768: REM     DO STATUS CALL
230 CODE =  PEEK (791)
240 IF CODE < > 0 THEN 290
250 PRINT "EITHER YOU HAVE A DEVICE
    THAT DOES NOT "
260 PRINT "RETURN THE WRITE-PROTECT
    STATUS ON THE "
270 PRINT "PRODOS STATUS CALL OR YOU
    HAVE SELECTED"
280 PRINT "A VOLUME THAT IS NOT
    WRITE-PROTECTED.  ": GOTO 70
290 IF CODE = 43 THEN  PRINT "YOUR
    DEVICE IS CORRECT!": GOTO 70
300 IF CODE = 40 THEN  PRINT "DEVICE
    NOT CONNECTED!": GOTO 70
305 IF CODE = 41 THEN  PRINT "NO DISK
    OR NO VOLUME MOUNTED!": GOTO 70
310 PRINT "UNRECOGNIZED ERROR!
    THAT'S A BUG TOO!": GOTO 70
1000 REM
1010 REM  GREETINGS
1020 REM
1030 PRINT  CHR$ (21)
1040 HOME : INVERSE
1050 PRINT "         -STATUS BUG
     CHECKER-         "
1060 NORMAL
1070 PRINT "  THIS PROGRAM WILL
     CHECK THE PRODOS  "
```

contd. on pg 36

CUMBER'S CORNER

by James F. Cumber,Jr.

Random Ramblings of an Apple Pioneer...

More on the Apple //GS: "Old" Software - Does it Run?

With the advent of the new Apple IIGS, the main question to old-time Apple][(and][+, //e and //c) owners is: Will it run my favorite software? Apple says it will run 95% to 98% of the existing 10,000+ programs previously written for the Apple II series—the question is, does your favorite program fall in the lucky percentage or the "also-rans" of Apple software? Because I am quite interested in the IIGS (so much so that I am in the process of becoming a certified developer—which reminds me: has anyone thought of testing the waters about a Developers' SIG - dSIG, for short?), I have become vitally concerned with this question.

In pursuit of this question, I enlisted the aid of the folks at Clinton Computer's Alexandria Store to test several well-known software programs on their GS. Many thanks for their cooperation! The programs I tested run the gamut: three word processors, a spreadsheet, a datafile manager, a spelling checker, a programmer's utility disk, a couple of disks containing Applesoft programs I wrote myself, and a commercial game. The results were interesting.

THE PROGRAMS

My Apple II is vintage 1978, with a 16K Ramcard (64K total memory), two 143K disk drives, monitor, and a wide-carriage Imagewriter. Being an older machine (not one of your newer, hot-shot //e types), my Apple had, until recently, VERY limited upgrade paths available. It also could stand a speed increase in some applications (as we'll see later) and the question could be asked why one should hang new "bells and whistles" on a machine that is, essentially, 10-year-old technology? I had waited patiently for several years for the rumored "//X" to arrive...and was rewarded by the GS! This lack of large memory also meant that I couldn't use a lot of improved software intended for the //e and //c, including such programs as AppleWorks. Therefore, I am one of those people who uses more than one word processor, depending on what I need to do. In fact, I use three word processors.

PIE WRITER: The Hayden "PIE Writer" is probably the oldest of the "high grade" word processors, having made its appearence around 1979 or 1980. It was originally developed by Programma International, and (under its original name of "Apple PIE") was the flagship of their software line. Unfortunately, the "Programma Improved Editor" (what "PIE" stood for) was about the only really high-grade software Programma was marketing: the company went bankrupt, and Hayden bought out the rights. The version I have is the 1983 Hayden product. It really hasn't changed much since PIE was originally developed by Programma. PIE Writer gives complete, professional control of text output. It also allows one to print multiple copies of a document, and to link documents and print them one after another, automatically, and this is its major advantage over Apple Writer II. It allows almost 21.5K of document to be created at a time on a 64K system.

APPLE WRITER II: This 1981 favorite by Paul Lutus is quite similar to PIE Writer. However, it allows larger individual documents, and its Word Processing Language (WPL) allows some unique options for document work. One of these options that I have used is the ability to create a WPL "program" that will count the individual occurences of a word (or several words counted individually and simultaneously) within the document. This capability makes AW II almost ideal for stylometric analysis.

THE WRITE CHOICE: This recent entry by Roger Wagner (who was a pioneer in the creation and popularization of 6502 Assembler programs on the Apple II) comes with an imaginative touch typing tutor, called "Tut's Typer". It also allows documents (which have about the same maximum size as on the PIE Writer) to integrate graphics in their make-up, if one has the companion "Printographer" program. Of the three processors, this one is the least expensive, and seems to be the most generally versatile.

SENSIBLE SPELLER IV: This popular spelling checker program is what I use.

VISICALC: This is the oldest spreadsheet program available for the Apple, and has been credited with really establishing the Apple as a serious computer in 1980. While it is not presently available, there are many thousands of them still out there. It is written in assembly language.

PFS: The "Personal Filing System" has three parts: PFS File, PFS Report, and PFS Graph. It is a very simple, but fairly powerful datafile manager that is also quite easy to use. Its ease of use and general utility has made it popular as a home data manager.

APPLE MECHANIC: This popular programmers' utility (from Beagle Brothers Software) has become rather popular. It is quite useful in developing software.

SELF-WRITTEN SOFTWARE: Programs written on my own include an astronomy master program and one of a series of programs on nuclear weapons effects. The nuclear program is moderately complex: one section of it requires reiterative computations that home in on a desired value. This can take as long as two minutes to do its computations, with the average being about one minute and thirty-eight seconds per run.

THE WARP FACTOR: This SSI game is not the normal arcade game. It is a moderately complex "operational" level simulation of starship combat. It is written in Applesoft, and can execute quite slowly on complex simulations.

THE TEST RESULTS

In the course of the tests, I discovered that the GS will load disk-based Integer BASIC into the appropriate part of memory. One other thing you have to remember with the GS

contd.

is that some programs will require the use of the "caps lock" key to get proper responses from the older software designed for systems without an active shift key.

Most of the software worked as always, and benefited from the speed-up of the "fast" mode on the GS. This being the case, I will concentrate on the unusually good and the unusually bad performers.

Sensible Speller IV boots and seems to work as usual. The PFS series works as always. Because both these programs are generally "disk read" intensive, the speed-up is not as noticeable. My astronomy program was also faster, and worked quite well, thank you. VisiCalc worked just like always, but even its assembly language benefited from the 65C816 speed increase. Apple Mechanic seemed to work as advertised, again with an increase in speed—though I didn't get the chance to try all functions.

I was most impressed by the speed-up of my nuclear program: a 1:38 run was reduced to 36 seconds—an improvement by a factor of 2.72 over the original run!

Apple Writer II (1981 version) absolutely REFUSED to boot! I couldn't get it to go from either a "warm" or "cold" boot. I do not know why this is so.

My 1983 PIE Writer would boot, but once I got into "Edit" mode, I could NOT get out without shutting down the machine—which, of course, prevents saving the data! The GS somehow does not recognize the "Shift-Control-P" command that exits the editor! Again, I know not why this should be so.

Write Choice (version 5.9.19) works, but you must be careful to have the "caps lock" key engaged if you are in II+ mode. You can run the "Helper" program (by the usual press of the "Escape" key while booting) on the GS and reconfigure it as a //e or //c machine with the 80-character card and active "shift" key. This program benefits well from the speed increase: I sometimes find myself overrunning the text buffer in word processing programs by typing faster than my system will accept characters. The speed increase afforded by the 65C816 ELIMINATES this problem for me on both Write Choice and while trapped in the editor of PIE Writer—for all the good it does you in the Hayden program. Remember, Roger Wagner's "Write Choice" was the only one of the three word processing programs that I was able to get to function correctly.

Finally, the GameSIG people will find the response of "Warp Factor" of interest. As those worthies are probably aware, "Warp Factor" is a very good and interesting (not to mention challenging) space war simulation in which you can command the starship "Enterprise" against the Klingons, or the Imperials of "Star Wars" or even the Cylons from "Battlestar Galactica". Its only real short-coming is that it is INCREDIBLY SLOW! While it was never meant to be an "arcade" type "shoot 'em up", the speed at which its Applesoft pro- gramming simulates the cerebral aspects of space naval combat sometimes tries the patience of even the most ardent devotee! The GS is the best thing that ever happened to "Warp Factor"! Even the set-up procedures exhibit a VERY CONSIDERABLE improvement in speed! Once the orders are given to the program, a one minute and thirty-eight second "fleet orders" phase can be reduced to only 50 seconds on the faster GS. A time from "execution phase" to "combat phase" of two minutes and forty-one seconds can be reduced to an .ul ASTOUNDING thirty seconds—this represents a speed-up factor of 5.36 times! Obviously, something is going on in the program that benefits more than average from the 65C816 processor speed. In short, the GS puts "The Warp Factor" into Warp Speed!

In conclusion, there are problems with some programs, including some popular high-grade productivity software. In fact, I will have to find a new "pro-grade" word processor to replace the PIE Writer/Apple Writer II types that won't run, and AppleWorks will probably be able to fill the role for doing Stylometry research—if it is allied to the new "Macroworks" program from Beagle Brothers. The benefits of the GS, however, are so great that these other problems are relatively minor. I still intend to become a certified GS developer, and do all those things I have wanted to do on the II+, but couldn't because of lack of capacity. The "New II" is potentially the one that will bring the II series back into serious competition with the products of "Big Blue".

APPLE II LIVES!

Unidisk 3.5 Status Bug contd. from pg 34

```
1080 PRINT "  DEVICE OF YOUR CHOICE
      FOR FAILURE TO "
1090 PRINT " RETURN THE WRITE-PROTECT
      STATUS ON THE"
1100 PRINT "  STATUS CALL. PLEASE
      CONFIRM THAT YOU "
1110 PRINT "    HAVE SELECTED A LOCKED
      VOLUME.    "
1120 RETURN
2000 REM
2010 REM  DRIVER INTERFACE
2020 REM
2030 POKE 768,169: POKE 769,112: REM      LDA #$70
2040 POKE 770,133: POKE 771,67: REM       STA $43
2050 POKE 772,169: POKE 773,0: REM        LDA #$00
2060 POKE 774,133: POKE 775,66: REM       STA $42
2070 POKE 776,133: POKE 777,68: REM       STA $44
2080 POKE 778,133: POKE 779,69: REM       STA $45
2090 POKE 780,133: POKE 781,70: REM       STA $46
2100 POKE 782,133: POKE 783,71: REM       STA $47
2110 POKE 784,32: POKE 785,10:
      POKE 786,199: REM                   JSR $C70A
2120 POKE 787,141: POKE 788,23:
      POKE 789,3: REM                     STA $0317
2130 POKE 790,96: REM                     RTS
2140 RETURN
```

— Operant Systems —

— HARDWARE —

DOT-MATRIX PRINTERS—
- Epson FX-85 (160 cps, 32 cps NLQ mode)..... 435
- FX-286 (200 cps wide carriage upgrade of FX-185). 629
- LX-80 (100 cps, 16 cps NLQ mode)..... 279
- LQ-800/LQ-1000 (180 cps, 24-pin NLQ mode).... 629/859
- Okidata 192-Plus (200 cps, NLQ mode)..... 369
- 193-Plus (132 column version of above)..... 549
- 292/293 (200 cps draft, 100 cps NLQ, 18-pin) (call)
- Toshiba 321 (216 cps draft, BEST print for the buck)... 519
- 351 (288 cps, wide carriage version of above). 1099
- NEC P5/P6/P7 Pinwriter (24 wire high-quality matrix) (call)
- Citizen MSP 20 (200 cps matrix, Epson-compatible)..... 349
- Panasonic 1091 (120 cps, Epson-compatible "Best Buy").. 259
- 1080 (100 cps, as above)..... 219

DAISYWHEEL & LASER PRINTERS—
- Epson DX-20 (20 cps daisywheel, Diablo compatible)..... 369
- Citizen Premier 35 (35 cps, fastest for the money)..... 499
- Canon Laser Printer (8 pages/min, Diablo compatible).. 1995
- Silver-Reed 800 (40 cps, Diablo-compatible)..... 759
- 600 (25 cps daisywheel, wide carriage)..... 569
- NEC Elf (16 cps, par & ser interface, NEC/Diablo emul). 419
- 8830 (55 cps daisywheel, built like a tank)..... 1175
- Diablo 635 (55 cps daisywheel, replaces 630 model)..... 825
- Qume LetterPro 20 (20 cps daisywheel)..... 449

MODEMS—
- Hayes Smartmodem 1200A (1200/300 card for IIC+/IIe)...(call)
- Micromodem IIe (300 baud card for IIC+/IIe w/sft). 145
- Smartmodem 2400 (2400/1200/300 baud, RS-232)..... 599
- Smartmodem 1200 (1200 baud, RS-232, auto-dial)... 389
- Smartmodem 300 (300 baud, as above)..... 145
- Novation Apple-Cat II (300 baud, 1200 upgrade avail)... 209
- Prometheus Promodem 1200 (1200/300 baud, RS-232)..... 289
- Promodem 1200A (1200/300 card w/ software).. 209
- US Robotics Password (1200/300 baud, auto-dial/answer). 229
- Courier 2400 (2400/1200/300, autodial/ans). 395
- Anchor Automation Express (1200/300 loaded w/ features) 219
- Volksmodem 12 (1200/300 baud, RS-232) 139
- Lightning 24 (2400/1200/300, RS-232). 325
- ZoomModem IIe Plus (300 baud card w/adv software)..... 119

DISK DRIVES—
- Applied Engineering half-hi floppy (for IIC series)..... 119
- Controller for 2 drives..... 55
- Corvus hard disks..... (call)

CP/M & 6502C SYSTEMS—
- Applicard (6 Mhz Z-80, 64K to 192K RAM, 70-col video).. 129
- Microsoft Softcard IIe (Z-80, 80 col & 64K on one card) 265
- Softcard II (includes CP/M 2.2 and MBASIC)... 239
- Titan Accelerator IICE (3.6 Mhz 6502C coprocessor)..... 229
- Speed Demon (6502C high-speed coprocessor)..... 169
- Applied Engineering Z-Ram II (256K and CP/M for IIc)... 259
- TransWarp (3.6 Mhz 6502C, 256K RAM) 225

MONITORS—
- Amdek 300G/300A (12" green/amber anti-glare, 18Mhz).125/139
- NEC JB-1201/1205 (green/amber anti-glare screen, 20Mhz) 145
- JB-1260 (12" green, 15Mhz, best value for money).... 99

INTERFACES & BUFFERS & CLOCKS—
- Pkaso/U printer interface (superior graphics)..... (call)
- Quadram Microfazer (8K to 128K parallel buffer)..... 139
- Grappler+ printer interface (parallel w/ graphics)..... 85
- Buffered Grappler+ (16K to 64K buffer plus graphics)... 149
- Practical Peripherals SeriALL (for modems or printers). 109
- Graphicard (parallel w/ graphics). 79
- Printerface (std par w/o graphics) 59
- ProClock (PRODOS compatible)..... 109

VIDEO BOARDS—
- Videx Ultraterm (up to 160 column/48 line display !!!).. 209
- Microtek 80-col card (w/64K RAM, AppleWorks-compatible). 99
- Applied Engineering RamWorks III (64K—3 meg + 80 col). 139
- Viewmaster (80 col for II+)..... 119

MEMORY EXPANSION—
- Microtek 16K RAM card..... 79
- Legend "S" card (256K to 1 meg, runs Appleworks on IIC+) 209
- Applied Engineering RamFactor (256k—3 meg for IIC+/IIe) 189

— SOFTWARE —

WORD PROCESSING—
- Word Perfect (new version w/speller & more)..... 95
- Wordstar 3.3 (includes 6 mhz Z-80 Applicard)..... 159
- Bank Street Writer..... 49
- pfs: Write IIe..... 79
- MouseWrite..... 79
- ScreenWriter Professional..... 85
- HomeWord w/HomeWord Speller..... 49
- Sensible Speller IV (DOS or PRODOS versions avail).. 79

SPREADSHEETS—
- Multiplan (state-of-the-art spreadsheet)..... 70
- SuperCalc 3a (spreadsheet & graphics for the IIe/c) 135

INFORMATION MANAGEMENT—
- dBASE II (the best Apple database, requires CP/M).. 299
- pfs: File w/Report..... 79
- The General Manager 2.0..... 149
- Thinktank (electronic outliner)..... 89
- DB Master 4+ (latest version)..... 185

BUSINESS & ACCOUNTING—
- Dollars & Sense (accounting w/graphics)..... 79
- Managing Your Money (accounting + investment mgmt). 115
- Peachtree Back to Basics Accounting (GL/AR/AP)..... 115
- BPI Accounting (GL/AR/AP/PAY/INVENTORY).....each 225

COMMUNICATIONS—
- Ascii Express Professional (best DOS/PRODOS program) 80
- Crosstalk (best program for CP/M)..... 125
- CompuServe Starter Kit (password & 5 free hours).... 25

ODDS & ENDS—
- Print Shop/Print Shop Companion/Libraries.....36/29/18
- Newsroom/Clip Art Collection.....35/19
- Pinpoint..... 45
- Typing Tutor III..... 36
- Kensington System Saver Fan (w/surge protector)..... 66
- Kraft Joystick / Hayes Mach III..... 35/39
- KoalaPad Graphics Tablet (with graphics software)... 85
- Curtis Emerald Surge Protector (6 outlets & cord)... 45
- Flight Simulator II..... 36

- Microsoft Works (finally !!!)..... 189
- Word (what MacWrite should have been).... 119
- Excel (best Mac spreadsheet available)... 245
- Basic interpreter 99
- Chart (presentation business graphics).... 85
- File..... 119
- ReadySetGo (page processor)..... 125
- Filevision (graphics database system)..... 109
- Odesta Helix 2.0 (database for the serious user)... 239
- Dollars & Sense (accounting w/graphics)..... 95
- Sidekick w/PhoneLink..... 65
- Micah AT 20 or 30 (fast internal hard disk).. 1275/1375
- Peripheral Land 20 or 30 meg SCSI drive..... 795/949
- Microtech 800K external floppy..... 259
- MacSnap Memory (upgrade 512K to 1 meg or 2 meg) 259/525
- Iomega 10/20 meg removable cartridge drive.....(call)
- Kensington Mac System Saver (fan & surge protector). 75

MACINTOSH

CALL FOR PRICES OF ITEMS NOT LISTED

——— Please Compare Our Prices ———

If you find a lower price, give us a chance to beat it.

Feel free to call for answers to technical questions.

TO ORDER: Call Jeff Dillon at (301) 434-0405

or

Write or visit:

OPERANT SYSTEMS, 7676 New Hampshire Ave, Suite 312
Langley Park, Md 20783

Md. sales add 5% tax. UPS shipping is available.
All items carry full manufacturer's warranties.

APPLEWORKS SIG NEWS
by Peg Matzen

Again, attendance and participation were excellent at both the 8 and 12 o'clock AppleWorks SIG sessions in October. Emphasis of the day was on Q & A's. The questions and answers that follow may address some of your problems.

How can an Apple IIe user having problems printing with a Gemini 10 remedy his or her problems?

AppleWorks 1.1 harbored a number of printer "bugs". Get an AppleWorks 1.2 or 1.3 version for more satisfactory results.

How can six AppleWorks word processing files be transferred into one file?

First, add all of the source files to the Desktop. Then add a new file with a new name (the destination file). Use the "cut & paste" facility to move each of the source files into the new file by way of the Clipboard. Working with one file at a time, move (Open-Apple M) or copy (O-A C) the file to the Clipboard, then press O-A Q to return to the destination file. (Open-Apple M removes the file from the source file or Clipboard; O-A C leaves the original intact. Files longer than 250 lines must be moved or copied in 250-line segments because the Clipboard allows only 250 lines of material at a time to be stored and moved. It is safer to Copy than Move.) Put the cursor in the proper place in the destination file and press either O-A M or O-A C. The material from the Clipboard will be "pasted" at the cursor. Follow directions on the screen to place each piece of material in the destination file.

Can Appleworks read files from other word processors?

AppleWorks can read an ASCII file or document—provided it is formatted in ProDOS. Load the ASCII file from a disk into the AppleWorks word processor using pathname. For example, suppose the disk containing the ASCII file is named "MY.DISK" and the name of the ASCII file on that disk is named "LETTER." Start AppleWorks and add a new file to the word processor. Select the option "From ASCII File." Press Return. The prompt "Enter Pathname" now appears. Enter /MY.DISK/LETTER and press Return. (Make sure "MY.DISK" is in the disk drive—single drive users will be prompted when to place disk in drive.) You will then be prompted to give the new file a name. When this is done the ASCII file will appear on the screen and will be ready for editing. If the ASCII file is not ProDOS, you will have to convert it using a conversion utility.

What is available to expand the AppleWorks spreadsheet to more than 999 rows? The amount of input can be increased using a RAM card, but not the number of rows.

If anyone knows the answer to this question, please advise Richard Rowell (301-231-9086) or Ken DeVito (703-960-0787), who will share the information with the SIG members.

Linda van Zee described her experiences with her new telecommunications system. After much trial and error she is learning to access the BB's and download materials.

Ken DeVito reminds us that the IIc is perfect for communications—users can get a telecom set-up for less than $200. In addition, telecom users can benefit from attending Telecom Apple, which meets at 7:30 PM on the second Monday night of each month at the WAP office.

Future meetings will feature Q & A sessions. If anyone would like to have a meeting dedicated to a specific topic, please call the Chairman, Ken De Vito, at 703-960-0787.

We are delighted that Bill Burns is acting as technical advisor to this column. There are a number of caring, sharing participants in this SIG. Come—share the wealth!

Button-Down Guide contd. from pg 19

execute the code located on the card itself. You see, all these peripheral cards are designed with machine-language code right on the card. In that way, the Apple doesn't have to care what card is plugged in—it just executes whatever the manufacturers wrote on the card. The program located on the disk drive interface card instructs the machine to turn on the disk drive, read the disk, load the disk boot sector data into memory and branch to it. In other words, a bootstrap operation. Similarly, a call to location C300 will execute whatever code is located on the card in slot 3. The one anomaly in this setup is the slot 0 calls. Slot zero is reserved for expansion RAM. There is no routine to be run there. However, the addresses between locations C000 and C0FF still act as input/output mechanisms. Calls to these locations perform such magic as turning keyboard and video on and off, as well as switching between graphics and text, or changing video screens. These locations are known as the "I/O switches", and we will be dealing with them later.

The next group of I/O locations (pages $C8 through $CF) switch in and out peripheral card ROMs. These locations are used by particular peripherals (some of which I have never even seen before), and their use depends largely upon what manufacturers other than Apple intended. We shall look at these areas later on, but for now it is best to leave them alone.

Having taken this turn around the real estate in the Apple][, we now know (hopefully) a little more about what goes on where. In another article, we can explore a little more and begin to tweak bits here and there to see what happens. I'd like to get some more feedback from the readers, to see what areas we should explore next. Thanks

BEST OF THE APPLE ITEMS FROM THE TCS

by =Alexander-

Power Supply Again

EUCLID COUKOUMA ON 10/04

My //e started acting strangely one night while I was on the BBS. It just shut down without warning. If I allowed it to cool off for a while it would work for a while and then die again. I opened up the power supply, traced out some very interesting circuitry, and started testing the electrolytics, out of circuit with a Sencore capacitor tester. All the caps including C7 tested good for value and leakage. Because of the reputation of C7 causing trouble, and my experience with high failure rates of electrolytics, I replaced C7 as a preventive measure. The supply started working and kept working! I measured the leakage of C7 as 10 microamperes. The new cap had a leakage of 1 microamperes. The moral is as long as you are there you might as well replace C7. A couple of warnings:

1) There are about 300 Volts on one part of the board and that part is directly connected to the power line. Be careful! I used an Isolation transformer on the bench.

2) In the "Red Reference Manual" Apple recommends a minimum load of 9 watts split between +5V and +12V outputs for testing. I also use loads of near the maximum ratings on all outputs.

If you are not ready to test and trouble shoot just replace C7 with a good quality capacitor, reassemble and try it out. I would try it on a dummy load and check it for overvoltage and also check for shorts from the powerline to the case before putting it back in the Apple.

TOM VIER ON 10/05

I have never suggested that most folks trouble-shoot their supplies! I just had a file with instructions to replace that cap. Most people won't have a full bench setup like you or me. I hope the warnings on the power supply are sufficient to scare away the uninitiated who would attempt to work on it live! (Initiated, in my case, means being able to tell you the approx. voltage I've been zapped with, and whether it's AC or DC. And no, I don't "plug in" to get started in the morning.)

EUCLID COUKOUMA ON 10/06

I posted the warnings about working on the][e power supply because I remember that I used to be far less cautious and knowledgeable about working with dangerous voltages. When I was in high school I found out that the electromagnet in the speaker of the old (1939) radio I was working on had two functions. 1) To provide the magnetic field for the speaker. 2) As the 400 volt supply filter choke! The discovery use #2 was stunning—I had to scrape myself off the wall of my room! Ouch!!!

Appleworks Format Tips

ALLAN LEVY ON 10/06

Occasionally my son has to do bibliographies, his school format is

1. Entry .....
   any continuation

The indenting of the continuation drives him crazy since if a line is too long and AW puts it on the next line the only way to tab is to go to the previous line and put a <cr>. Even if you space over (by deleting the first character and spacing) the line will print on the left since it is a continuation of the previous line and AW will through away spaces. Any hints...

LOU PASTURA ON 10/08

Allan, there is a code on the Word Processor option screen (OA-O) that will do just that. I believe it's IN (for INdent). This is a little confusing since it doesn't indent paragraphs but instead allows you to specify how many spaces to indent AFTER the first line of text.... Steps for creating hanging paragraphs:

1. Put the cursor in front of the first "hanging" paragraph.
2. OA-O
3. IN
4. Enter the # of spaces you want to indent <CR>
5. ESC

JIM ENGLISH ON 10/09

Hey guys, Since I can't figure it out other than seeing a veiled reference to "bullets" in some magazine (Incider, A+) a couple of months ago, can anyone help me out as to the proper procedure for doing "bullets" in text? I try to call in as frequently as the phone lines allow from outside Baltimore in Randallstown! Nearly nightly, and I could use the "bullet" procedure for a document I prepared tonight—but couldn't locate the "article". Do any of you guys have a den that looks as badly as mine does? Help!

RICHARD ROWELL ON 10/09

There used to be a BBS somewhere around Springfield, VA, titled BULLET 'N BOARD. It and its SYSOP supported pro-gun legislation and NRA positions. Maybe you could get your "bullet" answer there? Other procedure is to reset the left margin (e.g. TEXT = LM 1.0, indented section = LM 1.4). Then also select indent 3 characters (IN = 3). Now you can precede each bulleted section with a "o " and you've got it.

SUMMARY

Apple-O
LM 1.4
IN 3
ESC
o lines of information
o lines of information
o lines of information
Apple-O
LM 1.0
IN 0
ESC

New ASCII Express

TOM VIER ON 10/08

A press release from United Software International on a new update for ASCII Express the Professional that looks to be very exciting. The following is based on the press release, I have not yet seen or used the program: The program is called

contd.

BEAT THE

Come to MacCorner

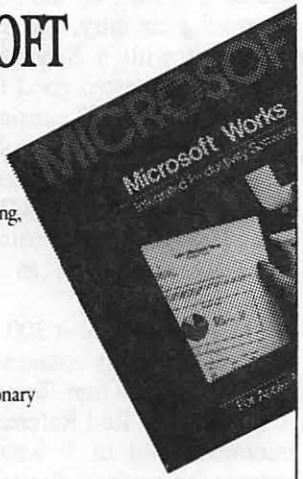
NOW AT MacCORNER

- Full Mac Book & Magazine Selection
- Programmers' aids
- Reference Materials
- Four new work stations
- Try out hundreds of new software packages

MICROSOFT WORKS

Revolutionary Integrated Software

Includes word processing, spreadsheet, business graphics, data base, communications.
List price: $295



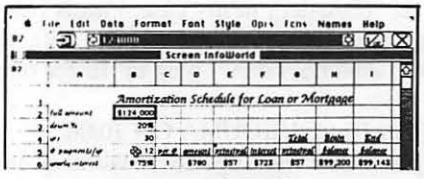
MacSPELL PLUS

- 75,000 word dictionary
- Built-in thesaurus
- Auto hyphenation

PACKAGE SPECIAL
Microsoft Works & MacSPELL
$269.95

SIDEKICK & REFLEX

$69.95 EACH



MacCALC

- Fastest spreadsheet for Mac

$79.95

FULL PAINT

- INFO WORLD's Highest Rating
- Fully compatible with MacPAINT
- Full Screen editing
- Handles up to 4 documents at a time (list $99.95)

SALE PRICE **$67.95**

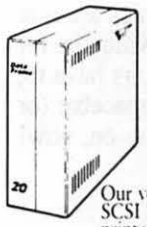
MacLIGHTNING

- Fastest Spell/Grammar Checker
- Webster's Ninth New Collegiate Dictionary - 80,000 words
- Works with most programs (list 99.95)

$67.95

HOLIDAY CROWDS

early for all your gifts for your "Mac"



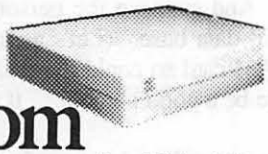
Data Frame

Our very best selling SCSI hard disk. NEW printer spooler. SCSI port - $99 (512)

$889 SALE PRICE

Call for other Data Frame models!

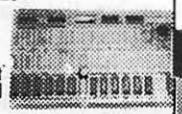
Mac Bottom



SCSI or serial drives ■ auto spooling ■ HFS & MFS vol. supported ■ full back-up utilities.

SALE PRICES STARTING FROM $749

MacSNAP



1 Meg for 512. Same as memory of MacPLUS. Works with new & old ROMs. Includes printer & ROM disk software. Full 1-yr. warranty. SCSI port available. 2 Meg available: $399.

$199 SALE PRICE

MaxPlus

PLENTY OF MEMORY FOR YOUR GRAPHIC NEEDS!

- Slips into a single MacPlus slot
- Doubles MacPlus' RAM
- Free MaxRam/MaxPrint
- Cooling fan included
- Full 1 Year Warranty ....

$375

Max 2 .... $495

Mac 512K Upgrade $175

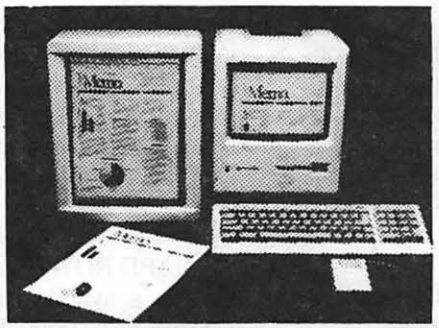
FROM SKINNY TO FAT IN 15 MINUTES!

DATASPACE 800K

DISK DRIVE

- For MacPLUS/512K
- Manual & auto eject
- Full 1 yr. warranty .....

$269



Radius

Full Page Display

- Full 8-1/2 x 11 display
- Installed on site at MacCorner

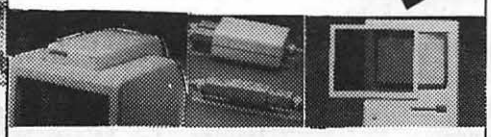
$1995

LIGHTSPEED PASCAL

$99.95

LIGHTSPEED "C"

$134.95



MacCORNER is your source for Kensington accessories and peripherals. Now on sale: SYSTEM SAVER MAC: $7995

- Best communications software
- Extremely easy to use
- Microphone/1200 modem bundle starting at $249

$59.95

HOT GAMES!

New games at MacCorner: Ferrari, Patton vs. Rommel, MacGolf, Uninvited, and many more!

SUPER SPECIALS!

Deja Vu	$29.95
Balance of Power	$29.95
Mind Shadow	$19.95

CALL FOR SPECIAL OF THE WEEK!

COMING ATTRACTIONS!

WRITE NOW
- Super word processor from T-Maker $135

CRICKET DRAW
- Revolutionary Drawing Program
- Rotate & Shade graphics & text
- Direct postscript windows $239.95

SUPER PAINT
- The best drawing/painting program - all in one $79.95

TURBO PASCAL
- Finally available for Mac
- Call us for availability $79.95

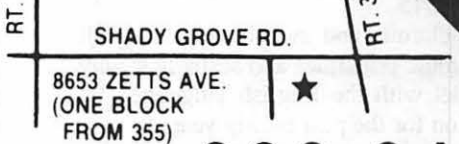
MULTI-PLAYER GAMES
- Mazewars + - fight up to 6 people in 3D mazes - Modem supported
- Strategic Conquest II - Tactical war game over AppleTalk
- Falcon - 3 dimensional dogfights between computers

Mac Corner

The Macintosh Only Store

STORE HOURS

MON-SAT 10-6
TUE-THURS 10-9



(301) 330-9116

FROM NO. VA CALL 340-7032

"ASCII Express Mousetalk". A Macintosh-like interface utilizing pulldown menus and the mouse (optional). Support of all popular serial and parallel cards. Macros with "multiple matching" capability. Review buffer of past 4 screens. FULL SCREEN EDITOR with:

Open a File
Read in a file at cursor location.
Find string, find next
Revert
Copy, Paste, Clear and Fill (justify)
Global help based on keyboard or mouse input.

The mailing also announced special prices to user groups on this suggested retail price of $149.95. Present owners of AE Pro will be able to upgrade through user groups at $50 (1-20 units) or $40 (+21 units). New purchasers will be able to buy AE Pro Mousetalk for $65 (1-25 units) or $55 (26+ units) also through user groups. How 'bout dat!

DALE SMITH ON 10/09
I talked with United Sortware today about AEPro Mousetalk.

1. It works with the SCC chip in the //gs serial ports.

2. Availability is at worst 2 weeks. They're getting the new manuals tomorrow or Monday and the labels by the middle of next week. They expect to begin shipping by a week from Monday.

3. Upgrades for previous owners not connected with a user group will be $75!!

DALE SMITH ON 10/11
Although the author does not think of this as a replacement for the older version, from what I've heard about the Mousetalk version, it seems to have included almost my entire list of needed improvements. I particularly like the full screen editing, string branch, and backward scroll. I also welcome the mouse as an optional mode of operation. The only thing in my list that has not been done is to improve the terminal emulation to include VT-100. So for me it is a replacement giving me all the old features plus many improvements.

DAVE HARVEY ON 10/10
I saw the new Mouse version in operation last month at the Apple show in Gaithesburg for Apple Reps and talked to one of the co-authors on AEPRO, Mark Robins. He said that he considered the new mouse version as not replacing the current version and that people that are satisfied with the current AEPRO will probably stick with it. The new mouse version as far as I could tell has all the features of the current non-mouse version and adds a few new features. One I liked is that you can scroll backwards in the buffer and don't have to start at the beginning. I haven't heard anything about a user group deal. Maybe sometime soon.

Signs of the Times

RICHARD ROWELL ON 10/15
English majors don't take circuits and switch the wiring all around violating both electronic principles and aesthetics; why do engineers do the parallel with the English language? (I daren't tell you my profession for the past twenty years.)

FROM DAVID GURSKY ON 10/15
Because certain engineers THINK they know as much about the English language as Webster.

BARRY FOX ON 10/18
As THE long distance WIZOP around here, I would appreciate if all you budding artists around here would refrain from using graphics in your messages. They serve no useful purpose and cost $$ to those of us calling the BBS long distance (even at 2400 baud). I thank you all in advance.

LEE RAESLY ON 10/18
Sorry, Barry, I see it differently. To me, the graphics are neat in themselves, and also reflect a neat touch of individuality for the users. In terms of your reading them, you don't have to, as you know. As soon as any graphic starts, hit spacebar (or N - for N)ext, and the graphic is aborted. Come on, now! Don't be a spoil-sport <grin>. Take Care, Now!

AWorks to dBase

RICHARD ROWELL ON 10/11
Here is a hypothetical situation: Suppose someone had an AppleWorks Data Base with, let's say 4,300 records, essentially a mailing list. And suppose the fictional person was going to add 1986-87 names to the list so that the records would be around 6,000. And suppose the person wanted to switch to a more powerful data base. (Let's assume that the person just bought a Z-RAM card so could use dBase.)

1. Would Apple dBase be a good choice? ... if not, what is a good choice?

2. What would be the procedure for transferirng the old data to a new data base? ... Create a DIF file from AppleWorks?

3. What would be a reasonable price to charge this made-up person for converting his list from one data base to another.

4. Oh yeh, let's suppose that the fictious person is working entirely in Spanish—just to make the case interesting.

5. I would like to solve this hypothetical situation before leaving for Miami in two weeks (to work on an entirely unrelated computer job, of course.)

LEE RAESLY ON 10/12
1.Yes, dBASE II would be the ONLY choice on an Apple that could make it. LIMITS: dBASE II limits you to 63,000 RECORDs, and only ONE disk may be used. It will not split between disks. Thus, your limiting factor would be disk size. AT LEAST 3.5's would have to be used, and probably a HD (There are a couple that will work with the //c).

2. Transfer. Print to disk from AWorks. Convert with ADOSXFER or APDOS to CP/M LOAD into WS as a Non-document. Oh, yes, before printing to disk in AW, create a new file with the last FIELD being called END. Make it 3 characters. Enter three #'s (that's ###) into this FIELD. Now in WS, change all <CR>'s ' (in WS, a <CR> can be indicated by the symbol ^). This will place a ',' between each FIELD, and the entire file will be on one line from your house to the Potomac river. Incidentally, when you do that global replace, indicate NG (No asking if should, Globally done). Then, when it starts the global replace, turn off the screen by hitting the space bar once. It makes it about 10 times as fast. Then, go for a cup of coffee. It will take about 15 minutes, with nothing appearing to happen on the screen (you turned it off,

contd.

remember?) If you want the confidence of seeing it on the screen, don't hit space bar. However, do plan an activity for the rest of the afternoon, as it will take about 4 hours with the screen on!

Next do a global replace on the 3 #'s (i.e. ###). This will become your new end of RECORD (same codes as above, same comment about screen). Now, you're almost there. Go to top of file, and making sure that the insert mode is still on, place a ' as the first character in the file. Then go to the end of the file, and place a ' as the last character in the file. What you have done is create an SDF file (Standard Delimited Format). This format requires that each FILED be surrounded by a ' , and that each each FIELD be separated with a , and each RECORD end with a <CR>.

Now all that is left is go to dBASE II, create a new blank file with exactly as many FIELDs as you had before LESS ONE (-1, you no longer have the FIELD of 3 #'s (###). You turned them into <CR> Remember?)

3. Fee is your responsibility. I charge between $25 to $50 per hour, plus trans., etc.

4. If you don't speak Spanish, better hope that one of them does!

5. Now you know how to do it, and you still have 13 days left!

6. My fee! Lunch someday (even at McDonalds would be O.K.)!

ALL ASSEMBLED & TESTED WITH ONE YEAR WARRANTY

DISK DRIVE (HALF HEIGHT) — $129.00
- Super Quiet Drive by TECMAR
- For II+/IIe/IIc (specify)
- Color Matches Apple

64K/80 COL. BOARD — $39.00
- Expands Apple IIe to 128K
- Software Selectable 40/80 Columns
- 100% Replacement for Apple Extended 80 Column Card

128K RAM BOARD — $89.00
- Expands II+ 64K to 192K
- Saturn (Titan) Software Compatible
- Combine with PLUSWORKS XM and Expand Your APPLEWORKS DESKTOP to 135K on Your Apple or Franklin.

Above BD w/o memory $65
PLUSWORKS-XM Software $39
128K Bareboard Ltd. Quantity $10

256K/80 COL. BOARD — $109.00
- 256K-Expandable to 1.0 Megabytes!
- Software Selective 40/80 Columns
- 100% Extended 80 Col. Card Compatible.
- FREE Software Expands APPLEWORKS DESKTOP to 252K (1014K with 1.0 MEG)

Above BD w/o Software $89
512K with Software $139
1.0 MEG with Software $238

SUPER SERIAL BOARD — $49.00
- II/II+/IIe
- Similar To Apple's Super Serial Card
- 50-19,200 Baud Selectable
- Communication & Terminal Use

RS-232 CABLE 10' MALE-MALE All 25 Lines Connected $12.95

80 COLUMN BOARD — $49.00
- II/II+
- Similar To Videx Videoterm
- Upper & Lower Case Generation
- Inverse Video

40/80 COLUMN SOFTSWITCH For Above Board $14.95

Z80 CP/M BOARD — $39.00
- II/II+/IIe
- A Low Cost Microsoft Compatible CP/M Board
- Supports 48K And 64K Apples
- Turbo Pascal Compatible

SUPER COOLING FAN — $29.95
- Slides on Side of II+/IIe, Color Matches Apple
- Power Switch Controls AC to Computer & Dual Rear 3 Prong AC Outlets

JOYSTICK III — $24.95
FOR II/II+/IIe/IIc
- Similar to HAYES MACH III
- Large Fire Button on Stick
- Selectable Self Center & Non-Self Center

IIe NUMERIC KEYPAD — $39.00
- 16 Keys Total
- 0-9 and Decimal Keys
- +, -, /, * and Return Keys

THE FINE PRINT!

Shipping is extra on ALL ORDERS. Minimum Shipping & Insurance is $2.50.
COD Okay. $1.90 UPS or $2.40 Postal (Your Choice) will be added.
Schools — School Districts — & Universities: We welcome your Purchase Orders.
School P.O. Terms: Prepayment - 5% Else 2% 10/Net 30 Days.

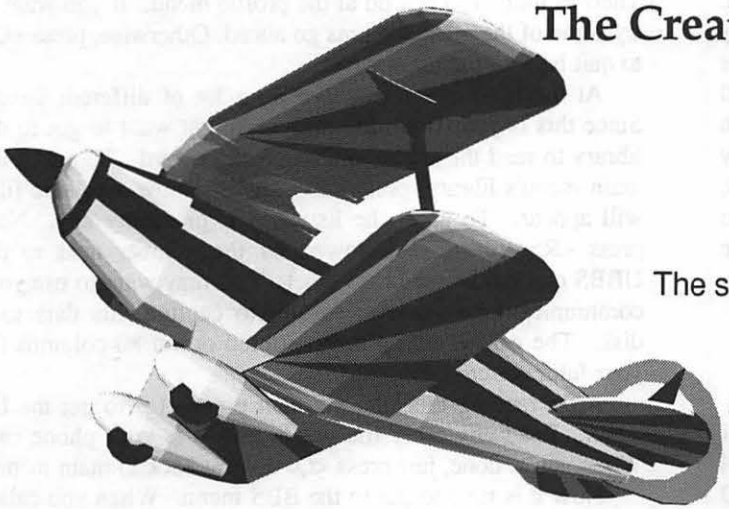
MUCH MORE AVAILABLE

NEXO DISTRIBUTION
MICROPROCESSOR PERIPHERALS

Call or Write For Complete List!

914 E. 8TH ST. • SUITE 109 • NATIONAL CITY, CA 92050 • (619) 474-3328
Mon thru Fri 10:00 AM — 6:00 PM

Apple II, Apple II+, Apple IIc, Apple IIe, Appleworks are trademarks of Apple Computer, Inc.
Videx Videoterm is a trademark of Videx, Inc. — Saturn & Titan are trademarks of Titan Technologies.



The Creators of Easy3D™ Present

PRO 3D
Macintosh Version

The solution for designing and presenting:
- **Products** • **Models** • **Ideas**
- **Camera Ready Art**

PRO3D

Enabling Technologies, Inc.
600 South Dearborn, Suite 1304
Chicago, Illinois 60605
312/427-0408

Available soon:
Pro3D/IBM Version

See your dealer for more information.
Pro3D/Mac is $349 and requires a Macintosh Plus™ or a Macintosh™ 512K.
Pro3D and Easy3D are distributed to the trade by the Ashton-Tate Publishing Group.

Pro3D and Easy3D trademarks of Enabling Technologies, Inc.
Macintosh and Macintosh Plus trademarks licensed to Apple Computer
IBM is a trademark of International Businesss Machines, Inc.

THE PROFESSIONAL SHADED MODELING PROGRAM FOR
• DESKTOP PUBLISHERS • GRAPHIC DESIGNERS • ENGINEERS • ARCHITECTS • ARTISTS

A BEGINNER'S GUIDE TO THE WAP TELECOMMUNICATIONS SYSTEM

by Eric Rall

The WAP Telecommunications System (TCS) has undergone many changes since last year. Currently our system consists of four phone lines. Each of these lines connect to the same multi-user system. This system is comprised of 4 conferences. Each conference is capable of having as many as 32 boards.

In order to access the system you will need a password. If you don't already have a password you may obtain one by calling the Pi office during business hours. Passwords that are valid for the entire system require an annual payment of $6.00. This is in addition to your regular yearly dues.

For your six dollars, you get access to all four conferences. The conferences are: Pi General, Apple][& // families, Macintosh, and the Classified. Each conference can have up to 32 boards. If you haven't paid your BBS fee, you may only access two boards on the Pi General Conference, Pi General Information and Pi Journal, and you may read (not post to) the Classifieds on Conference 4. You will be missing all the SIG boards, the hardware/software boards, the general discussion board and the libraries of information associated with them. It is sort of like having a 16K ram computer. It was nice 8 years ago, but you will be missing a tremendous amount of information.

The First Call

The four phone lines are on an automatic rollover system. If line 1 is busy, you will rollover to line 2. If that's busy you rollover to line 3, etc. Calling line 2 directly will never roll backwards to line 1. The only time you should try to call a number other than line 1 is when there is a problem with one of the systems. If you ever get "CONNECT" followed by no response there may be a problem with one of the systems. If that occurs you will have to try lines 2, 3, and 4 in sequence until you can "get past the disabled system". The numbers are as follows:

line 1: 986-8085
line 2: 986-8086
line 3: 986-4106
line 4: 986-4107

The TCS is configured as 8/N/1 and is capable of operating at 300/1200/2400 baud rates. After a successful connection, you will be asked to PRESS <RETURN> TO CONTINUE. That means just what it says. Any time you see a character within <>, that means you may press the key with the character within the brackets. I will use this convention throughout this article.

Next step is entering your password. Your password is (or will be) a four digit number followed by a password chosen by you. Those first four digits are often referred to as your user number. The user number cannot be altered by you. The individual password chosen by you may be changed at your desire. So, when you are asked to enter your password, type your 4 digit user number followed by the password. Now press the return or enter key.

If you have properly entered you password you will get a welcome message containing the number of the system to which you have been connected. You will also get a list of the last callers on each of the four lines.

Main Bulletin

This appears automatically on the screen. If this is your first time on, please read it all. You may pause the screen scrolling by using a <Ctrl S> and then resume by pressing any key. New information is added to the start of the list and dated. If you have read it before you can abort the bulletin by pressing any key. At the completion of the main bulletin or after the abort, you will enter the main menu.

Main Menu

If you have made it this far you are in good shape. The first order of business is to set your user profile. To do this press a <U>. Since this is your first time, you may now what to see your current default settings. Just press <Y> to see your settings. Now let's change some things to better suit your setup. Press <?> to see what choices are available to you. Most of you will want to change the video width to something greater than 40. Press <V> and then enter your desired video width followed by <RETURN>. If you have lowercase capabilities, change case next. Simply pressing <C> will toggle lowercase on (or off if it is already on). There is more you can do at the profile menu. If you want to try some of the other features go ahead. Otherwise, press <Q> to quit back to the main menu.

At the main menu you can do a lot of different things. Since this is your first time on, you might want to got to the library to read the UBBS quick reference card. To get to the main menu's library, press <L>. A list of the available files will appear. To abort the listing, just press any key. Now press <R>, for read, followed by the number next to the UBBS quick reference card label. You may want to use your communication software's feature to capture this data to a disk. The card is set up to be printed out in 80 columns for your future reference.

After reading this file, you can press <L> to get the list again. Read any other file you want—it is your phone call. When you're done, just press <Q> to quit back to main menu.

Now it is time to get to the BBS menu. When you called up you were defaulted into Conference 1, the Pi General Conference. To get to this conference just press a <B>.

BBS

You will be given a listing of all the boards available. There are a number of boards that are not used. Later you can eliminate the listing of these boards. For now, just ignore them. Each board that has a new message will have an asterisk next to the number. Since this is your first call, they should all be marked. You could press an <R> to read all new messages. That will take you through all the boards reading each of the messages. On your first call, I wouldn't recommend this option. It is easier to just go to the boards you

contd.

think you might want to read and read them. After a few calls, you will start catching up on the messages and develop your own preferences for reading the boards.

To start off, type <1> and go to the PI general board. Now you may press <R> for read and <N> for new messages. After the first message scrolls by, you may press <N> for next. If you really don't want to continue reading the next messages, just press <Q> for quit. To change boards you will need to quit again with a <Q>. This will bring you back to the change board prompt. If at any time you want to experiment, press <?> for a help listing of your choices.

That covers only the basics of reading messages. The choices are much more varied than just reading new messages. You can scan titles and mark messages with a <RETURN>. Any key aborts the scan titles procedure. Then <R>ead <M>arked messages. Maybe someday I can discuss some of these other features in detail, but this is a beginner's guide and I don't want to frighten you away.

Changing Conferences

Whenever you get back to the change board prompt you can <Q>uit to main menu and type a <Z>. This command allows you to set the boards that you want to see. Press <1> to set by roll call and then type a <Y> next to each board name you want to be able to see. After you finish this process type a <4> to exit back to main menu. At main menu or at the change board prompt, you can <C>hange conferences. This will bring up the change conference list and prompt. A <1>, <2>, <3>, or <4> will select the chosen conference and bring you directly to that conference at the BBS level. <Q> will bring you back to main menu.

Leaving Messages

Part of the fun of the TCS is leaving messages. This is simple. To reply to a message, you must first read the message. If you don't want to read it all, any key will abort. After the prompt comes up just <R>eply. You will be asked for a subject. If you just hit <RETURN>, you will keep the same topic as the message to which you are replying. Then you can enter your message. When finished, just <RETURN> and at the editor prompt <S>ave the message. The message will ask you if you want it to be public (anybody may read it) or private. To make it public just <RETURN>. To keep it private, type <P><R><I><V> and then <RETURN>. Remember the convention, just type the characters within the brackets, not the brackets themselves.

To enter a message you need to quit to the prompt that looks something like <A/C/E/F/L/M/O/Q/R/S/T/U/W/?>. Then <E>nter a new message. You will be asked for a sub ject and to whom you want to send the message. You must provide a short subject statement. The person you are sending it to is optional. A <RETURN> here will send the message to ALL. By the way, messages to ALL can never be private. In fact, messages left to ALL don't even require you to specify public or private.

Board Libraries

To look at the library for a board, just type <L>ibrary. Then go about you business the same way you did at the main menu library.

Signing Off

Simply hanging up your phone is NOT recommended. It will work, but isn't proper form. To leave the TCS, just type

contd. on pg 46

Smart Computer:

The Generic PC, Built with Care and Intelligence

by Bud Stolker

In the IBM PC-compatible world there are good computers and there are great computers. The generic PC's we are custom-building for clients fall into the latter category for several reasons:

- **Software included.** You must see our systems to understand how well-equipped a PC can be. We modestly claim that our hard disk installations are the best in the country, and probably the world. What you can't do with the programs we provide may not be worth doing. All programs and menu options are customized for your needs and your particular hardware, without charge. And software upgrades are always free for clients.

- **Easy to operate.** Each PC comes with a customized start-up disk or hard disk menu system, as well as a personalized user's guide that fully explains your particular mix of hardware and software. The three-level help system with pop-up messages and explanatory graphics keeps you firmly in charge. As you cruise effortlessly from one program to another, help screens describe what's happening and tell you what you can do next. Full details on all hardware and software are integrated into the menu system, and are available by keyword search. And our help system is an open one; we tell you how to expand and further customize it.

- **Strongly supported.** We provide personal training at no charge, and offer telephone and in-person support for our clients days, evenings, and weekends. *Liberal replacement policy:* If you're unhappy with your keyboard or video system, we'll swap it out and give you full credit toward another during the warranty period. (Certain restrictions apply). *Fast on-site service:* We are the first and, we believe, the only supplier of generic PC's to have an area-wide service agreement with TRW, the nation's leading independent provider of computer maintenance and repair.

- **Priced low.** Check our component prices against those of mail-order vendors. You'll find we're as cheap or cheaper, yet we offer fully tested and guaranteed components of the highest quality. Check our prices and features with those of the low-ball discounters. You'll find we are comparable, and we easily beat them dollar-for-dollar on value.

We're on your side. We are committed to our clients, not to name brand manufacturers, greedy franchise operators, or pushy sales managers. Landmark Computer Labs is a consulting firm, not a retail store. Our primary interest is in satisfying your personal computing requirements, and in giving you the greatest payback for your hard-earned buck.

So call when you're ready for a PC, and let's talk about why *a custom-tailored personal computer is the best buy you can make.*

Landmark Computer Laboratories
Suite 1506
101 South Whiting Street
Alexandria, Virginia 22304

Telephone (703) 370-2242 ☎ SourceMail TCB076

IBM PC, PC XT, and PC AT are registered trademarks of International Business Machines Corporation.

THE NEW WAP TELECOMMUNICATIONS SYSTEM

by Leon H. Raesly

The original WAP ABBS has grown and expanded greatly through the efforts of Rich Mlodoch, Eric Rall, Mike Ungerman, George Kinal, Lee Raesly and many others. The original system had a single message base with the capability of 255 messages before it rolled over.

At the present time, the NEW TSC has four conferences, based on particular subject areas, each Conference capable of 32 Boards by specific subject. Although no Conference has reached 32 Boards yet, some are approaching it. The Telecommunications System has the capability to be expanded by as many additional Conferences as desired, each with up to 32 Boards on them. At the present time there are no plans to expand beyond the current four Conferences, but you can never tell what the IIgs will bring!

To reach any of the Boards listed below, call the Pi office between 10:00 AM and 2:30 PM weekdays and ask for a password to the SYSTEM. It will be active within a few days. At this point you could also ask what the fee is for the remainder of your current membership ($.50 per month) and send it on in. When you receive your password, you only need call 986-8085 to automatically roll over to the next available line. For how to use the Conferences, see Eric Rall's article titled "A Beginner's Guide to the TCS" in this issue.

The following conferences are available:

1. General Conference
2. Apple II Conference
3. Mac Conference
4. Classified Conference

[Conf. 1] General Conference

Boards Available:

1>..Pi General Information
2>..Pi Journal
3>..PI Journal Indexes
4>..Heard any good jokes?
5>..Apple ///
6>..Guest SYSOP
7>..The scene - Reviews
8>..Other Computers
9>..Music Groups & Performers
10>..Eric's Room
11>..Apple Link
12>..Micro Industry Report
13>..TCS Comments & Sugs.
14>..Pi Educators
15>..Game SIG
16>..Lawyers' SIG
17>..The Redskins Line
18>..Historical War Gamers
19>..Micro-Genealogy
20>..IBM PC & Clones
21>..Pi DOV's

[Conf. 2] Apple][,// e,c Conference

Boards Available:

1>..][Telecommunications
2>..AppleWorks
3>..Pascal Programming
4>..Other Languages
5>..][+ e c Prog. & Dos
6>..CP/M
7>..dBASE II & WordStar
8>..Apple II Tech Notes
9>..Apple Writer & WPL
10>..Word Processors
11>..Data Bases
12>..Graphics & Related
13>..Software Misc.
14>..Hardware Misc.
15>..Accounting
16>..Apple //gs Hardware
17>..Apple //gs Software
18>..Apple //gs Misc.

[Conf. 3] Mac Conference

Boards Available:

1>..Accessories
2>..Business Accounting
3>..C Programming
4>..Data Bases
5>..MacDesk Accessories
6>..Desktop Publishing
7>..Educational Software
8>..Entertainment Software
9>..Graphics & Design Software
10>.Hard Disks
11>.Other Hardware
12>..Misc. Programming
13>..Organizational Tools
14>..Pascal Programming
15>..Printers
16>..Rumor Manager
17>..Software Misc.
18>..Spreadsheets
19>..Tech Notes
20>..Telecom Hardware & Software
21>..Utilities
22>..Word Processors

[Conf. 4] Classifed Conference

Boards Available:

1>..Auto-Motorcycle Etc.
2>..Household Furnishings
3>..Household Misc.
4>..][ ][+ // e c Software
5>..][ ][+ // e c Hardware
6>..][ ][+ // e c Misc.
7>..Mac Software
8>..Mac Hardware
9>..Mac Miscelleanous
10>..Stereo & Music
11>..Employment Wanted
12>..Employment Offered
13>..Tutoring-Offered & Wanted
14>..Not Otherwise Listed
15>..Boats & Boating Related
16>..Yard-Lawn- Farm Implements

Beginners's Guide to TCS contd. from pg 45

<O>ff whenever an <O> is allowed. That is at most of the prompts, so it shouldn't be too much of a problem.

Final Notes

This entire article merely scratches the surface of the WAP TCS. If you find it helpful and I can find the time, maybe we can discuss some of the more interesting and powerful features of the system in future articles. The TCS committee and I are more than glad to help out. Just leave a message on Conference 1, Board 13 (TCS comments board).

Enjoy the system.

UBBS QUICK CARD BY RICHARD LANGSTON & EDITED BY LEE RAESLY, LCSW

MAIN MENU COMMANDS :

< B > - Bulletin board access
< C > - Change Conferences
< L > - Library
< M > - Member List (Discontinued)
< O > - Off
< T > - Time Display
< U > - User Profile
< * > - Page Sysop

LIBRARY COMMANDS :

< L > - List Files
< O > - Off - Quit the System
< Q > - Quit the System
< R > - Read A File
< * > - Page the System Operator

EDITOR COMMANDS :

< A > - Add to File
< C > - Clear File
< D > - Delete a Line
< E > - Edit a Line
< F > - Find a String
< G > - Global Replace
< I > - Insert a Line
< L > - List File
< N > - Numbering On/Off
< P > - Purge (Delete) Temporay File
< Q > - Quit (exit without saving)
< R > - Read Back Temporary File
< S > - Save File
< T > - Write File to Temporary File
< X > - Exchange N (only one line)

Commands above can be used in editor by preceding with . at start of line

CHANGE BOARDS SUBCOMMANDS :

< C > - Change Conferences
< L > - List Boards with NEW Messages
< n > - Change to Board n

At ANY Command level a ? will print the LIST of commands for that command level.

BBS MENU COMMANDS :

< A > - Alter / Edit Old Message
< C > - Change Boards
< D > - Delete Messages
< E > - Enter A Message
< F > - Find Message By Keyword
< L > - Library For Board Name
< M > - Mark Messages For You
< O > - Off - Quit the System
< R > - Read A Message
< S > - Scan Message Base
< T > - Title Scan - Quickscan
< U > - User Profile <same as Main>
< Z > - Ziclhbrejkn (Select Boards)
< * > - Page the System Operator

This space intentionally left blank

< R > - READ A MESSAGE COMMANDS :

< F > - Forward Continuous Read
< M > - Read Marked Messages
< R > - Reverse Continuous Read (TSILB)

READ SUBCOMMANDS :

< A > - Read Message Again
< B > - Backup To Previous Message
< C > - Continuous Message Retrieval
< E > - Examine Replies to Message
< N > - Read Next Message
< Q > - Quit To BBS Prompt
< R > - Reply To This Message
< T > - Read Previous Message - Thread (TSILB)

CHANGE CONFERENCES SUBCOMMANDS :

< n > - Change to Conference n
< L > - List Conferences
< Q > - Quit to Main Menu
< ? > - Print this Menu

THE CULT OF INFORMATION - THE FOLKLORE OF COMPUTERS & THE TRUE ART OF THINKING:

A Book Review by Joseph A. Hasson

The computer revolution is spreading like wild fire. Where it will stop no one really knows. Some contend that human culture has reached its peak and will be succeeded by a higher level of intelligence. Is this feasible? While this sounds like a page out of science fiction, the fact is that many imaginative and creative people can devise computerized instruments which ultimately displace human beings in many of the myriad tasks we currently perform. One can easily visualize robotized factories that would displace large numbers of workers. Computers can interview prospective employees and generally execute on command tasks in much the same way that humans react to other humans. Some computer scientists are programming them to produce poems, mystery stories and other "literary works". A whole new culture based on computers is spawning right before our eyes. Yet, the social, economic and political impacts of these pervasive—or should one say massive—inroads into human activity are matters that have not received the serious attention and concern they deserve. Action displaces thought without regard to possible consequences.

In general, the process of technological change produces benefits as well as costs and dislocations. Society adjusts but the changes are not necessarily an unmitigated blessing. Private profit-taking may not fully account for social costs and externalities. We have the unique opportunity to participate in these changes, but also to contemplate and to cope with both their positive and negative effects. Costs of progress can be minimized; benefits maximized and shared in by all. A sensitive awareness of these effects does not imply that one is against change. It means only that one is concerned with an optimal use of the technology, an equitable sharing in its benefits and with ways of mitigating the costs—actual and potential—brought in their wake.

Theodore Roszak, who has given these matters critical thoughts, expresses his concerns in a book which should be required reading for all of us. It was published in 1986 by Pantheon Books and is entitled, The Cult of Information - The Folklore of Computers and the True Art of Thinking. I will touch on only a very few salient points made in this provocative and—I would add—disturbing book.

Roszak's basic thesis is that the computer has thrust us pell-mell into an Age when information is processed, spewed out and kept in electronic memory, at lightning speed and in immense volumes. It stores information similar to human memory and it follows logical procedures similar to human reasoning. Hence, many members of the "cult of information" have concluded that computers do something that corresponds to human thinking. Roszak argues that the "power of reasoning and imagination" humans perform is "in danger of being diluted with low-grade mechanical counterfeits."

The true art of thinking is much more sophisticated, speculative, creative and sensitive than the capacity of any computer. No computer exists now or is on the horizon that compares in complexity with the human mind. This headlong rush to computers, motivated by economic forces, political considerations, a search for military advantage and by simple, albeit sometimes destructive, competitiveness, is taking place without too much thought as to potential consequences of where it may be leading us.

Roszak recognizes and does not oppose the power of the computer—a product of the human mind. His concern is with misapplications and with its socio-economic-political impacts. First, human thinking, instead of being spontaneous, random and creative, can be forced into channels that are implicitly dictated by the inherent logic of computer processes. Whereas, we should be masters of the computer, the computer in subtle ways comes to dictate the parameters of human thought. Second, computers process information which can be quantified or, at least reduced to off and on electronic impulses, transmitted at very high speeds. But Roszak reminds us that there is a considerable distinction between ***information*** electronically defined, and ***ideas,*** which are abstract, speculative, and philosophical. For instance, "all men are created equal" is a philosophical concept with far- reaching consequences but is not reducible to the level of electronic impulses. "Equal justice under law", "He died for our sins", "I think therefore I am"—all are powerful ideas that move people but which cannot be reduced to the narrow limits of a computer.

Computers have been and are being programmed to write poetry or to produce music. But great music and poetry originate in the "underground" springs of deep human emotions, inspired by the inimitable uniqueness of the human condition. The range of human emotion which can enrichen our lives cannot be reduced to a level of electronic impulses—on and off—processed in CPU's, through silicon chips and translated into machine language with compilers and interpreters. Programming languages are hardly the stuff which contributes to the genius expression of a Lord Byron, a William Shakespeare, or an E.E. Cummings.

Real feelings of love and hate, elation and depression, anger and equanimity among persons determine our personalities and become the bases for individual uniqueness. A free people does not want an Orwellian society; nor do we want every detail of our lives—public and private—to be collected in massive computer memories. The potentials for misuse are too great. The danger of our society being cast in the mold of "1984" would be enhanced. "Big Brother" could become a distinct possiblity. We have already had problems in national elections with outcomes on the East Coast transmitted, announced and, perhaps, influencing the West Coast before its polling places were closed. Roszak enumerates other abuses based on this high-technology. We should take note.

These and many other provocative ideas run throughout this book. I have alluded to only a very few of them. Hence, I strongly recommend it to the thoughtful readers of this magazine.

WAPACROSTIC
by Professor Apple

	1 A	2 P	3 G		4 B	5 D	6 V	7 G		8 D	9 X	10 K	11 P		12 c	13 c	14 O	15 N	16 Z	17 R				
18 E	19 N	20 V		21 H	22 Z	23 J	24 J	25 F		26 F	27 M	28 L		29 K	30 F	31 A	32 L		33 R	34 A	35 W			
	36 G	37 X		38 D	39 C	40 I	41 N		42 B	43 B	44 A		45 E	46 Q	47 W		48 F	49 c	50 X	51 J	52 P			
53 S	54 V	55 c	56 E		57 B	58 M		59 c	60 Z		61 W	62 D	63 S	64 N	65 T	66 W	67 Y	68 Y	69 W		70 S			
71 V		72 J	73 P	74 V	75 L		76 F	77 T	78 W	79 a	80 Z	81 F	82 E		83 T	84 G		85 U	86 Z	87 C				
88 S	89 N	90 T	91 N	92 I	93 R	94 V	95 U	96 X	97 a	98 R	99 E	100U		101F	102T	103U	104O		105G	106a	107S			
108G	109R	110b	111D	112C	113F	114U		115Z	116G	117M	118G	119M	120W		121a	122c	123Z	124H	125a	126P	127J			
	128X	129I	130M		131C	132E	133J	134J	135P	136N	137I	138O	139W		140U	141L		142T	143J	144V	145Z			
	146X	147a	148T	149c	150O	151U		152I	153S		154L	155b	156b		157Q	158K	159N	160E	161H		162P			
163J		164D	165U	166T	167P	168N	169Q	170W	171E	172R	173b	174M	175T	176U		177M	178M	179K	180c	181S				
182F	183M	184a	185a	186Q	187R	188D		189Q	190Y	191a	192b	193c		194H	195Q	196X	197C	198b	199Q	200J	201E			

Definitions		Words
A.	Skin	31 1 34 44
B.	Matter	42 43 4 57
C.	Moves Jerkily	39 112 131 197 87
D.	Excuse	38 5 164 111 188 62 8
E.	Most Vigorous	56 82 132 99 45 171 18 201 160
F.	1 1/2 in Mine	76 26 25 101 182 113 30 48 81
G.	Compels	118 36 84 108 105 116 7 3
H.	Last	194 21 161 124
I.	Unwilling	92 137 40 152 129
J.	Expert	143 163 72 134 133 51 23 24 200 127
K.	Herbert Hoover Birthplace	179 158 29 10
L.	Confers	75 154 28 32 141
M.	Another Place	183 27 58 174 177 178 119 117 130
N.	Play Stock (var.)	159 89 15 64 168 136 91 19 41
O.	Engage	14 150 138 104

Definitions		Words
P.	Comment	73 135 52 162 2 126 11 167
Q.	Corpus	189 46 195 186 157 169 199
R.	Innate	172 33 17 93 187 98 109
S.	African Bird	153 107 53 88 70 63 181
T.	Attitude	90 148 77 142 65 83 102 175 166
U.	Affront	85 165 151 140 103 114 95 176 100
V.	Seek Opinion	74 54 71 20 6 144 94
W.	Charmed	47 69 78 139 170 120 66 61 35
X.	Partnership (sl.)	50 196 9 96 37 128 146
Y.	Lubricate	68 67 190
Z.	Shining	145 80 123 86 22 60 16 115
a.	Apples and Oranges	185 97 191 184 147 79 125 106 121
b.	Turkish Judge (var.)	173 110 156 155 192 198
c.	Sleep Inducers	59 49 193 180 13 149 122 12 55

Solution to last month's WAPAcrostic is on page 71.

MAC Q & A
by Jonathan E. Hardis

Leftovers: Last month, we discussed how the choice of paper affects the quality of LaserWriter printing. David Rose recommends Hammerhill Laser Plus #10450-5. On another topic, Ward Meyer wrote to say that the Assimilation Process trackball is still being sold and serviced by its original manufacturer: Cambridge Automation, 20230 State Rd., Ceritos, CA 90701 (213) 402-5389. Also last month we discussed the mini-debugger on the Mac+. This is the subject of the new Tech Note 38, which offers a couple of hints. If you want to get back to the Finder from within the debugger, type: SM 0 A9F4, then G 0. Also, if you crash into the debugger and the system hangs, try turning off your modem.

Q: The Finder can keep track (somehow) of disks with the same volume name. So is it safe to keep different disks with the same name?

A: No! While I was watching the Cowboys/Giants game this afternoon, a caller (sorry, I didn't get your name, but I had other things on my mind at the time) wanted to contribute the observation that Finder can keep track of disks with the same name. I suspect that it also looks at the date/time the disk was formatted to keep them straight. But the file system in ROM isn't as clever. You run the risk of corrupting your disks if you mix disks with the same name while running an application.

Notes: When you copy a disk with a copying utility, the copy will have both the same name and the same "creation date". So, even the Finder can confuse these pairs of disks, corrupting both if used together. When you make such a copy, put one of the disks away in a safe place. Also, capitalization isn't significant in names. Upper case letters are treated the same as their lower case counterparts.

Q: How do we wire a PC to a Mac to transfer files (using communication programs on each machine)?

A: PC (DB-25) -> Mac (DE-9), or Mac+ (mini-DIN-8): 1 -> Shell, Shell; 2 -> 9, 5; 3 -> 5, 3; and 7 -> 3, 4. In addition, on the PC's DB-25, jumper pins 4 and 5 together, and 6 and 20 together. On the Mac end, also jumper pin 8 (Mac or Mac+) to pin 3 (Mac) or pin 4 (Mac+). Adaptation Electronics (ad in this issue) can make custom cables for you, such as this one.

Q: Help! When I copy system software (System, Finder, etc.) from the Startup drawer of my Hyperdrive to a floppy disk, the floppy disk won't boot on another Mac.

A: There were no "boot blocks" in the Startup drawer. The Hyperdrive doesn't need them, and so you never noticed their absence. To fix the problem, use FEdit (WAP Mac disk 21) to "Write Boot Blocks" to the floppy.

Q: I'm still not satisfied with the (recently updated) Microsoft Fortran (licensed from Absoft). What is the best way to complain?

A: Chuck Bouldin discusses his complaints and suggestions with Absoft directly, and he is interested in passing on other people's suggestions, too. You can reach him at 564-1431 (evenings). Also, Greg Lobdell, Mac Languages Program Manager at Microsoft, is interested in hearing of "wish lists" for Mac Fortran or languages in general. You can write to him at Microsoft Corporation, 16011 NE 36th Way, Box 97017, Redmond, WA 98073-9717.

Q: What do I do about an Imagewriter II that grinds a bit?

A: At the Q&A, someone suggested spraying WD-40 (or a similar product) on the gear wheels on the left every few weeks. By the way, some else suggested that cheap paper with less rag content seemed to work better than the more expensive kind.

Q: Can you print in color, or put the Imagewriter I on an AppleTalk network?

A: No, only the Imagewriter II is designed for these things.

Q: Can you recommend good Imagewriter fonts?

A: The crowd at Q&A recommended the Boston II font (shareware, WAP Mac disk 44), and Bodoni (commercial, Fluent Fonts).

Q: Will the Cauzin SoftStrip printing program work on the Imagewriter I?

A: The answer from the audience was that it works *better* on the Imagewriter I.

Q: Why is the paper rolled backward at the beginning of printing on the Imagewriter II?

A: This question is answered in Tech Note 33, by Ginger Jernigan of Apple, which I reprint here because I think it is of general interest. "First, note that this only happens with pin-feed paper (i.e., not with hand-feed or the sheet-feeder) and only at the beginning of a job.

"It is not a bug, and it is not malicious programming. It is simply that users are told in the manual to load pin-feed paper with the top edge at the pinch-rollers, making it easy to rip off the printed page(s) without wrecking the paper that is still in the printer or having to roll the paper up and down manually. At the end of every {printing}, the software makes sure that the paper is left in this position, leaving the print-head roughly an inch from the top edge."

The Tech Note goes on to say that the since the Macintosh printing standard calls for a 1/2" margin, to print in the topmost allowed 1/2" the paper has to be rolled backward. (Both the Imagewriter I and the LaserWriter naturally leave 1/2" top margins.) "There is no way to eliminate the reverse-feed action, because the user would have to load the paper a different way AND the software

contd.

would have to know that this was done."

"Incidentally, in addition to the paper motion described above, there is also a 'burp.' This is an 1/8" motion back and forth to take up the slop in the printer's gear train. It is needed in the old model printer, and there is debate about whether or not it's needed on ALL Imagewriter II's, or only some, or none. The burp has been in and out of the ImageWriter II code in various releases; right now it's in."

Q: Why does the LaserWriter take 20 minutes (or more!) to print some pages?

A: PostScript is getting a bad rap. While it may not be a terse language, that is not why the LaserWriter prints some things very slowly. I know of two circumstances that cause the LaserWriter to slow up dramatically. The most common is the use of bit-mapped pictures, from Thunderscan, MacPaint, non-laser fonts, and similar sources. (The alternatives are the object oriented pictures, from MacDraw, Excel, LaserWriter fonts, and similar sources.) Not only do these take a long time to send to the LaserWriter, bit by bit, much more time is taken by the "smoothing" process. For drafts, make sure that the smoothing box is unchecked in the Page Setup dialog. Secondly, the frequent changing of fonts within a page image causes the LaserWriter to slow down.

Q: Are you the same "Jon Hardis" that had something in the current *MacUser* magazine?

A: Yes. However, I did not submit the "Tip" credited to me in the "Tip Sheet" column. That was very old and outdated information that they pickup up on the proverbial street. The most current information on patching MacDraw to get 30 fonts in the Font menu can be found in last June and July's *WAP Journal.*

Q: How do you capture text to disk using Red Ryder and an Avatex 1200 modem?

A: "Save text" in the File menu is the key. Things like this don't depend on what type of modem you have. In fact, it's probably a fair generalization to say that the brand of modem you have never matters after the initial telephone connection is made. (The major exception to this are modems that use the Microcom Network Protocol.) Going back to Red Ryder, note that "Archive Screens" only keeps a copy of the information in RAM memory, not on disk, where it is can be lost as additional information comes in. Also, neither of the ways of capturing text, normal or "strip control characters" will give you a disk file that mirrors exactly what you saw on the screen. MicroPhone and MacTerminal are better in that regard.

Q: Under HFS (on the Mac+), why don't folders always show up in the Standard File Dialogs?

A: They don't show up for MFS (single sided) disks. On these old format disks, folders were an illusion maintained only by Finder for its own purposes. Under HFS (double sided and hard disks), folders are an integral part of the file system.

Q: Can I use a LaserWriter with a 128K Mac?

A: No, not well if at all. However, if you get copies of the LaserWriter screen fonts (such as Times and Helvectica), you can compose documents on a 128K Mac that can then be printed from another machine. Note that the page size is different between the LaserWriter and Imagewriter, and some applications (such as MacDraw) are sensitive to this. You may have to reformat documents before you print them.

Even though I am personally opposed to third-party memory upgrades, someone in the audience suggested that you spend the $100 or so for a third-party upgrade to 512K, and then upgrade to the new ROMs and 800K internal disk at an Apple dealer. While the new ROMs are not required, the new Font Manager in them helps out for LaserWriter work.

Q: Any recommendations on where to get the ROM/disk upgrade?

A: There are dealers that advertise in this Journal that offer WAP members 25% off. They are generally well regarded. Also, some other dealers will match these prices if you ask. I caution you, however, that installing the upgrade is not unskilled work. If the disk drive is not aligned carefully with the case, disks can get stuck and cause damage. Choose a dealer you have confidence in. (I haven't had to deal with the service departments yet, and so I can't offer personal testimony.)

Q: I want to get my hands dirty using PostScript. What tools are available to me?

A: PSPrint is a Desk Accessory that comes with *Inside LaserWriter* that allows you to send PostScript code directly to the LaserWriter. PSDump is a public domain program that does the same thing, and it is promised for an upcoming WAP Mac disk. Among commercial products, Cricket Draw, Just Text, and ReadySetGo 3.0 have features that allow you to diddle with the PostScript that they produce. And of course, Fontographer allows you to produce LaserWriter fonts, the characters of which are small PostScript routines. The other ways I know of are first to change a font name to "PostScript Escape". Text in that "font" will be sent as raw PostScript. And secondly, Appendix D of the *PostScript Language Reference Manual* explains how to run PostScript in an "Interactive Mode" using a communication program, such as MacTerminal or FreeTerm (WAP Mac disk 51).

Q: Where can I get more information about support for AppleTalk program development?

A: Call WAP member Jim Lanford and ask for information about the AppleTalk Developers Association.

Quickies: When you paste text from Microsoft Works into MacDraw, all formatting of the text block is kept intact ... Apple produced a short video called "At The Commercials" which showed Siskel and Ebert reviewing Apple's latest ads. Siskel called the "Teach" commercial, the one previewed at the October WAP meeting, the best commercial he'd ever seen ... add to your list of good, Mac-oriented mail order houses Computerware in Palo Alto, CA (800) 323-1155 (they have a storefront operation, too).

MacNovice Column

by Ralph J. Begleiter

Cleaning House

With another year ending, it's a good time to take stock of where you stand in a variety of areas of your life. Your Macintosh system—and your own growth in personal computing—are no exception.

This is a good time to review the way you're using your Mac, to see if it still meets your needs, and to see what improvements you can make to help you work faster and easier.

Now's a good time to look through all your Macintosh disks, weeding-out dead files and reorganizing live ones so they're easier to use in the coming year. For instance, with the tax law changes imminent, it's a good idea to give some thought before January 1 to how you'll keep your tax records in 1987.

Are you using a "spreadsheet" program to keep track of charitable contributions and other tax deductions? If so, this is a good time to review that spreadsheet, rearrange it, check its calculation formulas and be sure it accomplishes what you need. Are its categories still accurate? Have your record - keeping patterns changed in the past year? Should you change your spreadsheet format to reflect that?

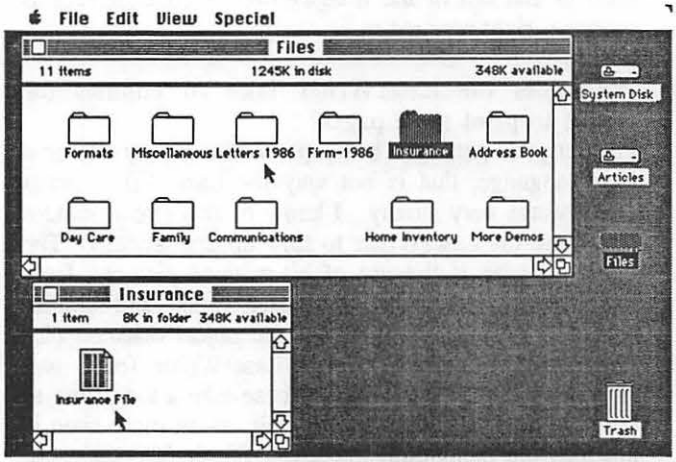
Or, should you change the type of computer program you're using to keep tax records? There are new Macintosh programs which have become available in the past year or so which can make this kind of record-keeping a snap. The new spreadsheet, "Excel," for example. Its powerful calculating abilities, and its flexible page-appearance formatting tools, can make your tax records easier to read and to use when tax time comes around.

If you're using a data base program to keep your records, there are new, more flexible programs available for this, too. Prices have come down on these advanced data bases, and they have become easier (more intuitive) to use, too. "Filemaker," for instance, allows you to make up your data record pages to look exactly like any printed form you'd like, with boxes, lines and shading to help you find key pieces of information quickly.

And don't forget the new, more powerful outlining programs, such as "MORE!" These have now been equipped with some mathematical calculation features. So you can store and organize financial information, such as tax and expense report data more easily than before. While you might never have thought of using such a "word-processing" program for this kind of task before, now is a good time to consider it.

At year's end, it's also a good time to sort through your "letters" files, trashing letters for which you'll have no need in the future, and moving others worth saving into "archive" files—perhaps on separate disks.

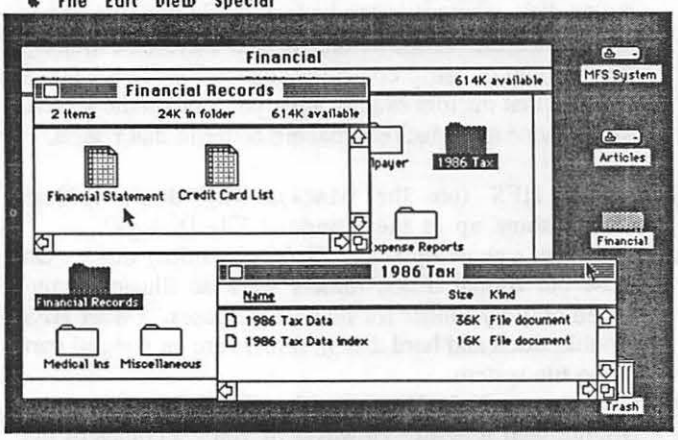
Remember, if you're working with a one-disk-drive Macintosh, you can avoid lots of disk swapping if you keep your word-processing program and System files on the same



Word Processing Files

disk with your documents files. So space is at a premium. Clear away some of the dead wood by starting a new disk called "Archives 1" and copying old letters and files onto it—without copying the MacWrite or System files. Sure—it'll be a bit less convenient to look at those archived documents in the future, but how often do you need to do that anyway? Don't forget to return to your original word-processing disk and throw away all the files you just copied onto the "archive" disks. You'll be pleasantly surprised at how much space you can free-up on your work disks!

If you work with a two-disk-drive Macintosh, you've probably got your word-processing and System files on one disk—and your letters and other files on other disks. That's an ideal way to work. And at year's-end, that makes "cleaning house" even easier. Start up your word-processing program, open each file as you review it to decide whether to keep it. If you decide to "archive" a file, choose the "Save As..." command from the file menu; insert the "Archive" disk in your second drive; click "Drive" in the dialog box so "Archive" shows in the window; then execute the "Save As..." command by clicking "SAVE." Your file will now be copied



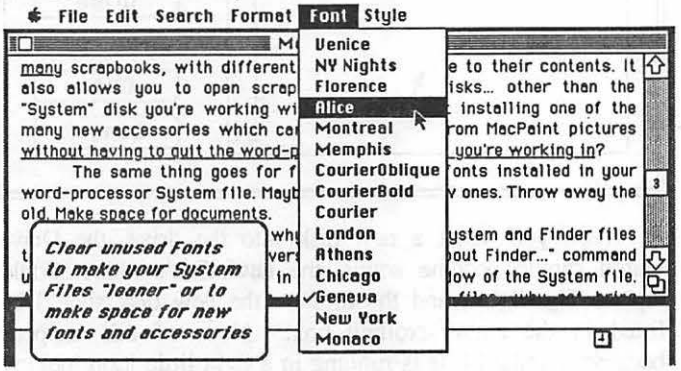
Financial Files

contd.

onto the Archive disk. When you return to the Finder, throw away all the files you copied from the active-files disk, and you've made space again!

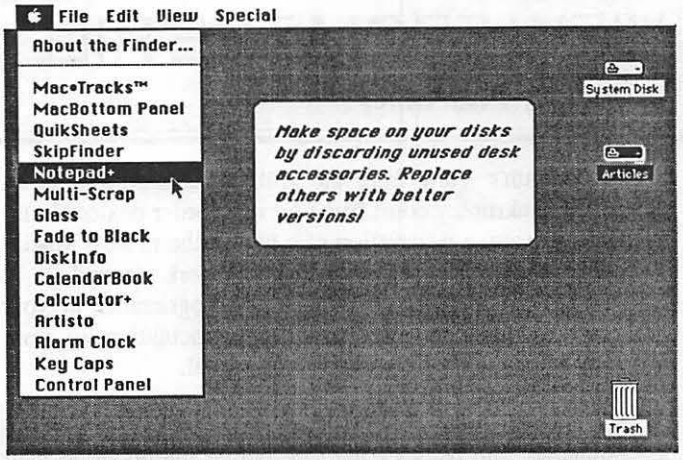
Once you've created "Archives" disks, you can add to them annually. Or, if you prefer, you can label them by year, saving all of 1986's "dead" files on an "Archives '86" disk. Or, in yet another variation, you could create archive disks by category of document. There might be an "Archive/Letters" disk, an "Archive/Expenses" disk, an "Archive/Financial" disk and an "Archive/Artwork" disk, for instance.

Cleaning house should extend to other Macintosh areas, too. It's a good time to review the contents of your "System" files. Are you using all the desk accessories you've placed under your Apple Menu? Do you really need all the fonts you've installed in your System file? Are there some new accessories and fonts you'd like to install?



Remember that on a single-disk-drive Mac, the size of your System file is critical. A file too large can prevent efficient work with a program and its documents. It's prudent to trim the fat from your System files. Look back at the fonts you actually use to write your letters and other documents. See if you really use the Calculator desk accessory. (Sure, it's classy, but isn't it easier to click on the buttons of a "real" calculator than to maneuver the mouse around the Macintosh screen calculator?) Do you really need the Control Panel on every work disk? No. Once you've adjusted the settings on your Mac, you can probably get away with having the control panel on one disk, for occasional changes. Getting rid of the Control Panel, the Calculator and the Puzzle can save disk space! Consider removing the Alarm Clock, too, unless you find it convenient to tell time by looking on the screen of your Mac.

You might want to install some new, more useful accessories. How about a better Notepad, with more pages, a "search" capability and other features of a real word processor. Many of these are available now, including some good "shareware" notepads. And how about the Scrapbook? Are your Scrapbook files so large that it's cumbersome to click through them to find the clipping you're looking for? Try installing a different scrapbook accessory, such as "Multi-Scrap," which allows you to establish many scrapbooks, with different names appropriate to their contents. It also allows you to open scrapbooks on other disks—other than the "System" disk you're working with. And how about installing one of the many new accessories which can "clip" artwork from MacPaint pictures without having to quit the word-processing program you're working in?



The same thing goes for fonts. Review the fonts installed in your word-processor System file. Maybe install some new ones. Throw away the old. Make space for documents.

And while you're at it, why not check your System and Finder files to be sure they're the latest versions? Use the "About Finder..." command under the Apple Menu—or look in the "Get Info" window of the System file. As long as you're revamping your basic System files, why not bring everything up to date at year's end? Careful, though. Don't forget to "Save" your old System and Finder files on another disk while you make the changes—just in case there's a problem. Then you can always go back to "old reliable." Also, if you save the old System file, and you want to use many (or all) of the same desk accessories and fonts, you can simply transfer them from the old to the new using Font/DA Mover, instead of having to search through scattered other disks to locate the original fonts again.

If you use one of the many Macintosh appointment diary programs, now's a good time to go through its memory and transfer important dates into next year's calendar, including one-year-anniversaries of important events in 1986. Then you'll start the new year with an up-to-date calendar and planning tool.

As long as you're reviewing the state of your Macintosh art, why not decide how you plan to store your files for the next year. You could create separate disks for Financial, Word Documents and Artwork. Or, you could separate materials on disks by Month.

Giving some thought to these housekeeping chores now can make your work easier later in the year. And clearing the decks of old documents and computer programs can free valuable space on your disks and your Macintosh desktop!

We need a volunteer to prepare a column each month on the best of the Macintosh items from the Telecommunications Systems (BBS). Call the office if you are interested.

VIEW FROM THE HILL
by Rich Norling

This month's View from the Hill includes comments on the recent bankruptcy court filing by mail-order dealer Northeastern Software; a description of a bug in the newest Macintosh System file and how you can work around it; a Christmas book list for the Macintosh programmer in your life; and tips on how to make the punctuation in your Macintosh documents look more professional.

Northeastern Software

Most mail-order dealers of computer hardware and software are reputable, and try very hard to deliver the goods to their customers on time. Sometimes things get delayed unavoidably because of late shipments from software publishers or hardware manufacturers. But for the most part, the goods get shipped within the Federal Trade Commission's required 30 days (if they didn't advertise a different shipping period, the FTC requires mail-order companies to ship within 30 days after getting your money, or to send you a letter notifying you of the delay and offering a refund).

Northeastern Software Inc., of Shelton, Connecticut, ran colorful 2-page ads in many computer magazines, but apparently failed to fulfill its promises. I think I remember seeing a warning about Northeastern's poor service a few months ago in the pages of this Journal. In any case, the Better Business Bureau, the Connecticut Department of Consumer Protection, and Postal Service investigators received so many complaints that all three started investigations of Northeastern Software.

The magazines that published Northeastern Software's ads also received complaints about the company. The publishers of several of the magazines, including MacWorld and MacUser, acted to protect their readers by informing Northeastern that the magazines would not accept any further advertising until Northeastern could demonstrate that it had satisfied all complaints and would fill future orders promptly.

On Thursday, October 30, Northeastern Software filed for protection from creditors in bankruptcy court in Bridgeport, Connecticut. According to a recent article in the Wall Street Journal, the owner of Northeastern Software blamed the troubles on cash-flow problems resulting from price wars and high advertising costs.

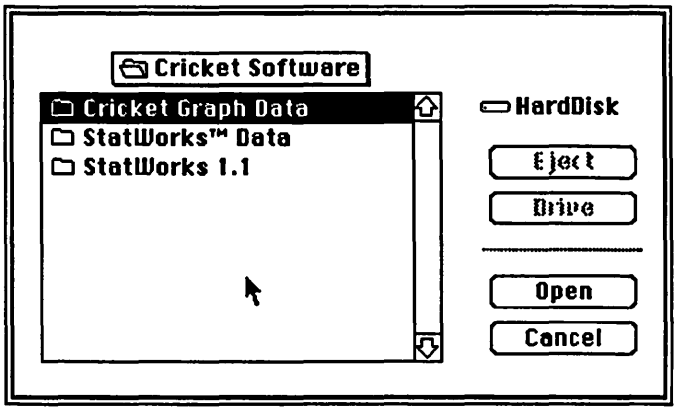
It is possible that Northeastern was simply a sloppy business that failed miserably. But some of the investigations are continuing to determine whether any formal charges should be filed. In either case, people are justifiably angry because they lost money for orders placed in good faith. I would not expect to see any more ads from Northeastern Software.

Bug in System 3.2 (and how to get around it)

The Macintosh "open file" dialog (known to programmers as SFGetFile, Standard File, or PACK 3) performs many wonderful feats. Among them is supposed to be recognizing when you insert a new disk, and switching its list of files to show the files on your newly-inserted disk.

Well, in System 3.2 it doesn't. Something broke, and the problem wasn't discovered until the day after System 3.2 was released by Apple. Apple now knows about the bug, and I am sure it will be fixed the next time Apple releases another revision of the System file. In the meantime, here's how to get around the bug.

In case you have forgotten, here is a reminder of what the "open file" dialog looks like:



When you insert a new disk into the drive, the **Drive** button should become active, the new disk's name should replace **HardDisk**, and the files on the new disk should be listed in the main scrolling box. None of this happens because Standard File is running in a tight little loop looking for events in its own window (and forgetting to check for disk insertion events).

You can help Standard File get out of its loop long enough to recognize the new disk. All you have to do is put the cursor anywhere in the file listing area, as shown above, and click the mouse. That's all there is to it! Think of it as giving a little wake-up call. Much easier than taking your Mac to a dealer for a disk drive inspection, and that wouldn't solve this problem anyway.

Christmas Book List for the Macintosh Programmer

What is needed on a fully-equipped Macintosh programmer's bookshelf? Well, nothing, since the programmer is already fully equipped (or is it the bookshelf that is fully equipped?).

If you are willing to keep reading after that one (I promise that's the worst joke you'll see in this column), I'll give you a list of some of the reference books that you could get for the bookshelf of the Macintosh programmer on your Christmas list. The books I am listing here are mainly reference books, rather than books that teach a particular programming language. Here are some of the books I find useful...

Inside Macintosh, Volume 1, $24.95; Volume 2, $24.95; Volume 3, $19.95; Volumes 1-3 hardbound, $79.95; Addison-Wesley. The essential reference material for Macin- tosh programmers, written by Apple Computer. Volume 4, which covers the 128K ROM in the Macintosh Plus and 512K Enhanced, should now be available but I don't know the price yet.

Stephen Chernicoff, Macintosh Revealed, Volume 1, Unlocking the Toolbox, $27.95; Volume 2, Programming the Toolbox, $29.95; Hayden Book Company. Covers much of

contd.

the same information as Inside Macintosh, but many people find Chernicoff's narrative style and detailed examples easier to learn from than the reference style of Inside Macintosh.

Scott Knaster, How to Write Macintosh Software, $27.95 (I think); Hayden Book Company. I can't say enough good things about this book. It is essential reading for anyone who has gotten to the point of writing a complete Macintosh program. Informative, entertaining—and a whole lot cheaper than the travel cost to California and $500 tuition you could spend to learn the same material at Apple's MacCollege!

Paul Heckel, The Elements of Friendly Software Design, $8.95; Warner Books. A classic that treats designing friendly software as a communications craft. Apple's breakthrough with the Macintosh technology was not just making something that works, but making it also easy to learn and fun to use. Paul Heckel's book contains a lot of suggestions that may help you make the transition from merely "writing a program" to designing friendly software.

Kurt J. Schmucker, Object-Oriented Programming for the Macintosh, $34.95, Hayden Book Company. If you are interested in learning about object-oriented programming, this is the book for you.

Apple Numerics Manual, $29.95; Addison-Wesley. Gives the intimate details of Apple's SANE numerical computation environment. Part of the Apple Technical Library, it's a little dry in places, but essential if one of your goals is computational accuracy.

Motorola, M68000 16/32-bit Microprocessor Programmer's Reference Manual, fourth edition; Prentice-Hall, Inc. Motorola's official reference manual for the 68000 central processor chip that makes the Macintosh do its stuff. Does not teach how to write assembly language programs. I used 68000 Assembly Language Programming by Kane, Hawkins & Leventhal ($15.99, Osborne/McGraw-Hill). There are several newer books about programming the 68000 that I have not read.

Motorola, MC68020 32-bit Microprocessor User's Manual, Second Edition; Prentice-Hall, Inc. Again, the official reference manual. Why not prepare for whatever the future may bring?

Better Macintosh Punctuation

Whether we learned to type on a typewriter or a computer keyboard, most of us have bad habits when it comes to punctuation. In many cases, the design of the keyboard contributes to the bad habits.

The Macintosh keyboard, for example, has a key with the ' and " characters for single and double quotation marks at the right side of the keyboard. The more correct ' and "" characters are not labeled on the keyboard—but unlike many computers, the Macintosh does have them.

If you want your work to have the look of professional type, here's how to get the real punctuation:

Instead of	Use	
'	'	OPTION-SHIFT]
"	"	OPTION [
	"	OPTION-SHIFT [
--	—	OPTION-SHIFT - (hyphen)

I think that last one, a long dash, is what printers call an "em" dash. If you want to go a little farther, you can use OPTION ; to get an official ellipsis (...) instead of typing three periods in a row, and use OPTION - instead of just a plain hyphen when what you really want is a minus sign (–).

I haven't taught all my fingers the proper reflexes to be sure I always use the correct punctuation symbols—so when it matters, I search the document for the old symbols after I have finished typing.

Rich Norling is coauthor of StatWorks™ and Cricket Graph, and is completing a new Macintosh application called Pict-O-Graph™. He wrote the book Using Macintosh BASIC, published by Osborne-McGraw/Hill. Rich is President of Language Systems Corp.

"Your DeskTop Publishing Center"
PC Resources
1850 Centennial Park Drive
Suite #300
Reston, VA 22091

Self-Service!
LaserCopy Typesetting
PCR Users Group Member's **50¢** an original*
Two-Color Transparencies
• From black & white originals •

WAP 86117
Appointments required
Clients responsible for disk back-up
Prices subject to change without notice
* Plus Resource Time - $10/hour (Min. $5)

Appointment Scheduling & Messages
860-1100

Custom Cables and Accessories

Tailor made for the cost of ready made

any length or configuration
Apple, AppleTalk and other brands
Teflon and PVC cables
switch boxes
power supplies to adapt accessories to MacPlus

Write to
Adaptation Electronics
20315 Grazing Way
Gaithersburg MD 20879

Phone for fast action
(301) 948-7440

Hours:
Weekdays: 9 a.m. to 9 p.m. EST
Saturday: 9 a.m. to 3 p.m. EST

Maryland residents add 5% sales tax. Apple and Appletalk are trademarks of Apple Computer Co.

TAKING CARE OF MACINTOSH

by Jon Thelin

"Reprinted from the August 1986 issue of 'Get Info', the monthly journal of Club Mac Midwest - Des Moines Iowa. Copyright © 1986 Club Mac Midwest. All Rights Reserved."

Probems with printing on the Imagewriter?

On rare occasions, the Imagewriter printer seems to become confused and prints all 'U's or refuses to print at all. This is usually not the printer's fault. This phenomenon is caused because the Mac can sometimes (especially after a System "bomb") have certain important information in it's "parameter RAM" memory become garbled. The speed and other settings for the serial ports on the Macintosh are stored in this "parameter RAM"—an area of memory that the battery will maintain even when the power is off or disconnected. These values can sometimes get mixed up by a "bomb", or if your battery is getting old (they last about 2 years). To cure this problem, remove the battery for about 30 seconds and then replace it. This will make the Macintosh forget the settings and restore them back to the "default" settings for the Imagewriter. You may have to reset some of the Control Panel settings as well (such as the Date and Time) after this, because the battery maintains these settings (except for the Desktop pattern) also. If the printer still won't work correctly, check the switch settings on the Imagewriter and/or replace the Imagewriter file icon on the disk and try again. If none of the above steps work, take the Mac and the printer to your authorized Apple service center.

Heat and surging power: dangers to the Macintosh

The Heat: Anyone who has worked with a Macintosh has probably noticed how warm the top left vents can get (useful for warming your hands during a cold Iowa winter...). Don't panic...this heat emission is normal. Cooling on the Macintosh is achieved using convection cooling (heat rises out of the top pulling cooler air into the Mac through the lower vents). This cooling technique, however, is sometimes not enough (especially if you are using the Macintosh in a warm environment, or outside). The Macintosh's temperature can easily approach 100°F on a warm day, reducing its overall life span. Most electronic components can operate at up to 120°F before problems occur. Physical deterioration or damage of micro-electronic components can occur faster at temperatures higher than room temperature. Simply speaking, the warmer micro-electronic components get, the shorter their life expectancy is.

The Power: The power coming from the wall outlet can contain more than what the Mac bargains for. Areas with a lot of lightning activity or motor driven equipment on the same curcuit can generate 'transient surges' in excess of a thousand volts. A 'transient surge' can be best defined as a VERY fast, temporary increase of energy added to the AC power wave. These power surges can obliterate components instantly, or some components might not fail immediately, but instead fail weeks later.

A Solution: A Device that acts as a cooling fan and a surge suppressor seems to be the perfect solution for both of these problems. Most types of fan units for the Mac contain surge suppressors and fans, as well as some type of switching device for peripherals (for convienence). These units keep the Mac at room temperature consistently as well as filter out most of the noise and power surges that occur. It's still a good idea, even with a suppressor installed, to unplug it during lightning storms. Not even a good suppressor can stop the destructive potential of a direct lightning strike!

What to do if your 800k disk jams

There are 2 possible jams that can occur with diskettes in the 800k drives. *WARNING*: in both of these cases, DO NOT attempt to pull the diskette out of the drive! This can cause damage the drive for which replacement may be neccessary (at a substantial cost).

1. A diskette, in the drive, does not fully eject.

When this occurs, try pushing the diskette back into the drive and eject again. This can be achieved by holding down the <SHIFT> and <COMMAND> keys and pressing the '1' (for the internal drive), or the '2' (for the external drive). Attempt this 2 or 3 times until the diskette comes out all of the way. If the diskette still hasn't come out properly, you can insert a large paper clip into the small pin hole located beneath and to the right of the slot where the diskette goes. Press the paper clip in and the diskette should eject manually. If all of these procedures fail, you should shut the Mac off and take it into your Authorized Apple Service Center.

2. A diskette, during insertion, doesn't go in all of the way, but the drive "clicks" down anyway.

When this occurs, hold down the **SHIFT** and keys while pressing the '1' (for the internal drive), or the '2' (for the external drive). This should push the diskette back out. You can also insert an unbent paperclip carefully into the tiny hole at the right edge of the disk drive slot (at least, on the internal disk drive).

Be aware of the factors which can affect the insertion and ejection of a diskette:

- A diskette should be inserted by pressing the diskette gently into the drive. Avoid grasping the diskette.
- Do not put diskettes into the drive that have labels more than 2 thick on them. Remove excess labels before putting on a third.

How to use an external 800k drive on Mac 512k

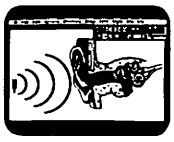
The external 800k drives will work on a Macintosh 512k that does not have the Apple ROM/Drive upgrade. The following files MUST be in the **System Folder** on the startup disk (400k internal drive) to make the 800k external drive work properly:

- System (version 3.2)
- Finder (version 5.3)
- Hard Disk 20 (version 1.1)

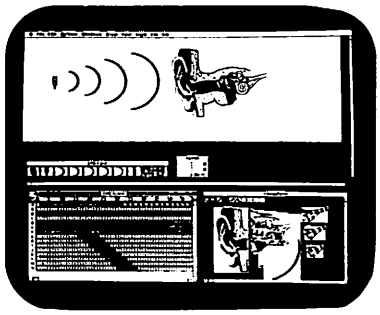
These are the latest versions of these 3 files. The file 'Hard Disk 20' will allow you to use the Hierarchical File

contd, on pg 71

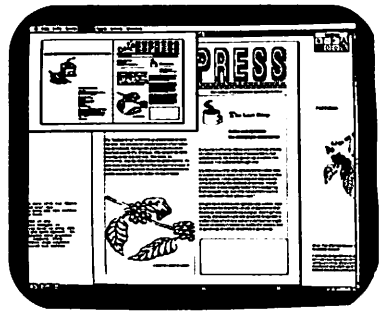
See What You've Been Missing!



Capture Your Active Imagination



Enhance Your Publishing Performance



The MegaScreeN™
by
MicroGraphics Images Corporation

The MegaScreen™ significantly enhances the performance and capability of the Macintosh Plus™ as a Professional Desktop System.

* High Resolution (1024 X 1024)
* 5 times the work space
* Video Output (Fully NTSC compatible)

The MegaScreen Video System provides a high-resolution output from the Macintosh Plus computer to a high resolution monitor. The MegaScreen comes as a 19" Monitor and components installed inside the Macintosh Plus. Cabling to the 19" diagonal monitor and other video equipment is passed through the security port of the Macintosh Plus. The MegaScreen is compatible with off-the-shelf Macintosh software.TheMegaScreen requires no alteration to Macintosh system, finder or ROM. Installation of MegaScreen components does not interfere with normal Macintosh use. Also MegaScreen works with standard home and industrial video tape equipment. The MegaScreen is not a user-installable product, and must be installed by an authorized dealership technician.

For Information contact your Independent Representative

William Brucato

Write to:
9835 Hagel Circle
Lorton, VA 22079

Phone:
(703) 339-8929

MegaSceeen™ is a registered trademark of MicroGraphics Images Corp. Macintosh Plus is a product of Apple Computer, Inc. Macintosh™ is a registered trademark of McIntosh Laboratory,Inc. and is being used with express permission of its owner.

Softviews by David Morganstein

MacEqn. (Dennis Venable) If you need to type complex mathematical formulas into your text, you will find the MacEqn desk accessory a surprisingly powerful yet extremely low-priced solution. MacEqn can be opened within any word processor. With it you can create a complex formula which can be Copied and then Pasted into your word processor. While occupying a meager 18K of space in your system file, it offers direct entry of integral signs and limits, summation signs and limits, nested fractions, overbars, matrix/array notation and more. You can create simultaneous sub and superscripts as well as diacritical marks (those squiggly lines and hats that sit over letters). When the formula is complete, you select Copy, close the DA and Paste the formula where you want it. By storing the formula in a Pict format, MacEqn insures the highest quality print appearance should your file be printed with a Laserwriter. But enough discussion, let me show you a few of its abilities.

$$\left[\int_a^b f(x)\,g(x)\,dx\right]^2 \le \left[\int_a^b f^2(x)\,dx\right]\left[\int_a^b g^2(x)\,dx\right]$$

$$M = \frac{\sum_{i=f_i}^{f_f} v_i^3 R_i}{\frac{R_i}{2} + \sum_{i=2}^{f_c} v_i R_i}$$

The Manual. This DA comes with a 25 page manual. Although the manual contains neither a table of contents nor an index, it does provide all of the information you will need to use MacEqn. I suggested to the author that he add a simpler introduction that avoids a few jargon terms which I found distracting to the first-time user. Once you have learned MacEqn's easy method for constructing fomulas, you will be less intimidated by words like "Stack" and "Level" used to describe what MacEqn is doing.

MacEqn uses a stack-based operation to keep track of the formula entry process. The Stack remembers what function you are in as you move more deeply into levels of an equation. Say you begin an integration formula. This starts the stack, a kind of memory as to what needs to be completed. Further, let us say that within the integral you need to enter a fraction. This takes you one step further into the stack. Now a symbol requires super or sub-scripting. Again, one more step into the stack.

As you build a formula you are at one of two physical positions in an option such as super or sub-scripting. For example, you may be entering the numerator or the denominator of a fraction, or the upper or lower integration limit. In every case, the Enter key is used to complete the current level and move to the next level or exit from that function. When you have completed the entry at the current level, the Enter key is used to tell MacEqn you are done and the cursor should return to the Level where it began before the current operation. If you have completed the super/sub-scripting, the cursor returns to the base line. If you have completed a formula which is to appear in "large brackets", MacEqn types the final right bracket and returns the cursor to the base line, etc. Whatever the case, the display tells you where you are through the use of words like "Stack" and "Level".

If this discussion sounds needlessly complex, the use of MacEqn is not. The Stacks and Levels jargon may help guide you through the formula entry process, but you don't really need to understand it to enter the formula. As an example, consider a formula that has an integral involving a sub or super script in it, say for computing the variance of x. That is,

$$\sigma_x^2 = \int_{-\infty}^{\infty} [x - E(x)]^2 f(x)\,dx$$

Let's look at the steps needed to enter this equation and the display provided by MacEqn as we move through the formula. The Integral sign is produced by MacEqn through a menu selection or alternatively by a command-key equivalent. The small dagger in the screen shots below is the cursor, marking the current text entry point. After you select Integral entry and MacEqn produces the integral sign, the dagger moves to the bottom of the integral sign, ready for the lower limits. Notice that the Stack in the first shot is now set to Integral and the dagger is ready for entry of the lower limit. You will tell MacEqn you have finished the integral limits by striking the Enter key. Notice that the Level is Lower 2. The Lower implies we are working on the lower of a pair of entries. In the second screen shot, we have typed the Enter key after the -∞ symbol to move to the upper limit. The dagger follows the upper limit of ∞. The Stack is still set for Integral but the Level has now changed to Upper 1, indicating an "upper" part of a pair.

Finally, the Enter key moves the dagger to the base line and removes the Integral operation from the stack which is cleared. We continue entering the formula, till we need a superscript 2. After SuperSub is selected in the MacEqn menu, the dagger moves first to the lower level where characters in a subscript can be typed. Since there are none,

contd.

$$\sigma_x^2 = \int$$

Font: Times Size: 9 Stack: Integral Level: Lower 2

$$\sigma_x^2 = \int_{-\infty}^{\infty}$$

Font: Times Size: 9 Stack: Integral Level: Upper 1

$$\sigma_x^2 = \int_{-\infty} [x-E(x)]^2$$

Font: Times Size: 9 Stack: SuperSub Level: Supscript 1

we just type enter and the dagger moves up to permit the superscript to be entered. When the superscript is completed, an Entry moves the dagger back to the baseline to complete the formula.

The weak part of MacEqn is its limited editing and tabbing features. It is possible to position the cursor in some parts of the equation and make changes. However, it is likely that you will erase invisible commands and change the appearance of the formula in the process. A yet to be released version (2.0) is promised to enhance the DA in this areas, but for now, do it right the first time and you won't have to worry about corrections.

I do not know of any other way to enter elaborate formulas into Mac word processing programs as easily with virtually what you see is what you get results. One drawback of the MacEqn approach is that the formulas are not pasted into your word processor as individual characters but as a graphic. You can not edit the formula within the word processor. Rather, you must copy it back to a program like the MacEqn DA or to MacDraw to make changes. Many technical formulas are followed by numerals in parenthesis to number them within the document. MacEqn does not currently allow you to easily line up these numerals between pasted graphics. As I mentioned, Version 2.0 is supposed to offer both a ruler and tab support to deal with this limitation.

Software for Recognition Technologies, 110 University Park, Rochester, NY. 14620. Phone (716) 461-0923. Price $44.95.

Digit-Art Laser Graphics. A three disk collection of MacDraw art work, the Digit-Art disks are named Fonts, Clip Art and Art Room. By Copying selections from the set, you can enhance your art work using these disks as a library of attractive clip art. While these MacDrawings can be printed on an Imagewriter, they really shine when sent to the LaserWriter. Digit-Art wisely choose to use MacDraw for their format since re-sized or re-shaped MacDrawings do not distort as badly as MacPaint dot-oriented graphics. MacDraw uses Quickdraw to create its images. Quickdraw calls are convertible to the Laserwriter's PostScript format for the sharpest results.

The Fonts disk is something of a misnomer. The disk contains six "fonts" but, unfortunately, not fonts in the usual Macintosh sense. They are more like stencils. These "fonts" are MacDrawings which contain attractive alphabets. You open a Digit-Art font file, select the letters you need by shift-clicking, do a copy to the clipboard and subsequently paste the selected letters into your own Drawing. As you can see in the image below, you can come up with artistic results using MacDraw's duplicate, resize and fill options.

I had the greatest difficulty resizing the letters. The accompanying 14-page manual indicates that most of the fonts will distort when re-sized because each is created as a collection of smaller graphic objects. The letters must be manually aligned vertically and horizontally. Vertical alignment is easy for most of the "fonts" by relying on MacDraw's Align command. However, one font, FreeStyle, had letters of different sizes so that alignment of their tops would not do the job. I had to enlarge the "r" in the word "graphics" seen below to make it look in proportion. Digit-Art would have served us better by creating true Macintosh "fonts" in varying sizes. These would have been easier to work with.

The second disk is called Art Room. It contains various borders, symbols and forms, as well as a set of advertising templates. While the borders and symbols may be of use, the forms seem out of place in this collection. I doubt that the creation of Invoices, P.O.s or tickets are practical uses of MacDraw. Two of the more intricate boarders, Victorian and Flowers, are shown below.

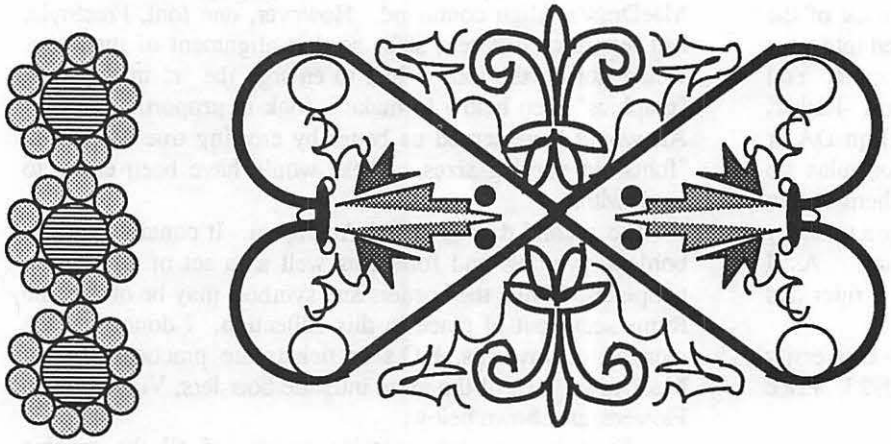
The documentation contains images of all the graphic objects. Much to my dismay, the images are not labelled. Even though the manual shows which "folder" the image is in, the disks are MFS formatted so that the Folder names do not appear in the miniFinder window when you are trying to select a specific file. All you see is an alphabetic listing of all files on the disk. Since these file names do not appear in the manual you have to guess which drawing is which. While some are obvious, the manual should show the file name next to the picture for easy identification.

Another small gripe. The manual indicates that a 128K Mac will suffice. This is true for most of the files, but not all. The Victorian file, for example, needs a 512K Mac's memory to load. Most of the files contain duplicates of the

contd.

DIGIT ART

LASER
LASER
LASER
LASER
Graphics



same pattern, increasing the file size. This is an oversight on Image Club Graphics part and is not necessary. By storing only one copy of an image per file, a 128K machine would have been able to read the largest files. MacDraw allows the user to quickly duplicate selected objects. A more suspicious mind might think that Image Club used the duplication of objects as a way to fill up their disks. Even their "font" files have multiple copies of the same letter.

The images are good and many could be quite handy. The documentation could be improved to allow easier access. If you do a lot of graphics and use a Laser Printer, you might find this package helpful. Image Club Graphics, 2828 19th Street, N.E., Calgary, Alberta, T2E 6Y9. Price $99.00.

THE DATA DESK 1.0: A Review

by John Rogers and David Morganstein

The Data Desk is unique among Mac statistical packages. It does not require the user to learn a command language, nor does it present the user with a spreadsheet-like display of a data set. It offers its own version of a Mac-like desktop wherein variables and results are icons to be opened and moved about.

The Data Desk has been described by its authors as "an easy to learn yet powerful desktop environment for data analysis and statistics. On The Data Desk you will find no hard-to-learn command syntax, no tedious multiple choice menus, and no restrictive data sheets. The Data Desk is a full-function statistics and graphics package that gives you the handiness of a desktop environment, the power of interactive statistical graphics, and the sophistication of computing algorithms designed for state-of-the-art graphics and numerics." This description is basically correct, although we would down play "full-function". What The Data Desk does, it does well. The program will meet the statistical analysis needs of those requiring descriptive statistics and graphics, including 3-D rotating plots, two-way contingency tables, multiple regression models with diagnostics where stepwise procedures are not needed and one or two-way ANOVA models.

By the way, in this review we will try to objectively describe the program, however, as statisticians we have opinions on software quality and proper statistical procedures. We have not tried to hide our opinions, [sometimes indicated by square brackets].

Starting Up and Using *The Data Desk.* With the package you get a program disk, a data disk with 11 sample data sets, a 175 page manual teaching statistical methods and a 52 page supplementary notes manual providing instruction in use of the program. The Data Desk is a large program (269K), leaving little space on the program disk (with 400K drives) for both the program and data. Data can be stored on other disks. To the authors' credit, the program is not copy protected.

The Data Desk mimics the Macintosh desktop. In The Data Desk a datafile icon can be opened to show the icons for variables (a column of data), derived variables (equations for combining variables into new variables), plots and histograms, and other analyses results. These icons can be clicked on to reveal their contents. Each icon opens into its own window. There is even a trash can. To "forget" a result such as a histogram, it is put in the trash can. Icons can be grouped into "folders" called bundles. Figure 1 shows some of the icons.

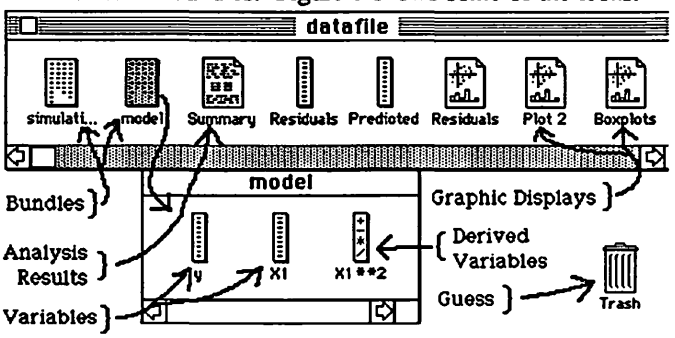


Figure 1

Using The Data Desk involves:

1) Selecting the icons (variables) to be used and

2) selecting the operation to be performed on the selected variables. Only those operations which are appropriate for the selected variables are highlighted in the menus.

The desktop-icon implementation in The Data Desk works well, we like it. Its advantages are:

1) Both data and the results of data analysis can be easily stored and retrieved. Most competing programs save the data but depend upon you to save the results of the analysis.

2) The clutter of accumulated, overlapping windows (produced by some programs) is avoided. Any window can be closed to get it out of the way, and later reopened by double clicking on its icon.

3) The icons can be easily rearranged on the desktop, making selection of variables for analysis easier. Groups of variables can be placed in a bundle. All variables in the bundle can be selected by clicking on the bundle icon.

User selectable options for several commands customize the output to your needs without multiple menu selections each time a command is used. These output options help to reduce clutter. For example, The Data Desk lets you specify which summary measures to calculate and display; whereas, some programs provide a host of summary measures such as mean, standard deviation, median, skewness, kurtosis, maximum, etc., whether you want them or not.

Data Management. Data entry and editing is very flexible, although not entirely intuitive. It seems to be easy to use after reading the manual and trying it. Data can be entered as numbers or characters (such as categorical data, "male" "female"). When entering or editing data for several variables, the user specifies the order in which the variables are entered by the order in which the variable icons are selected, avoiding a rigid spreadsheet approach which keeps data in fixed column order. Data entry from foreign sources via the clipboard or a text file is fully supported and documented.

Data manipulation options include sorting, ranking, transforming, creating patterned data (such as even integers from one to 50), and creating random data from several distributions. Data sorting and ranking are very flexible and easy to use.

Derived variables are variables defined by a function of other variables. The function is entered on the keyboard using standard algebraic notation familiar to programmers. While this method of entry assumes knowledge of function names which may require looking at the manual, it is very flexible and easy to use. Another statistical program, StatWorks, (co-authored by one of the reviewers) uses only mouse operations to specify simple transformations. Compared to StatWorks, transformations involving several variables are a lot easier and quicker to use. Recoding data using transforma- tions is possible though not straightforward. We hope that future versions of the program make recoding easier.

Creating variables of random numbers is direct. Multiple

contd.

variables can be created at the same time. While this may seem esoteric, we appreciate being able to generate multiple columns with one command.

Statistics Using One or Two Variables. All the usual descriptive measures of location and spread are available plus skewness and kurtosis. The summary statistics can be put into variables for later use [good]. Hypothesis tests and confidence intervals for sample means are based on either a normal (z-score) or t distribution. Hypothesis tests and confidence intervals for sample variances are based on a Chi-square distribution. Variables can be compared to other variables (using pooled or unpooled variance) or to a constant. With multiple tests or confidence intervals, the overall alpha can be adjusted using a Bonferroni adjustment [good].

Statistics Using Many Variables. The Data Desk offers more sophisticated procedures using several variables. These include regression (simple and multiple and polynomial using transformations), one and two-way balanced analysis of variance (anova), correlation tables, and contingency tables. These procedures are very easy to use. The regression command saves the residuals and predicted values for later analysis and plotting [good]. Additional diagnostic values can also be calculated, such as leverage, studentized residuals, and cook's distance [good]. Limitations of these commands at the present time are: the residuals and predicted values from an anova are not saved, and the program does a chi-square test of independence for contingency table but does not display either the degrees of freedom for the chi-square value or its significance level.

Graphical Displays. The manual is careful to point out that data displays in The Data Desk are for analysis, to answer "What do we want to know about the data?" and not for presentation i.e. "What do we want to show about the data?". For presentation graphics, The Data Desk results can be enhanced by saving them in MacPaint form and working on them with other programs.

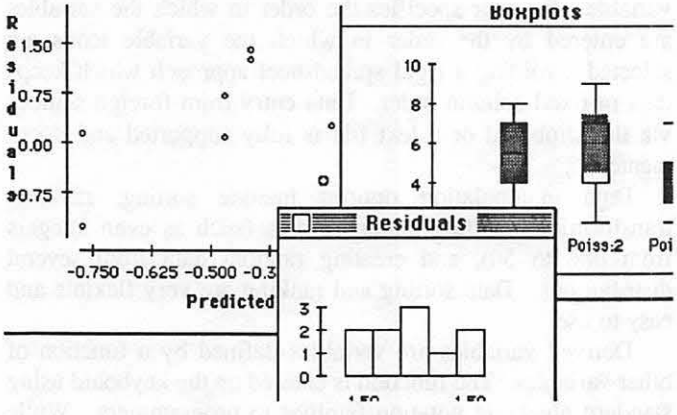


Figure 2

The display options include histograms, scatterplots, boxplots and 3-dimensional rotating plots (see Figures 2 and 3). While we would like to see other options such as multiple plots on the same axes and line plots, the available options are effective, and easy to use. We particularly like the 3-D rotating scatter plots, several of which can be displayed simultaneously. The number of bars in a histogram and the size of the histogram can be changed using a combination of the window size box and the option key [easy and nice]. This provides a direct, albeit inexact, way to change the histogram without using a tedious menu. The scatterplot can be expanded to look at details by defining a box on the screen with the mouse [nice]. The size of scatterplots and boxplots can also be changed using the size box.

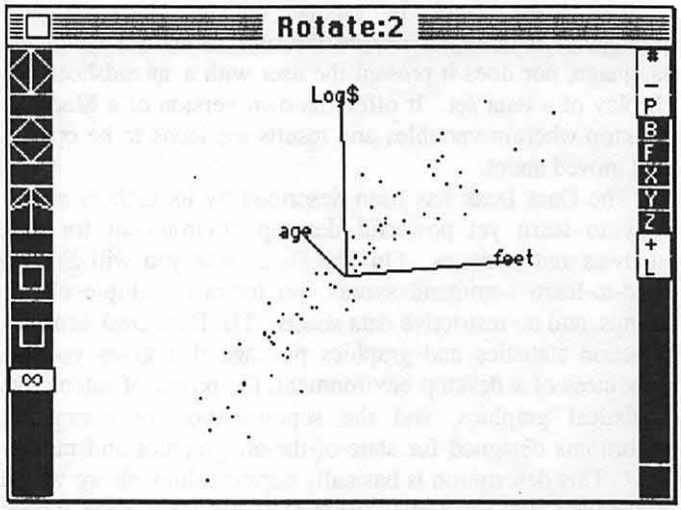


Figure 3

As you can see in Figure 3, three related variables can be plotted as a three dimensional scatter plot. On the 2-dimensional Mac screen, the points will not appear to be in three dimensions, until they are rotated around any selected axis. The rotation provides the illusion of motion and 3-dimensional space. The rotating scatterplots can be used to help understand the relationship between any three variables. With more than three variables, multiple rotating plots windows can be open at the same time. When a subset of cases are selected (by clicking and shift dragging and shift clicking) from one window, the same cases can be highlighted in the other windows at the same time. The rotating scatterplots are particularly useful for understanding multiple regression, selecting transformations and identifying outliers.

The Manual. The manual is good, easy to read, and has a good index. It not only describes each command but also explains the assumptions behind statistical procedures and when they might be used [good]. The supplementary notes describe recent editions added after the manual was printed.

Speed and Size Limitations. Some programs store the data in RAM, gaining speed at the expense of limiting data size. Others store the data on disk, providing more room for large data sets at the expense of slower operation. The Data Desk stores the data on disk or, if space is available, in memory . The operation of the program runs smoothly and quickly. It took roughly 8 seconds from selection to display of a summary (mean, standard deviation) of 1000 integers.

Caveats. The main limitations of The Data Desk are in what it does not have, not in how it uses what it has. Whether the limitations are important depends on your analysis requirements. Additional statistical procedures which we would like to have in a "full-function" statistical program are some basic non-parametric procedures, multi-way tables, weighted and step-wise regression, 3 or 4 way analysis of variance, and the possibility of unbalanced anova. An even more powerful "full-function" package might include time series commands, a way to do non-linear regression, and

contd. on pg 64

ReadySetGO 3.0: A Review
by Martin Milrod

One of the most important uses of the Mac is for desktop publishing. We are now seeing the next generation of sophisticated page layout software and, boy, they are most welcome.

There are four major page software applications, all of which permit you to create "blocks" within a page, "assign" or directly type in text and "assign" graphics to these "blocks."

Silicon Beach's Silicon Press was the first application I used which had pre-defined "blocks" or areas into which text or graphics may be inserted and "overlayed." MacAuthor 1.2 was the second instance when I saw the "block" approach used. Now ComicWorks, GraphicWorks and virtually all desktop publishing software permits one to use this flexible and useful feature.

The four major page layout software packages are: Aldus' (206-622-5500) Pagemaker 1.2, Manhattan Graphics' (800-634-3463) ReadySetGo 3.0, Orange Micro's (714-779-2772) Ragtime 1.0, and Boston Software Publishers' (617-327-5775) MacPublisher II, now taken over by Letra Set and known as LetraPage. Other contenders include MacAuthor 1.2 (the British version), and a yet-to-be-seen product called SPUD.

ReadySetGo 3.0 was released on November 3, 1986 and it is most likely that Pagemaker 2.0 may also be out by the time you read this. This review is based upon an RSG Beta version which had two features not implemented—the spelling checker and the automatic H&J functions, so I am unable to evaluate these. Also, I did not have access to the finished documentation for RSG 3.0 and cannot comment on it.

Features

The more sophisticated applications have advanced features including the ability to kern letters (adjust the space between letters), adjust leading (the space between lines), include automatic hyphenation and justification (H&J) of text, spelling checkers, permit a range of graphics cropping, and permit the easy importing of text, retaining formats and tabs. Virtually all of the newer generation of products also provide for postscript output and editing to accommodate laserwriters and even more professional typesetting needs. It is, alas, almost certain that there will not be one certain software winner to meet everyone's needs and preferences.

My Preference

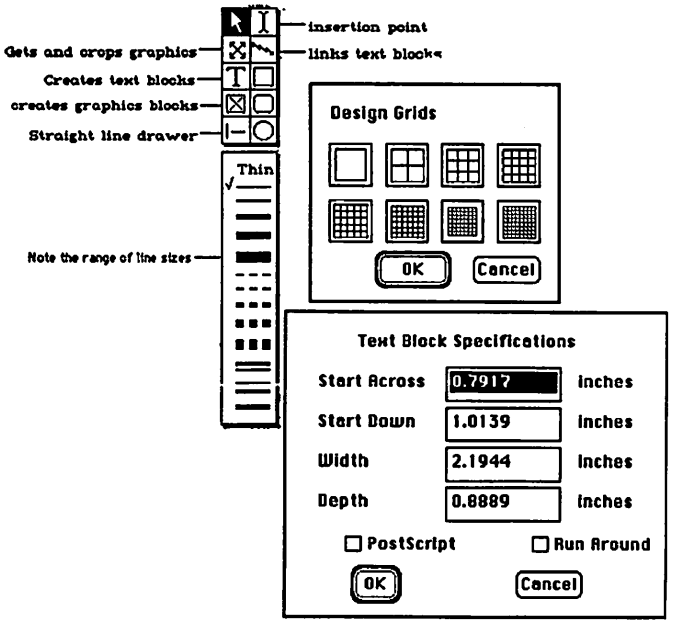
Let me announce my preference. I have been a ReadySetGo user since version 1, and was somewhat pleased with it then. The newer version, 3.0, is akin to comparing bi-wing aircraft with Mach 2 aircraft, and I am very pleased with this Mach 2 version. This newer version is faster and uses full horizontal and vertical scroll bars to "tool around" a page, a major and much-needed improvement! In order to produce a variety of newsletters, posters and brochures, ReadySetGo 3.0 does well enough for me and is my choice.

Almost all of these products use their own jargon, but almost all of them have similar features. (One exception to this is Ragtime's spreadsheet capability which can be created and used right on the page layout. Unfortunately you cannot create charts from their limited spreadsheet.)

How RSG 3.0 Works

RSG has been completely rewritten in a faster-response programming language.

This is what the control portion of the standard "tools" looks like within RSG. The Design Grids and Text Block Specifications permit one to "set up" or "arrange" the page before text or PICT graphics are entered. Standard grids range from 1" x 1" to 8" x 8" and include a 1/4 inch gutter. MacWrite and Word files retain their font, size and style characteristics when imported into RSG—a very important need, but deficit in Ragtime and in most other page layout programs. Naturally a broad range of "fill" and "ink" pattern options are available—as they are in all page layout software. I regret the absence of "arrowhead-lines" within RSG and the inability to rotate any and all items on a page. I also wish that the pointer cursor (upper left hand corner of the "tools" box, below,) activated all blocks. You now have to click on a graphics block with the "crossed arrows" icon to activate "Get Picture," that is, to import a graphics into that block. This is what some of RSG's opening option controls look like.



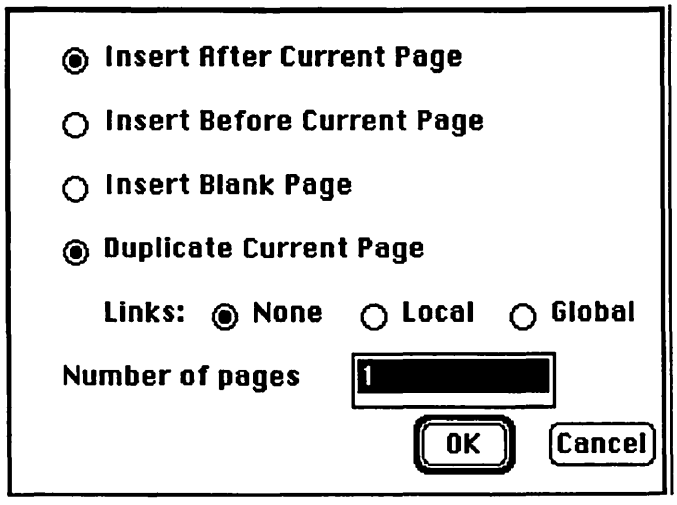
You can use the grid block layout to "link" text blocks by clicking on the text blocks in the order you want, using the "lightning icon" tool, called the linker. Imported or typed text then flows from one designated block to the next. A document can contain an unlimited number of independent text chains. You can also save text output in postscript form or create a "Run Around" a graphic block so that its surrounding text block fills in all available "text" space without overwriting the graphic—a very neat feature.

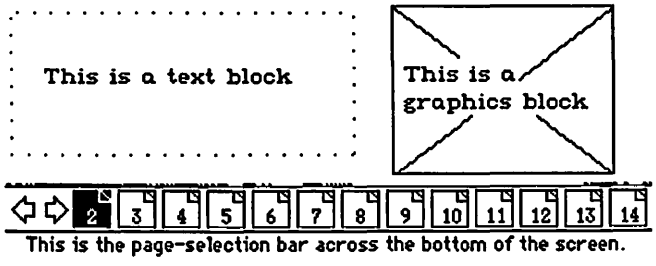
One can "scale" the page to fully fit on the screen, such as displaying a document in half size, three-quarter size, 100% "actual" size and a 200% view. Using "half size" lets me view the entire page well enough for page composition

contd.

and layout. All text formatting works may be mixed as many times as needed within an article.

RSG 3.0 allows the use of measures in inches, centimeters, picas or points, has automatic pagination, date and time stamping, a complete glossary feature and uses "master pages" capable of rapidly reproducing many pages, while allowing for left page-even numbering, right page-odd numbering. These may be toggled on and off for any page in the document. (Command-Option-Shift-3 places the page number on a given page or, if used on the "master" pages, on all pages. To get a short date use Command-Option-d; to get a long date use Command-Option-D; to get the timestamp use Command-Option-t.)





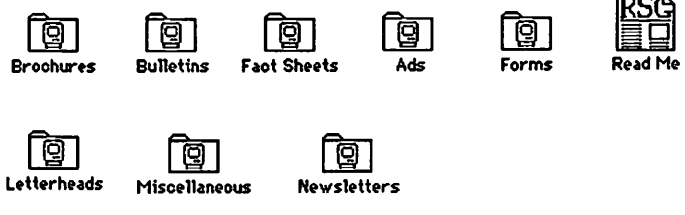
This is the page-selection bar across the bottom of the screen.

By clicking on a page number you immediately open that page on your screen.

My minor and pet peeve is that there are keyboard control commands in this application (as well as in many other applications) which are not readily usable by most people without considerable time investments. When, oh when, will manufacturers produce a single card of illustrated keyboard control commands so that users can hang the card by their Macs while learning the program and perhaps even as a permanent reference tool?

Templates Help

For the uninitiated or the unimaginative (such as I), Manhattan Graphics also sells a two-disk set of templates, called DeskDesign, which has already-created RSG forms for immediate use. Merely "clear" the materials currently in the sample blocks and replace with your own materials. Nice.



These templates are now in RSG 2.1 version, but can be opened and used with RSG 3.0. I expect that they will be updated to work directly with 3.0 in the near future.

Yes, but how much?

RSG 3.0 lists for $295, a "questionable" price since good mail order houses should save you about 30-40% off that amount. For registered owners, the upgrade fee is $70, a great bargain given the massive reworking of this program which no longer drags but flys. It is much cheaper than Pagemaker —the "high-price spread" of this type of software.

I strongly recommend RSG 3.0 for desktop publishing work. As of right now (not yet having seen Pagemaker 2.0 or SPUD), I think it is the best page layout software available today for the Mac, regardless of price, and an exceptional value at its price.

Data Desk 1.0 contd. from pg 62

multivariate procedures.

Bugs and Problems. Although the program did crash with loss of data at least once during our testing, it appears to be fairly robust to haphazard menu selection and normal user errors.

Summary and Opinion. Before launching into blatant opinion, let us indicate our perspective. We are statisticians who like the ease of use of the Macintosh, and want a statistical program which is as easy to use. We prefer a program which avoids clutter (excess output, complicated commands, and extra commands which are rarely used but look good in a long list of "features" in an ad), and uses good numerical algorithms. While we want many advanced features, we'll settle for basic features which meet 80% of our needs.

The Data Desk does some of what we want. It may be perfect for less demanding analyses. The program is easy to use. The art of programming for the Mac is still evolving and we think the desktop-icon analogy is another step toward an easy, efficient user-program interface. The output is understandable, however it can be improved for readability. The program has very little clutter, partly a result of using icons for closed windows. In most cases inconsistent user input is usually handled well, with appropriate error messages.

The Data Desk's strength's are:

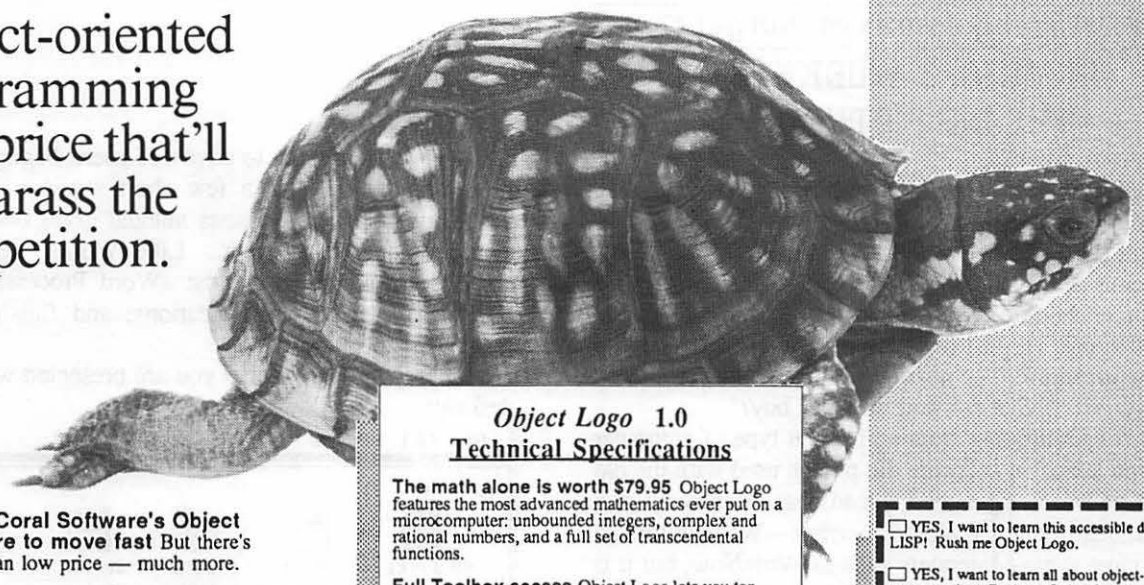
1) Easy data entry.
2) Very good graphics for understanding the data and selecting an analysis.
3) User selectable summary statistics.
4) Excellent regression diagnostics.
5) Retrievable results retained in icons.

How does it compare to other programs? It does not require learning a language, a task which must be mastered to use Systat or Stat80. On the other hand it does not offer many of the advanced analysis offered by them. Like Statworks and Statview512, it was written expressly for the Mac and uses pull-down menus, yet it takes an icon approach where they offer a spreadsheet-look. It provides rotating 3-D plots, something they do not.

We reviewed version 1.0 of The Data Desk, authored by Paul Velleman and Agelia Velleman. The program is available in a student version for teaching (runs on 128K with small data sets) and a professional version (requires 512K, $175) from Data Description, Inc., Box 4555, Ithaca NY 14852.

Introducing Object Logo.

Object-oriented programming at a price that'll embarass the competition.



At $79.95, Coral Software's Object Logo is sure to move fast But there's more here than low price — much more.

Object Logo is a new, easy to use programming language that incorporates the most advanced concepts in computer science. Object Logo gives you all the symbolic processing power of LISP in a first-class programming environment. Object Logo is your ticket into the new world of object-oriented programming. All of this, made accessible by a proven educational programming environment tailored specifically for the Macintosh.

Don't Take Our Word, Take Our Guarantee We're Coral Software. We've been developing high-level languages like LISP for years. And we're sure that Object Logo is what you've been waiting for. But you don't have to take our word for it, because we will give you an unconditional, 60 day, money-back guarantee. You can't lose. Buy Object Logo — if you are not satisfied, return it for a full refund!

With Object Logo, You'll Get ...

An Object System that's Easier to Learn and Use than Any Other Object-oriented programming is sweeping through the computing world. You've seen the articles in leading microcomputer magazines. Here's your chance to get in on the excitement. For only $79.95, you can own Object Logo. It's a small price to pay to become an expert on this important new programming paradigm.

Advanced Graphics Object Logo improves on the graphics capabilities that made Logo famous. We've included multiple graphics windows and multiple turtles, each implemented as customizable Object Logo objects. Object Logo also gives you access to ALL of the more than 100 Quickdraw commands. And Object Logo is the only Logo for the Macintosh with redrawing graphics windows.

Quality Documentation The Object Logo manual is written by experienced Logo educators who will guide you every step of the way. All of their examples are on your Object Logo disk, so you can learn by doing, right away.

A Complete Programming Environment The Object Logo incremental compiler automatically compiles your programs into native 68000 code as you edit and run them. (fast fast fast)

Object Logo 1.0 Technical Specifications

The math alone is worth $79.95 Object Logo features the most advanced mathematics ever put on a microcomputer: unbounded integers, complex and rational numbers, and a full set of transcendental functions.

Full Toolbox access Object Logo lets you tap into the Macintosh Toolbox. You get low-level access to all the ROM. And we've made high-level access easy by implementing Macintosh data structures, such as windows and menus, as Object Logo objects.

Object Logo listener makes history Our listener is scrollable for a full history of your interaction.

Advanced debugger The Object Logo debugger gives you `step`, `trace` and `watch` commands, so you can monitor and track down errors effortlessly.

Compiler Our incremental compiler generates native in-line code from each line and procedure you type in.

Windows The Object Logo system supplies six customizable classes of windows, implemented as Object Logo objects: generic windows, turtle windows, text windows, file windows, editor windows and listener windows.

Input/Output All I/O is implemented by object-oriented streams, including random access files and window and serial I/O.

The Object Logo editor features multiple windows. The debugger gives you built-in trace capabilities. Copying and executing input can be achieved with a single keystroke, which means more time-saving convenience for you.

You Get the Future For Only $79.95 Object Logo is the product of over fifteen man-years of development. Now that it's done, its careful design and low price make it irresistible. It's an amazing value — so easy to learn, yet so powerful.

We think Object Logo is more than a modern programming language. It's the programming language of the future. Macintosh owners from more than 300 universities and 50 research centers worldwide agree. Object Logo is already being used by the Apple Vivarium project, by faculty and students at MIT and at the Harvard Graduate School of Education, and by prestigious AI Labs such as Bolt Beranek & Newman, Inc. That's because Object Logo makes every Mac an excellent tool with which to explore advanced concepts in artificial intelligence and object-oriented programming.

You see, soon everyone will have Object Logo. Make sure to place your order today.

☐ YES, I want to learn this accessible dialect of LISP! Rush me Object Logo.

☐ YES, I want to learn all about object-oriented programming! Rush me Object Logo.

☐ YES, I want a language my students can learn and never have to leave behind! Rush me Object Logo.

☐ YES, I'll buy any software product priced under $100.00! Rush me Object Logo.

For **$79.95**

To order by phone,
call (800) 521-1027
In Mass. call (617) 868-7440

___ Object Logo's @ $79.95 $____

Outside USA, add $10 per copy $____

MA residents add 5% sales tax $____

Amount enclosed $____

Payment: VISA MC Money Order
Credit card expiration date: __/__
N2

Card #|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|

Name: _____
Address: _____
City: _____
State: _____ Zip: _____
Telephone: _____

Please help us serve you better. Let us know the type of Macintosh you will be using with Object Logo:
- 512K Mac
- 512K Enhanced
- Mac Plus

CODs and purchase orders WILL NOT be accepted by Coral Software. Outside USA, make payment by bank draft, payable is US dollars, drawn on a US bank. Price is suggested retail price and is subject to change without notice.

Minimum system requirements for Object Logo: 512K Macintosh with 800K drive or any external disk drive.

Object Logo is a trademark of Coral Software Corp. Macintosh is a trademark licensed to Apple Computer, Inc.

Coral SOFTWARE

REVIEW CORNER

by James M. Burger

MICROSOFT WORKS & THE BIG PICTURE

I. Microsoft Works.

This package is not just for beginners. Probably, like many of the more experienced of you out there, I have "sold" at least a half dozen Macs in the last six months. These have been to friends and business associates that have asked me "what computer should I buy?" No wonder Macintosh outsold IBM AT's this past August (according to one microcomputer research organization). The next question, and the more difficult to answer, is: "What software should I buy?"

For someone migrating from a different type of computer it is easy; you ask what software the person used with the old machine. If he was using a good spreadsheet extensively, you could recommend Excel, a Word Processor—Word (although Word may have some contenders such as WriteNow, but it is being upgraded as well), and so on. Before Microsoft Works, however, I had a hard time giving software advice to a first time computer buyer. Jazz just didn't make the grade (although, I am sorry to hear that Lotus is dropping out of the Macintosh software business). Jazz attempted to integrate heavy duty programs and wound up with compromised programs. They were not powerful enough for the experienced and too complex for a beginner.

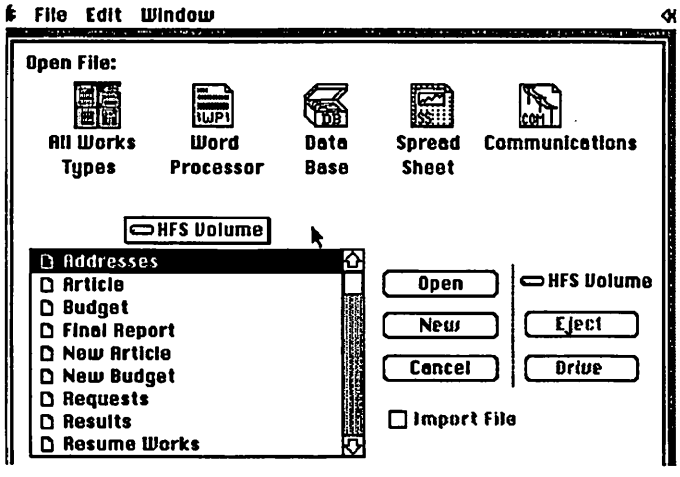
Microsoft Works has four modules: Word Processing, Database, Spreadsheet and Communications. I can recommend Works for the first time Mac user without hesitation. Although, I have a few criticisms, discussed below, Works is far better than trying to throw together a series of unrelated programs. Also, it is more economical. Apple MacWrite ($125), Microsoft File ($195), MacCalc ($99.95) and Software Ventures Microphone ($74.95) for a total of $494.90 vs. Works at $295. Finally, none of the modules are daunting for a beginner.

Works comes on an 800K disk. Microsoft includes a 400K Disk order form. They will send you the program on 400K disks **at no extra charge**—nice touch. Also, the registration card comes postage prepaid—another nice touch. Most importantly, Microsoft has removed copy protection. Thus, you can back up Works and really put the Master Disk in a safe place. Nor do you have to worry about reconstructing your hard disk because of a "install-once" copy protection scheme. My hat is off to Microsoft for this advance. (Microsoft recently announced dropping copy protection for all its Mac products.)

Manuals. Works also comes with two books: **Using Microsoft Works** and **Lessons**. Both are first rate. Microsoft has gotten the business of writing manuals down to a fine art. The manuals are well written, easy to follow and full of well annotated screen shots. Using Microsoft Works takes a comprehensive look at each module. This manual details each module of Works and after each module it includes a detailed Command Reference section. Rather than burdening the explanation of the program with a tutorial, it leaves that to the second manual, Lessons.

While not insulting to advanced users, beginners can begin productive work after a few short sessions with Lessons. Also, reviewing the Lessons manual gives one an excellent overview of the program. Like Works, Lessons is first broken down into four parts: Word Processing, Database, Spreadsheet and Communications; and finishes with integrating the modules.

When you open Works you are presented with the Works desktop:



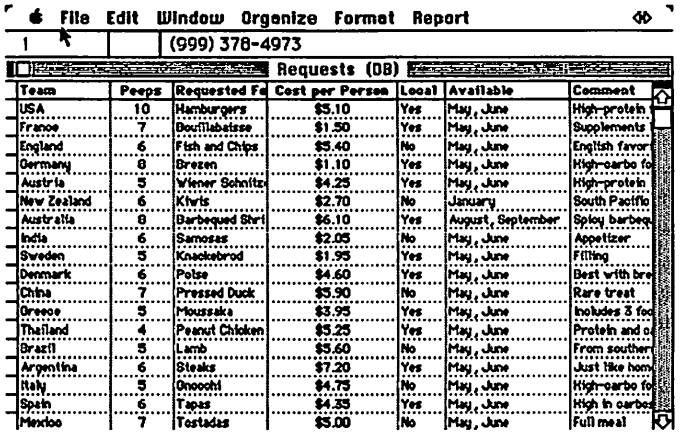
When you click on an icon other than "All Works Types", only files for that module will be listed in the dialogue box and the "New" button will become active.

Word Processing. The Word Processing (WP) section begins with opening a small article. Then you are taken through some word processing fundamentals: replacing and moving text, aligning text and changing its typeface, adjusting tabs, setting and copying paragraph formats, adding footers, setting title and page breaks, and printing. The word processing module is excellent for letters, small reports and articles—certainly an improvement over MacWrite. WP readily imports MacWrite, Word and ASCII. Works WP, however, lacks some of the advanced features of Microsoft Word such as auto footnotes, glossary, and right/centered/ decimal tabs. Works does have a nice small draw function that allows circling or boxing of text or drawing a line in any direction. Also, Works WP is fast since the Works program is written in 68000 assembly language. It does things like repaginate on the fly. Some of these improvements, however, should be in the recently announced Word 3.0 (and are in TIMaker's WriteNow). Works WP should be satisfactory for the average executive, but not for the advanced wordsmith.

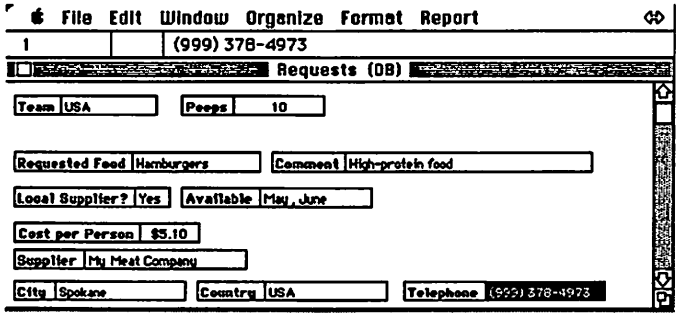
Database. While not a true relational database, again like WP, the Works Database (DB) should be sufficient for the average computer user. It is more like a list manager. Like OverVue, it presents data in a spreadsheet like fashion or in a "Form Window" looking at one record at a time:

contd.

List Format



Form Window

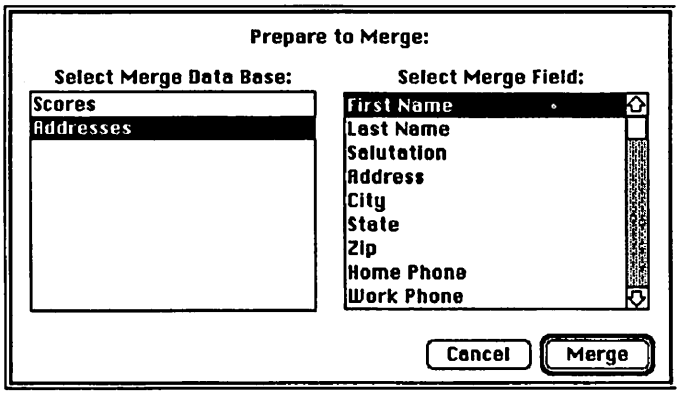


The **Lessons** section begins with opening a data file to coordinate a mythical Alpine bike race. The DB allows simple sorting and record selection. Works has a record selection dialog box which simplifies narrowing records down to just those you want. In the tutorial, you want to find special food that contestants want that is not available locally. Works also permits you to save the selected set as a separate database. Then you calculate the food cost per team, with Works computed fields. Works has a report generating function that is about the easiest I have seen. Lessons takes you through generating a report, including field summaries and totaling of food for each team. Finally, the limitations on DB are not significant for average use—60 fields in a record, 248 characters in a field and 64 characters in a field name.

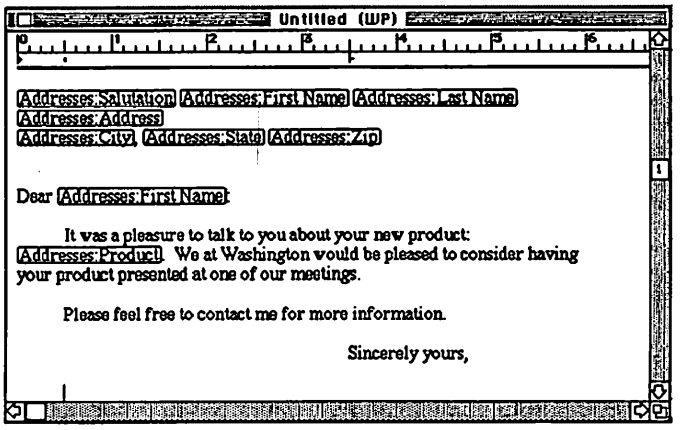
Spreadsheet. The spreadsheet module is a good example of how far Macintosh software has come. Two years ago this could have been a best selling standalone spreadsheet. With Excel, the most powerful spreadsheet available for any micro, the spreadsheet (SS) module is just a substantial part of an integrated program. The Lessons section for the SS module continues the "racing" theme working on a budget for the race. The manual does a very good job of teaching spreadsheet basics. SS is essentially a pared down version of Excel. It does not have Excel's macros nor many of its built in advanced calculation functions. However, SS does have a substantial number of Mathematical, Statistical, Trigonometric, Logical, Financial and special-purpose functions— frankly, more than I need. SS also has a nice, easy to use charting function. Again, there are not as many options and functions as Excel's charting function, but Work's charting function is easy to use and more than adequate for everyday use.

Communications. This is the only disappointing module in the series. Many initial computer owners do not use telecommunications. But modem prices are dropping, and services like Compuserve, Genie and The Source are growing in popularity. Moreover, there are great local bulletin boards. Thus, telecommunications can be a great place for new users to go for help and for the ever increasing public domain Mac software. The reason many novices do not use telecommunications is its complexity. With good easy to use programs like Microphone or Hayes' SmartComm II, or inexpensive ones like Red Ryder, it is surprising that Microsoft did not come up with a better communications module (CM). CM is a barebones telecom program. The Lessons section for CM is only nine pages, whereas the Database section is nearly 30 pages. There's nothing fancy in CM. It has a single menu with "Echo On/Off", a dialing function (with 6 "slots" for frequently used numbers), "Hang Up/Answer Phone", "Capture/Send Text", "Receive/Send File" [which has MacBinary, Xmodem Text (Remove linefeed) and Xmodem Data] and Settings (for changing baud rate, data size, stop bits, parity, handshake, touchtone or rotary dial, line or character delay). CM works reasonably well, but neither simplifies telecom nor offers a somewhat cut-down version of a powerful program.

Integration. Works has an easy to use merge facility that enables personalizing letters using the WP and DB modules. It is far easier to use than the merge facility of Microsoft Word. While in a WP document, and with one or more databases open, selecting "Prepare to Merge" in the Edit Menu presents the following dialog box :



A simple pointing and clicking puts a "Placeholder" in the WP document. Thus, selecting Addresses and First Name would individualize each letter printed, as below:



contd.

Merging is simplicity itself. Copying database and spreadsheet tables and charts into a WP document is also easy. It does not, however, have Jazz's "hot views". That is, once you have pasted a table from SS into WP, changes to the SS will not be reflected in the WP document. Finally, you can open up to ten documents of any of the modules at once.

Conclusion. I would recommend Works, and already have, for the first time Macintosh buyer. I would not use an integrated program, but I am not a beginner. I agree, however, with Microsoft's strategy: A solid, but easy-to-use-and-learn integrated program for those who use the computer as a productivity tool, but do not need a "heavy-duty" program. If you outgrow a module, you can move up to an advanced program. My only disappointment is the communications module. For any beginner that also buys a modem, I would suggest purchasing Microphone or SmartComm II (or trying Red Ryder, which requires a little more learning effort) instead of relying on the Works CM module. Nevertheless, Works is one more reason why Macintosh does belong on every desk in the workplace.

II. October Meeting

The October Pi meeting was truly a Mac hardware junkie's dream. We had five Macs, including **Dynamac's** "Flat Mac", hooked up together on a Network with a MS-DOS Compaq computer, and three large display screens—**Radius'** Full Page Display, **Micrographics Image's** Megascreen, and **E-Machines'** The Big Picture. For those of you that couldn't be there, I will cover one of those products in a little more detail.

The Big Picture. With a 17" diagonal display (1024w x 808h pixels), the monitor can display two 8 x 10 pages; and, with 80 dots per inch, the display is very clear. In fact, I am now badly spoiled and had a hard time returning The Big Picture. The price tag: $1995. The monitor weighs 30 pounds and requires installing a 4 x 6" daughter board which clips on to the Mac's logic board. It can be used with other internal options for the Macintosh such as an memory upgrade or a Levco CPU upgrade.

The Big Picture is compatible with existing Mac software; although E-Machines has added some software patches to "fix" some programs. For example, Word would not refresh the bottom half of a full page when scrolling. While fixed, from time-to-time Word still puts some strange displays on the screen. This is not a major problem since merely shrinking and re-expanding the screen fixes the display. Some programs are more big-screen compatible than others. MacPaint and Ann Arbor's Full Paint only use nine inches of the screen; whereas, Silicon Beach's SuperPaint uses the full screen. Some programs, like Living Video Text's More automatically uses the entire screen. (It's wonderful to see a large outline on a seventeen inch screen). You just have to get used to manipulating the windows differently depending on how well the program deals with windows and the screens.

Using the Big Picture is very easy. First, it does not interfere with using the Mac alone. A small program (Big Picture Patch) goes in the System Folder. In techie terms, this is an "INIT" file. When the Mac is started up, this program runs and looks for the presence of the Big Picture. If it does not find it (or you hold down the option key), the Mac functions normally and uses its own 9" screen. If the Big Picture is plugged into the Mac (an additional port supplied with the internal board), screen displays are sent to the Big Picture's 128K bit-mapped fast video memory. Once installed, all this works together smoothly and transparently.

A desk accessory, "Mouse Tracking", comes with the unit. It allows adjustment of the rate which the mouse sends the cursor across the screen. Also, the snapshot Function (FKey) (Shift-Command-3) is slightly altered. When you press this FKey a gray outline appears to frame the 8" x 10" rectangle you want printed to disk. There is a similar patch to print to Imagwriter (Shift-Command-4).

The Big Picture is very good for the office environment. An executive can unplug the Big Picture from the Mac and take the computer home (where he/she can enjoy a good bulletin board or game). As with Works, the Big Picture and other large screen displays, the argument that "the Mac is not a business machine" just does not hold water. With its clear large picture and transparent operation, I have only one complaint: the price. At least for me, $1995 is a little out of reach (although when you consider it for business use, that is not too pricey). But with the competition of other big screen displays and production quantities, the price should drop.

MICROSOFT TO SHOW WORD 3.0 AT THE DECEMBER MEETING

Microsoft will demonstrate the long awaited version 3.0 of its word processing program, **Microsoft Word 3.0,** at a special showing at the December WAP meeting. The demonstration will take place promptly at 11:30 a.m. in the auditorium at USUHS, as the garage sale begins to wane. Microsoft will be giving away a copy of 3.0 to a lucky WAP member in the audience.

Microsoft recently announced that it would be shipping the enhanced new version of its word processor this coming January. It is slated to be a much improved program. Included in the new version will be integrated outlining, faster scrolling, saving and printing (including repagination on the fly), integrated style sheets, page preview (including interactive margins, headers, and footers), flexible menus (short, full and custom menus), and compound documents (text, bit-mapped graphics, object-oriented graphics, formatted numerical tables, and mathematical typesetting). Word 3.0 will also have a built in 80,000 word spelling checker. Moreover, it will have the ability to create a multiple level index or table of contents.

Also, Word 3.0 will include a utility to support data interchange with the IBM Document Content Architecture (DCA) and will automatically exchange data with MacWrite, Works, Microsoft Word (MS-DOS version) and the "Rich Text Format," Microsoft's text standard for Windows. Version 3.0 will have the ability to manipulate columns—move, delete and sort; and it will perform five math functions (add, subtract, multiply, divide and percentage). Word 3.0 will have text and graphics in multiple snaking or independent (side-by-side columns). In addition, the program will be able to call on Postscript commands to produce graphics such as logo's, shaded boxes or page borders for the Laser.

MicroGraphics Images Corporation

puts you in

ORBIT !

High performance products for the Macintosh™

* **The MegaScreeN™** -The MegaScreen™ Video System provides a high-resolution output from the Macintosh Plus™ computer to a high resolution monitor. Comes as 19" Monitor and MegaSceen components installed inside the Macintosh Plus.

* **Motorola 68881 Math Co-Processor** -MicroGraphics' software will allow this chip to automatically implement all SANE protocalls as specified from Apple.

* **MegaMac SX™ Hard Disk Upgrade** -20 megabyte internal upgrade. Fully HFS compatible, this memory storage system comes complete with its own cooling fan and power supply, giving you the utmost in performance and reliability.

* **MegaScreen Works as Terminal Server** -MegaScreen can be used as a terminal server for UNIX, VMS and AOS/VS. MegaScreen utilizes Visions-Plus™ software from Software Labs Corporation to control up to eight concurrent processes. The display is divided into terminal windows running on the host computer. The window manager provides simultaneous overlapping and tiling.

* **MacAmber Video Upgrade** -Amber phosphor monitor for the Macintosh.

* **Other exciting products**

For Information contact your Independent Representative

William Brucato

Phone : (703) 339-8929

Write to: 9835 Hagel Circle

Lorton, Virginia 22079

MegaScreen™ is a registered trademark of MicroGraphics Images Corp. Macintosh™ and Macintosh Plus™ are products of Apple Computer, Inc. Macintosh is a registered trademark of McIntosh Laboratory, Inc. and is being used with express permission of its owner.

DEVELOPER'S VIEW: MacScan™, LAN's, and our Move...
by Jim Lanford

This month we look at scanners and local area networks (LANs).

MacScan.

New Image Technology, Inc. (NIT), the folks who manufacture the Magic™ video digitizer for the Mac, have released a fast new scanner called MacScan. This 300 dpi engine is based on the Cannon IX-12 scanner engine with NIT's own SCSI interface. Since it uses SCSI, it will only work with the Macintosh Plus unless your Mac has a SCSI add-on such as Quick Port™ by Super Mac Technology.

The Cannon scanner has one of the smallest scanner footprints: 11 1/2" by 13 1/2". It scans an 8 1/2 by 11" piece of paper in fifteen seconds, making it the fastest scanner on the Mac to date. Other scanners slow down when doing half tones on high contrast photographs. In our tests, it took fifteen seconds to scan a page regardless if the page was blank or was the ultimate "scanner slower", a photo copy of a page from the Commerce Business Daily.

The software allows you to select line art or halftone, shades and resolutions of 75, 150, 200, or 300 dpi. These settings did not affect the scan time. The cost of the Cannon scanner, interface to the Macintosh SCSI port, and software is $1495.

LaserServe™.

Infosphere has just shipped LaserServe, a desk accessory print server for the LaserWriter that they were demonstrating in Boston this summer. It is a full featured spooler which will work with uploadable fonts and other resources that the shareware spoolers do not handle. LaserServe will even work without a hard disk. Many print jobs can be managed. It does not delete the print file until it has been successfully printed. LaserServe will also work with more than one LaserWriter. More on this next month when I have more experience with it. Cost: $125.

LAN Benchmarks.

At Micro Dynamics, we use Centram's TOPS®, Infosphere's MacServe™, and Sunol's SunMac™ to link our computers over AppleTalk. I have been asked to write a comparison of the three systems. If any reader knows of some industry standard LAN Benchmarks which I could run, please call me. Timing the process of copying files is one obvious benchmark everyone will be interested in.

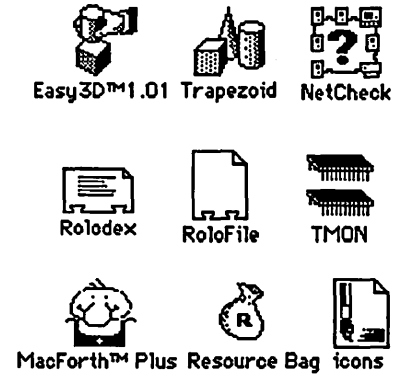
Cheap Hard Disks.

For those of you who want to spend less than $300 for a hard disk: Be aware that the remaining inventory of "serial attached" drives have been written off and are being dumped by distributors as the prices drop on the new SCSI drives. I have been offered the old reliable Tecmar 10 Meg MacDrive for under $200. It is becoming tempting. Micro Dynamics still has its original three Tecmar drives running. They are slower than SCSI but faster than anything over AppleTalk.

Thoughts about Icons.

I was trying to explain to a friend who owns an Atari ST about icons and desktop locations. For those of you who haven't noticed, the ST comes with sixteen factory set icons. That is all you get. Period. The GEM graphics shell assigns them depending on the file or application type. Also, the placement of icons is fixed. If you grab an icon with the mouse (slowly now or it will not recognize your mouse click), GEM will ask you if you want to copy or delete the file.

The Macintosh, as we all know, is much superior. Every program and data file can have its own unique icon. They are stored in the ICN# resource in each application. If the programmer did not put any there, then the Finder assigns the generic application icon or generic data file icon.



Above are some examples of some Mac icons. A favorite is the Easy3D icon. It uses the Apple "application hand" and has shading. NetCheck shows how few pixels are needed to represent a Mac. I added the Rolodex icon to Bill Atkinson's public domain program. Feeling silly, I replaced the MacForth Plus icon using ResEdit. The Mac Paint file icon shows that Apple had a few nice icons when they released the Mac in 1984.

What triggered these iconic thoughts was that CE Software included IconMover™ on the CalendarMaker™ disk I ordered. I do not think that the Macintosh team had any idea what those of us out there could do with a 32 dot by 32 dot array. It has to be a "new minimalism" art form.

Computer Literacy Bookshop:

People ask me where to get computer books when they cannot find them in the local area. Our favorite computer bookstore is Computer Literacy Bookshop in Sunnyvale, CA. 408/730-9955. They usually have new titles before anyone else.

Micro Dynamics has moved. Micro Dynamics, Ltd., 8555 Sixteenth Street, Suite 802, Silver Spring, MD 20910-2802. (301) 589-6300

Companies Mentioned:

IconMover: CE Software 515/224-1995
MacScan: New Image Technology 301/464-3100
MacServe, LaserServe: Infosphere 503/226-3620
TOPS: Centram 800/227-3900

Jim Lanford is the architect of MacLabeler, DigiBase, and other "yet to be announced" software for the Macintosh. He has implemented ground stations for Spartan 1 and other real-time 68020-based testing systems for various satellites. Jim is president of Micro Dynamics, Ltd., a D.C.-based consulting firm specializing in custom Mac software and advanced training.

ANSWERS TO LAST MONTH'S WAPACROSTIC

This disk contains what many of you have been waiting for - Daleks and Megaroids which run on the Mac Plus. In addition, there are several other games and demos such as Killer Kalah, Window Blaster, Icosahedron, and Moire.

Author: Martin Milrod
Work: Macintosh Disk News
Source: WAP Journal, August 1986, p69.

Words

A. Moneyed	I. Lilies	P. Imaging	W. Inhale
B. Afloat	J. Rush	Q. Newcomers	X. Shops
C. Ratified	K. Oriole	R. Toch	Y. Kingston
D. Traced	L. Danish	S. Oak	Z. Nevada
E. Issued	M. Manna	T. Showed	a. Embank
F. Narrated	N. Awhile	U. Husky	b. Whetted
G. Moloch	O. Cavort	V. Drawer	c. Shrubs
H. Indiana			

TWO MAC TIPS
by Bob Marder

MacServe v2.1 - A bug prevents initialization of single or double sided disks. Workaround involves initializing disks prior to relinquishing control to MacServe.

MacDraft v1.2 - Shipment has been stopped as of November 17. This is being done to fix a bug. All 1.2 owners should register to be notified of 1.2 replacement.

Taking Care of Mac contd. from pg 56

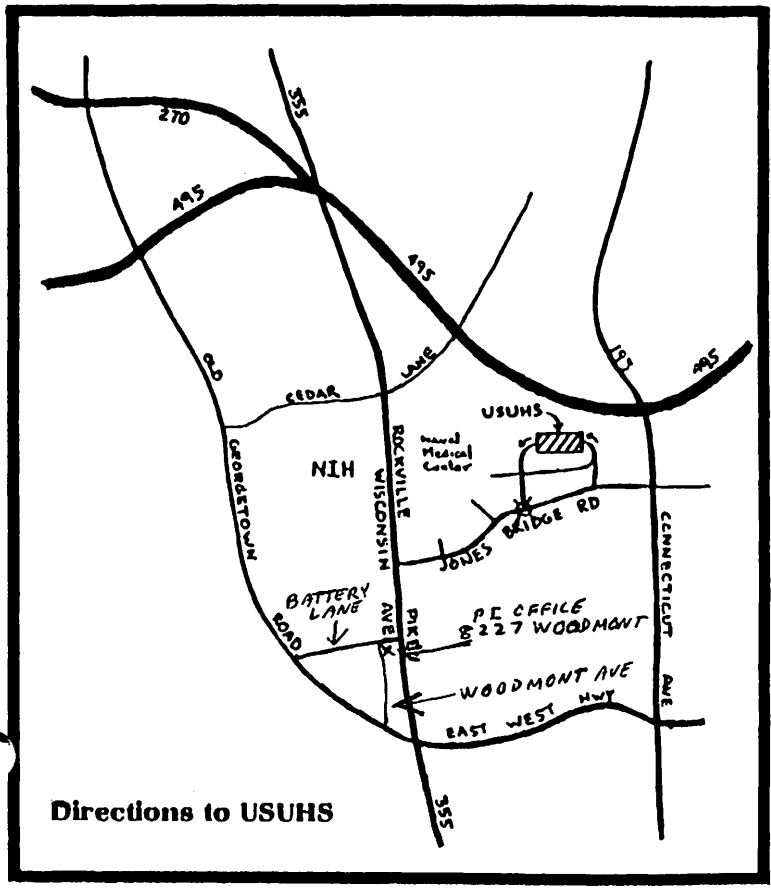
System (HFS) on the external drive.

You CANNOT use an external 800k drive on a 128k Macintosh, as the new System (greater than version 2.1) and Finder (greater than version 4.1 (?) will not work on 128k Macintoshes. This is a gentle hint from Apple that if you have a 128k Macintosh, you really need to upgrade (we agree...). Apple informs us that 128k Macintosh users should stick with System version 2.0 and Finder version 4.1.

Macintosh Bits & Bytes contd. from pg 74

and one on the low end. The upper end will be a 20 page/minute Postscript printer primarily for network use. It will use the new 68020, 32 bit CPU and custom graphics chips to speed up graphics processing speed. It will contain 15 to 20 megabytes of RAM, 4 to 6 megabytes of ROM with 20 or more fonts in memory. The bad news is the rumored list price of $8,500 to $9,000.

The low end LaserWriter will be called the "Personal LaserWriter Plus" and will offer an output of only 4 pages a minute but will still offer the same 300-dot-per-inch graphics and cost $1,995. The standard wholesale price should be in the range of $1,500. Now that is the laser printer I have been waiting for! (Source - Robert X. Cringely, *InfoWorld*, October 20, 1986.)



Directions to USUHS

kinko's copies

The Complete Copy Shop

- LaserWriter Plus
- Self Service Macintosh Plus
- Volumed Priced Copies
- Binding • Stapling • Folding

WAP Members receive a 10% Discount

Capitol Hill
547-0421
611 Penn. Avenue, S.E.

Fairfax
691-9011
10683 Braddock Rd.

Open Seven Days A Week

FREDERICK APPLE CORE

A SLICE OF THE WASHINGTON APPLE PI

OFFICERS & CHAIRMEN

President	- Scott Galbraith
Vice President	- John Lee
Secretary/Treasurer	- Bruce Taylor
Librarian	- Tony Svajlenka
Newsletter Editor	- Kathy Kenyon
Newsletter Chairman	- Lynn R. Trusal
SIG MAC Chairman	- Lynn R. Trusal
SYSOP	- Scott Galbraith

The Frederick Apple Core meets the second Thursday of each month in the large conference room of the U.S. Army Medical Research Institute of Infectious Diseases, Ft. Detrick, Frederick, MD 21701-5011 at 7:30 PM.

Upcoming Programs

December 11 -
January 8 -

HOTLINE MEMBERS

Lynn R. Trusal	- (301) 845-2651
Scott Galbraith	- (301) 865-3035
Kurt Holter	- (301) 663-4199
Bruce Taylor	- (301) 371-6181

The above members of the "Frederick Apple Core" (FAC) have agreed to field questions on Apple computer hardware and software for FAC members. Please no calls after 10:00 PM.

The SIG MAC of the Frederick Apple Core meets on the fourth Tuesday of each month in the same location and at the same time. Mac owners in the local area are welcome. Call Lynn R. Trusal at (301) 845-2651 for details.

SIG MAC Upcoming Programs

November 25 - Full Paint Demo (subject to change)
December - No meeting due to Holidays

MACINTOSH BITS AND BYTES

by Lynn R. Trusal (Frederick Apple Core)

Macintosh Screen Dimmers

If you are an active user of local bulletin board systems, you have undoubtedly seen such files as "Idle," "Stars 1.3," "Fade to Black," "Auto Black," and "Zoom Idle." They are desk accessories that "dim" the Macintosh screen so the screen phosphors are not burned by leaving the same image on the screen for a prolonged period. All of these files are desk accessories that may be added to the desk accessory list by using the DA/Font Mover.

When "Idle" is installed and selected from the desk accessories, a bouncing Macintosh appears on a black screen. The screen is black to prevent over exposure and the Macintosh keeps moving around to prevent it from leaving a permanent image. "Stars 1.3" is similar in purpose but the screen is filled with shooting stars that appear to be coming out of the Macintosh screen towards the user. It leaves you with the impression you are traveling through space. When I activated this screen dimmer and then hit any key, the stars appear to shoot, followed by many more of them appearing on the screen and traveling at a slower speed. I prefer this one to "Idle." With both these accessories, the touch of the mouse button brings the screen back to life.

The DA's "Fade to Black" and "Auto Black" are automatic screen dimmers that spring to life automatically when the user has not touched the keyboard for a predetermined time. "Auto Black" uses a predetermined 5 minutes and "Fade to Black" may be set by the user in seconds or minutes. Again a touch of the mouse button returns you to the regular screen. Neither is as asthetically attractive as "Stars 1.3" which is a manual screen dimmer. I would highly recommend using one of these screen dimmers if you are in the habit of leaving your Mac on for long periods of time. I have seen an Apple II screen with a Visicalc template burned into it from extensive use of the same application.

The DAK modem

Not another DAK modem article! No, just a short note. The DAK/ADC 300/1200 baud modem has been decreased from $169 to $149 and a Compuserve offer worth $25 towards on-line time has been added for free. The order number is 4334 with an additional $6 for shipping and handling. DAK Industries phone number is (800) 325-0800.

Statistics Programs

Brainpower, Inc. who markets Stat View, Stat View 512, and Stat View 512+ recently sent out a letter to registered owners of Stat View 512+. They pointed out that they have corrected bugs and errors in their program which were found by users. They have fixed the errors and are now offering upgrades to registered owners for $20 when the original disk is returned. In what other industry can a company produce a product with defects, have users find them, and then charge those same users $20 to get another copy of the program without errors. In my opinion, Brainpower, Inc., does not have a right to charge users, who already paid $300 to $400, any more money to correct errors created by the company.

contd.

Such an offer only makes sense if the company added additional features not found in the original program.

Cricket Software adopted a more reasonable approach. They provided a free upgrade to fix a bug in the program to any registered user who returned the disk back to the company. Brainpower, Inc., should learn from their example.

Spectrum HoloByte Inc., charges users of "Gato" $5 to upgrade to version 1.4 which is compatible with the Macintosh Plus. This upgrade price is reasonable, but then if the company would have followed Apple's guidelines, their program would have been compatible in the first place!

HyperDrive Software Revision V3R1

In the August, 1986 issue of the WAP Journal (page 54), I discussed my initial experiences with an internal HyperDrive 20 in a Macintosh Plus. Although my initial impression was positive, it became more and more negative as my experience with the HyperDrive increased. Much of the touted HyperDrive software did not perform as advertised and some features were virtually useless. I obtained the newest version (V3R1) of the HyperDrive software at the Boston Macintosh Expo and promised an update on my previous article when I had more hands-on experience. The purpose of this article is to present that update.

The Boston Mac Expo and General Computer

At the Boston Expo, I had an opportunity to talk to the General Computer representatives and express my displeasure with the HyperDrive performance. I was joined by another acquaintance who had similar complaints. Between us, we knew of of six failures of HyperDrive controller boards. Other failures resulted from owners attempting to use the latest version of the system and finder instead of the ones that came with the HyperDrive. They listened attentively, and I sensed that they knew that the problems were not isolated examples. I also sensed that they were genuinely interested in seeing the problems corrected. I was able to obtain the latest version of the HyperDrive software (V3R1) and hoped that it would correct the software problems that I was having. I also asked about the loudness of the HyperDrive fan and they said that the fan voltage had been increased to increase its speed and air handling capacity. It is now louder than original HyperDrives.

Installation of the New Software

When I got home, I followed the instructions for installing the new software. There is a 7-page MacWrite document detailing the changes and the proper procedure for installation. It is emphasized that "before proceeding, it is recommended that you make a backup of your entire hard disk." As you recall, backing up the hard disk was one of the major problems with the old software (V2R1). I previously backed it up by conventional techniques, so I proceeded to install the new version, and had no problems doing so. V3R1 uses the newest System (3.2) and Finder (5.2) and comes on three 400K disks. They include new versions of the Manager, Backup, Install, Security, Spooler Install, Laser Spooler, Laser Spooler DA, Fonts, LaserWriter, Laser Prep, DA/Font Mover, AppleTalk ImageWriter, and HyperTools. These new versions are available free from your HyperDrive dealer. Several of these features deserve special mention.

HyperTools

"HyperTools" is new and allows the user to see such information as the version numbers of all HyperDrive software, including such things as the RAM disk driver and Boot track. These can be useful for General Computer's diagnosis of future problems should a phone call to their support line be necessary. Another screen displays information about the serial ports on the back of the Macintosh including a pictorial display. Finally, HyperTools has a unique means of displaying how the total disk space is allocated in each drawer. This includes the ability to "optimize" the drawer by a quick or a more exacting method. When the user chooses one of the "optimize" options, it is possible to watch the data being moved around the "drawer" while the optimization takes place. The goal is to recover 256-K blocks of empty space brought about by deletions of files over time. Although the documentation says this option does not work on HFS drawers, it does work! This was a confusing issue at the Boston Expo, and I was given both "yes" and "no" answers by two different General Computer personnel. For once, the software does something that the documentation says it doesn't, instead of the other way around!

Laser Spooler Added

A major addition to the software is a free LaserSpooler, which supports print spooling to the LaserWriter. It doesn't work with the old 64-K ROMS of the original 512K Mac and doesn't support spooling with *PageMaker*. I don't have a LaserWriter at home or a HyperDrive at work, so I cannot attest to the performance of this important new option. Micah, Inc., also unveiled a Laser print spooler at the Boston Expo, but they were charging a significant sum for theirs. This has been one of the missing software/hardware links and it remains to be seen how well these laser spoolers work.

A Boot Problem Solved

One of the other software problems that I routinely experienced with the older version of the software was the random appearance of a blank dialog box on the screen at boot-up. Rebooting usually corrected the problem. This problem does not occur with V3R1.

Backup Software

The new software (V3R1) successfully backs up HFS drawers while the old version (V2R1) did not. I attempted to try the backup by "restoring" a backed up drawer into a "newly" created drawer of the same name, but I couldn't fool the software. Instead, it restored the files to the original drawer from which they were copied. I thought I might lose the existing files that were still in the drawer. Each newly backed up file name was appended by the letters "BU" after the file name. Thus, I was able to differentiate the old from the new files.

Although the backup software will now backup HFS drawers, I still find it unsatisfactory for the following reasons. The software allows backups by "drawer, file, or incremental." The "incremental" is designed to backup only those files created since the last backup. Sounds great, but the problem with this option is that it can't add backups of new files to the existing backup disk! You must use a new disk each time, even if only one file was created since the last backup, and even if the previous backup disk has unused space on it. This was also true for V2R1 and it has not been improved in V3R1. This is very wasteful of floppy disks. If you want to perform a new drawer backup or add to an existing backup, the software still requires you to use new or blank disks. You

contd.

can't reuse disks from the last backup unless you completely re-initialize them again, which, of course, erases them. I recently found out this may be circumvented by holding down both the "command and option" keys before inserting the backup disk. The requirement for blank disks was intentional on General Computer's part to prevent users from erasing disks they did not intend to erase. Instead of the HyperDrive backup software, I prefer HFS Backup (version 1.1) to backup HFS hard disks.

Clipboard Problem with Switcher Not Solved

The last major problem I encountered with the old software was a failure of MacPaint and MacDraw to support the clipboard in Switcher for transfer of graphics between the two programs. To solve the problem, I was told to put them both in the "startup" drawer. I find that this has not been corrected, and it is still necessary to put both programs in the "startup" drawer for proper clipboard support using Switcher. This is a minor inconvenience but the user should have the free choice of where application software is placed. This shouldn't be a hard problem to solve.

Conclusion

After several months of usage with the new HyperDrive software, it appears that some of the major problems of the older version have been eliminated and several new additions have been made. It is a credit to General Computer that they not only continue to improve both software and hardware, but they don't charge for software upgrades. They have also added new software features and haven't charged the customer for doing so. General Computer has made strides in improving what many consider to be the best hard disk software, but they have a way to go. I would like to see additional major changes in the backup software, since this is the most important part of hard disk software for most users.

HyperDrive FX-20

I read with interest the article on the HyperDrive in the October Journal. The user's experiences pretty much echoed mine. After getting the HyperDrive controller board replaced in my Mac Plus, I was offered the option to switch it for the external HyperDrive FX-20 and I opted to do so. I continued to hear about HyperDrive hardware problems and I lost confidence in the internal drive. My decision was largely based on this lack of confidence, but I also didn't want to be without a computer if the internal drive failed again.

I have only had the FX-20 (SCSI) for several weeks and it is too early to tell if the problems that have plagued the internal HyperDrives have been solved. The size of the FX-20 is 3.5" W x 13"D x 8" H, and it appears to be about twice the size of the DataFrame 20. The fan is as loud as the internal HyperDrive, which is too loud for my taste. I don't know why they can't find a quiet fan with enough air moving capacity. General Computer told me the FX-20 drive is by Seagate (major maker of IBM drives) and is shock-mounted. They also claim that they are the only hard disk drive maker that tests 100% of their disk drives before shipment.

Although I was told the software is the same as that used in the internal HyperDrive, there are some important differences. At the current time, the FX-20 software doesn't support Hypertools, disk cacheing, or disk optimization. The user isn't able to set up individual drawers and only HFS is supported. These items are apparently being worked on for release with a later version of the software, but the FX-20 does not use exactly the same software.

I did find out that you can circumvent the requirement to use only blank initialized disks for HyperDrive backups. You may use disks containing existing data for a new backup if you hold down the "command and option" keys before inserting the disk in the drive.

General Computer has also discontinued their 800 telephone number for customers. They now have a commercial telephone number for users (617) 492-8737 and an 800 number only for dealers. Apparently General Computer got tired or was inundated with customers and now only wants to talk to dealers. They do have an AppleLink address of GENCOM. TECH for dealers to address problems. Although this is good, I think General Computer has lost sight of who actually pays the freight. If dealers complained they couldn't get through on the 800 phone number, they should have set up a second 800 number just for dealers. Once again users lose out.

LaserWriter Plus Upgrade Kits

I have seen articles in both *InfoWorld* and *PC Week* about high error rates in the upgrade kits for the LaserWriter Plus. There has been a chronic shortage of the upgrades ever since their announcement and Apple apparently has been unable to correct the problem at a rate fast enough to meet demand. Apple has gone to testing each kit before it is shipped and this has further slowed supply. One consolation is the recent price decrease of $1,000 in the retail price for the LaserWriter, which now lists for $5,999. This is the second thousand-dollar drop since the printer was first introduced about two years ago.

Rumor on the New Macintosh

A recent article by Robert X. Cringely in the gossip column of *InfoWorld* (October 13, 1986) states that Apple is using the Nubus system bus in the new Macintosh. This was developed by Western Digital and sold to Texas Instruments. Apparently, it has now been licensed by Apple. The Nubus is similar to the Multibus II, developed by Intel, which is also found in many 68000-based computer systems. Texas Instruments is quoted as saying that cards built for the Multibus II will work with Nubus. If this is true, it should make it easier for third-party developers to make add-on cards for the open Macintoshes.

The article also states that Apple is close to releasing its AppleTalk card, which was jointly developed by Apple and Tangent Technologies, for the IBM PC. Tangent may have also written Postscript software from Apple that will allow an IBM PC to process a file sent over AppleTalk for printing on the LaserWriter.

Adobe Systems, Inc.

Adobe Systems, Inc., which recently went public, has announced a 200% increase in 3rd quarter profits, compared to the 3rd quarter last year. Revenues for the quarter were almost five million dollars. Since 80% of Adobe's profits come from the licensing of the Postscript language to Apple computer, that can only mean one thing. Apple is selling a huge number of LaserWriters and LaserWriter Plus's. (Source - article by Karen Sorensen in *InfoWorld*, October 13, 1986).

New LaserWriters

The latest rumor on new LaserWriters is as follows. Apple will release two new LaserWriters, one on the high end

contd on pg 71

MAC DISKETERIA DISPATCH
by Martin Milrod

There are five new disks being released this month, three of which are Desk Accessories (DA's), a utilities and programming disk, and a "recovery and hacker's disk." These disks are loaded with powerful and useful tools to make you become more productive. Please take your time in reading the rather extensive notes listed below before you purchase; they're really great collections of goodies. Also, please note that we've added the shareware prices of items where they are known to us.

Mac Disk 65: DA's V - Calculators, Clocks and File Utilities

In the Calculators Folder:

ProgCalc A many-featured programmer's calculator which includes writing the "paper-tape" to the clipboard, disk, or sending it to the printer. It operates in binary, octal, decimal or hexadecimal. It was created using the Dubl-Click Calculator Construction Set™.

In the SciCalc Folder:

Mini Sci Calc A VERY full-featured calculator created using the Dubl-Click Calculator Construction Set™. It does binary, hex and decimal calculations, summations, and trigonometric functions. It recognizes the Mac Plus keypad.

MiniSciCalc Notes Documentation for MiniSciCalc.

In the FIFC Folder:

FrCalcDA Calculator adds or subtracts numbers expressed in feet and inches and fractional inches. It handles fractions without converting them to decimal values. ***Shareware - $5.00.***

FrCalcHelpDA On-line help DA for FrCalcDA

FIFC Information Documentation for FrCalcDA.

In the Cray4 Stuff Folder:

Cray4D (dCAD Calculator) A full featured scientific and programmer's calculator has many functions. The scientific features include exponential, power and root, trigonometric and coordination transformation functions. Programmer's features include base selection and conversion (in binary, octal, decimal and hexadecimal), logical operations (such as and, or, xor, etc.), register rotate and shift and an ASCII table with Apple's extensions. ***Shareware - $8.00 for use, $19.95 for license and updates.***

Cray4P The application version of the Cray 4 Calculator Desk Accessory.

Cray4 Doc Documentation for the Cray 4 Calculator. It is excellent in coverage of the calculator functions but sparse in examples for the initiate user.

In the Clocks & Calendars Folder:

World Time Look at the time in Tokyo, Cupertino, Boston, London and Paris.

Analog Clock A very attractive analog clock with sweep second hand".

Timer v1.2 A "stop watch" for your Mac. Clock: A simple digital clock.

Big Ben An analog clock with the beautiful face of the historic "Big Ben" of London.

In the Calendar Folder:

Calendar 1.1 A desk calendar in which to keep notes, appointments, and important dates. ***Shareware - $5.00.***

Calendar1.1 doc Documentation for Calendar 1.1.

In the File Utils Folder:

File Copy Permits you to copy a file to another disk without returning to the desktop. ***Shareware - $10.00.***

DA File Does basic file and disk operations such as eject, file info, free space, rename and delete. ***Shareware - $5.00 to $10.00.***

SkipFinder 6.1 Puts up a mini-finder that allows you to quickly switch applications instead of going to the Finder every time you quit.

Utilities v2.0 Does many file functions, such as delete, rename and set Finder file attributes. HFS messes up display. ***Shareware - $10.00.***

Folder Maker 1.0 Creates an HFS folder from within an application.

FileTran Allows you to copy, delete, and do a "get info" for files. Shareware - $8.00.

Locator Locates the position of the mouse on the screen as well as showing a 9 by 9 pixel "fat bits" view under the pointer. ***Shareware - $10.00.***

In the xtras Folder:

Extras A multi-function DA with functions such as free memory, free space on disk, delete file, and application to launch (run) after quitting. ***Shareware - $10.00.***

Extras 1.5.DOC Extras documentation.

Install FKEY 8 A program that installs an FKey into slot 8. This FKey is for use with Extras 1.5.

In the SetFile Folder:

HF Setfile Sets the Finder file attributes. You will have a tough time getting the address for the shareware fee since the screen credit message doesn't stay on long enough. ***Shareware - $10.00.***

Setfile Doc Documentation for HFS Setfile.

In the miniDOS Folder:

MiniDOS Puts up a mini Finder which allows you to rename and delete files from within an application.

MiniDOS Doc Documentation for MiniDOS.

In the DeskZap Stuff Folder:

DeskZap 1.2 Does a variety of file adjusting things including setting file attributes, stripping linefeeds, control characters, high bit and adding linefeeds. It can also delete, rename, copy and create a file as well as creating an HFS folder. Very useful. ***Shareware - $15.00.***

DeskZap 1.2 Doc Documentation for DeskZap 1.2.

Mac Disk 66: DA's VI - Games and Graphics

In the Games Folder:

Rubik's Cube (Cube) Gives you a Rubik's Cube to solve. The small cube on the left restores the large cube while the one on the right scrambles it. It doesn't seem quite the same without the bright colors.

Maxwell 2.2a In this game, you try to get all the balls

contd.

of one color on one side of the screen, while getting all of the other-colored balls on the other side of the screen.

3D TIC TAC TOE Use this DA to play a game of 3-D Tic-Tac-Toe.

Knockout A DA version of the old Brickout game. ***Shareware - $5.00.***

Bagels A very odd number game. I haven't figured it out but it takes four numeric entries and then a ? to get anything in the scrolling window.

In the Misc. Fun Folder:

Display Message Gives you a lighted banner-strip across your Mac with your written message. Change the author's credits to print your own message.

Abacus Permits you to actually use an abacus in place of other calculators. Maybe we should have included this in Disk 64!

Telegraph Converts typed letters into Morse code.

Trails Allows you to draw mirrored patterns, then plays them back in delayed realtime. Very pretty.

In the Talkers folder:

Talking Keys 1.0 Creates a "talking Mac" using the sound system of the Mac to verbalize typed letters or words. ***Shareware - $15.00.***

Talking Moose 1.1 Another "talking" phrase feature which comes up with clever and humorous phrases.

Gabby This one will just talk.

In the Screen Destroyers folder:

These DA's in various ways cause your screen to be mutilated, such as collapsing it or reversing it.

Push Shows a body "pushing" the screen off the Mac. You must reset your Mac to stop the action.

Inside Mac DA The way you would see the screen from the inside of your Mac (if you could fit). Everything is reversed left to right, even the mouse movements. Click the mouse button for normal.

Collapse The screen contents slowly collapse into rubble much like a building in an earthquake. Recover by rebooting your Mac.

Flow Like collapse only larger sections fall. Reboot to recover.

In the Graphics Folder:

Camera Lets you take a picture of the screen after a certain delay, like the timer on a camera. Allows you to have "screenshots" of pull-down menus.

FixPic Fixs bitmaps pasted from MacPaint, so they come out darker within text documents. Just run this DA before you paste the picture in the document.

In the Misc. folder:

DA Book Keeps a record of various things and allow for retrieval including wild- card searches. It can be customized with ResEdit, but comes set up for use by programmers.

Macros.Demo Demo of a text macro program. The standard version which can edit and save macros is ***Shareware - $15.00 + blank disk.***

Periodic Table Displays the periodic table. ***Shareware - $5.00.***

Change Font DA 1.03 (ApplFont1.03) Changes the default application font so that text in all applications will be in the font of your choice.

ClipEdit 1.2a Permits you to adjust text when it is in the clipboard. Handy for changing lower case to upper case text and for stripping line feeds from text documents. ***Shareware - $ (whatever you think it's worth).***

Stuff Clip Lets you put any ASCII control character into the clipboard.

Compress It Allows you to compress or decompress files for archiving or uploading/ downloading. ***Shareware - $15.00.***

In the Runners Folder:

Double Apple Allows you to run another DA, not in the system file. The DA is retained only until you quit from Double Apple. ***Shareware - donation accepted.***

Other... 2.01 Allows you to run another DA, not in the system. This one installs the DA under the Apple menu, where it stays even when you quit Other... The documentation with this program is excellent. ***Shareware - $5.00.***

FKEY Runner Demo A demo of the FKEY runner DA, found on Q&D Utilities Vol. 2 from Dreams of the Phoenix.

In the Telecomm folder:

vt52 Emulates a VT-52. It supports uploads, downloads, allows selection of printer or modem ports and has baud rate selection from 300 to 9600.

CheckSum Performs a CheckSum function on a file. It is useful for making sure that a file transfer has worked.

DisplayRLE Displays RLE graphics which can be found on CIS. File to screen, screen to inverse screen and screen to file conversions are provided.

QDial 1.5 Will background redial up to five BBS's, rotating them continuously until one is reached. It supports Hayes compatible modems operating at 300, 1200 and 2400 baud. The documentation with this program is excellent.

Mac Disk 67: DA's VII - Utils and Programming

In the Programming Folder:

Call-151 Allows you to go into machine code, just like the Apple //'s command "Call -151".

DevTools2.0 Allows one to delete, rename, "touch" files, examine and change file attributes, and more.

ConCode 1.3 A 68000 condition code demonstrator. ***Shareware - $15.00.***

Info 1.2 Provides a bunch of system information such as Ticks, drive space, free memory, etc... mouseprint Displays the mouse's position when it is clicked. First move the display to an area of the desktop that has no other windows, otherwise it disappears behind the window.

In the Icon Maker 2.1 Folder:

Icon Maker 2.1 Permits you to make an area of the screen that you choose into a resource type ICON or ICN#. ***Shareware - $what it's worth.***

Icon Maker Doc Documentation on how to use Icon Maker.

In the Memory/Heap Stuff Folder:

trap list Displays the traps in memory.

mega watcher Displays various pieces of information about what is going on in memory.

MemScan Performs a memory dump.

heap scan Displays the heap.

contd.

StackSniffer 1.0 Displays the stack pointer and address at the top of the application heap.

Heap Picture Displays the heap.

In the Text Utils/WP Folder:

ClipEdit 1.2 Allows you to edit the clipboard in various ways. Handy for case changes including upper, lower, word caps and sentence caps. It also strips line feeds and changes line feeds to returns. ***Shareware - $20.00.***

ReadMacWrite.DA This DA "reads" a MacWrite file into a plain text file.

Reader 1.06a Permits you to read text files and display them.

In the Vi-Mode Folder:

Vi-mode Allows you to use Vi editing commands.

Vi-mode Doc Documentation on how to use the Vi-mode DA.

In the Sort/Tab Stuff Folder:

Sort DA Permits you to sort lines of text either alphabetically or numerically. **Shareware - $5.00.**

Tab Expander DA Lets you expand tabs into a given number of spaces. It also converts TEXT files into standard file formats for the Macintosh, IBM PC and UNIX. ***Shareware - $5.00.***

About Sort and Tab Expander Documentation on how to use Sort and Tab Expander DAs.

In the Word Counters Folder:

MW 4.5 Counter Lets you count the number of words and characters in a MacWrite document. ***Shareware - $3.00.***

ProCount Lets you count the number of words in a text file. ***Shareware - $5.00.***

Word Count V3.0 Permits you to do a word count and character count on text and MS-Word Files.

In the NumCaps Folder:

NumCaps Allows you to copy any ASCII codes for a character in any Macintosh font to the clipboard for later pasting.

NumCaps Doc Documentation on how to use the NumCaps DA

In the Grep Folder:

Grep-Wc A fancy word counter that also has extensive pattern matching and search capabilities. It works with TEXT and MacWrite files. Its search function emulates UNIX grep.

Grep-Wc Doc Documentation on how to use the Grep-Wc DA.

In the Util Da's Folder:

DA Font Displays the installed DA's and fonts in your system. ***Shareware - $ any amount.***

Disk Labeler Prints out disk labels. It didn't work on my Plus.

New Scrapbook DA Allows you to copy portions of text or picture; you don't have to take the whole thing. ***Shareware - $ a small contribution.***

Show Clipboard Displays the clipboard.

µPaint A little MacPaint. Window DA Gives you a list of windows and allows you to bring a window to the top. ***Shareware - $5.00.***

In the Set Path Stuff Folder:

Set Paths Allows you to set six 'paths' to be automatically searched when looking for a file (the other two paths are for the volume name and system folder. **Shareware - $20.00.**

Set Paths Doc Documentation on how to use Set Paths

In the Fourier Stuff Folder:

FFT90.DA Permits you to take data and perform Fourier transformations with them.

Fourier.doc Documentation on how to use the FFT90.DA.

In the Comments DA Folder:

Comments Allows you to write and read comments without having to use the Finder. Works with Finders 4.1 or earlier.

Comments.doc Documentation about how to use the Comments DA.

Menu.curs This file works with the Comments DA.

In the System Utils Folder:

SetSound Allows you to set the speaker volume without having to leave an application.

SetMenuFlash 1.1 Allows you to set the number of times a menu will flash when selected.

CrashFix Helps you recover a Ram disk in case of a crash.

Dvorak3.0 Turns your keyboard into a Dvorak keyboard. It acts as a toggle switch.

In the ControlPan+ Folder:

Control Panel Plus 0.8 An under-development replacement for Apple's control panel. ***Shareware - $5.00.***

CP+ 0.8 Notes.txt Documentation on how to use the Control Panel Plus 0.8 DA.

Function Keys Installs a menu from which installed FKEY's in the system can be invoked.

Mac Disk 68: Utils VII - Disk and File Utils

In the Disk Utils Folder:

TEXT Ranger Converts text files into the word processing application you are using (i.e., from MacWrite Text files to Edit files).

Disk TimerII This times your disk drive. Very neat utility.

SS Copier Copies single-sided disks. It reads the source disk into memory and then writes to as many disks as you want. It shows how many disks have been copied. Copy and verify are separate steps. The Verify step didn't reject 1 of 6 known bad disks that I use to test copy programs for the WAP duplicators.

DiskDup+ Version 1.1 of a disk duplicater which works both with MFS and HFS.

MacMulti-DiskCopy Copies a master disk on to a number of disks. It's fast because it reads the original disk into memory but it does not verify what has been written to the disks with what is in memory. All 6 known bad disks that I use to test copy programs for the WAP duplicators were copied onto without any indication that there was a problem. ***Shareware - $5.00.***

Ultra Disk Split/Merge 1.1 Splits a disk into a number of files, or restores the disk into a number of files. This is useful when transferring a whole disk's contents over the modem.

Purge Icons This utility removes un-needed icons from

contd.

your (invisible) desktop file, thus saving valuable disk space.

In the Directory Stuff Folder:

Directory 0.9 Creates a directory of your HFS volume. ***Shareware - $10.00.***

In the HFSFind 1.2 Stuff Folder:

HFS Find Permits you locate a file name through an entire HFS system. Its power and flexibility are evidenced by the four plus pages of documentation.

HFS Find1.2 Doc Documentation on how to use HFS Find 1.2.

In the Disk Lib 1.82 Folder:

Disk Librarian v1.82 An excellent disk cataloging program which allows you to sort your files or disks and allows you to view the catalog in different ways. It even shows the comments in the Get Info windows. ***Shareware - $20.00.***

Librarian Short Doc Documentation on how to use Disk Librarian 1.82.

In the Mini Finders Folder:

Superstation 3.1 A minifinder that allows you to directly launch applications and documents. This one is based on Waystation. ***Shareware - $10.00.***

WayStation2.6 A fast, compact minifinder which can replace the Finder for directly launching applications. Handles up to 27 items.

SmallFinder A minifinder that allows simple filing functions.

In the WindowShell Folder:

Window Shell A nice finder replacement. Only works with MFS.

Window Shell.doc Documentation for Window Shell.

In the Document Utils Folder:

File Cleaner Permits you to strip LF's (Line Feeds), CR's (Carriage Returns), high-bits, etc., from text files.

Numberer Permits you to add line numbers to a text file.

Macify Permits you to remove hard CR's (Carriage Returns) and replace quotation marks, etc.

Mac Disk 69: Utils VIII - Recovery and Hackers

In the Hacker Utils Folder:

ResPreloader Marks resources for preload so that some programs may run faster. ***Shareware - $5.00.***

Forked Tongue A bit level fork editor.

In the Snoop Folder:

MacSnoop™ A bit level file editor which permits you direct access into the disk's code structure. ***Shareware - $25.00.***

MacSnoop™.doc Documentation for MacSnoop™.

In the Hex & ASCII Folder:

Hex & ASCII Strings Converts Hex strings to ASCII strings and vice versa.

Hex$.Rsrc The associated resource file.

In the Recover Utils Folder:

Rescue Rescues MacWrite documents by decoding them and writing their contents to a text file.

Disk First Aid Helps you repair damaged disks. I couldn't get it to eject the boot disk so I could recover a damaged one.

Read MacWrite Enables you to decode and write MacWrite documents to a text file. ***Shareware - $.10.00.***

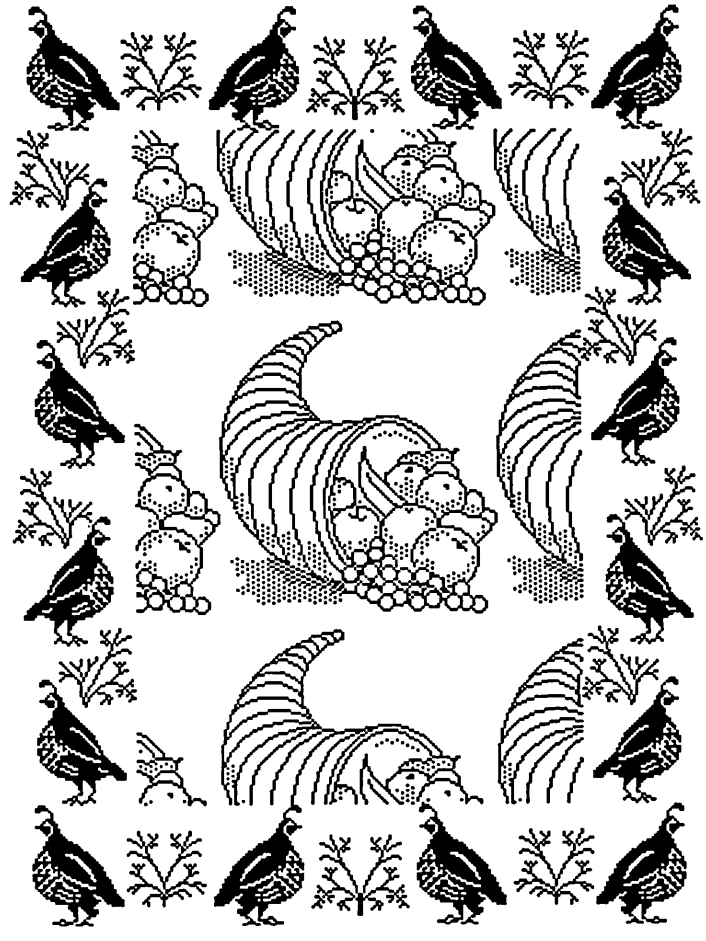
MWRescue Permits you to decode and write MacWrite documents to a text file. Try this on a short file first—it seems to run forever.

Scavenger Mac Recovers lost and deleted files as well as performs disk tests. The program will not recover files in every case.

In the CrashGuard Folder:

Crash Guard This init will dump you back to the finder in case of a crash, instead of getting a bomb box. ***Shareware - $3.00.***

Crash Guard Doc Documentation on how to use the Crash Guard feature.



WASHINGTON APPLE PI DISKETERIA MAIL ORDER FORM
Software for Creative Living

This form is only for ordering disks that you want mailed to you.
5 1/4" DISKETTES: - Members $ 5.00 each; Non-members $ 8.00 each, Plus $1.00 each postage up to a maximum of $ 5.00.
3 1/2" DISKETTES: - Members $ 6.00 each; Non-members $ 9.00 each, Plus $1.00 each postage up to a maximum of $ 5.00.
A $1.00 per disk discount on the above prices is offered for orders of 5 or more disks. Postage remains as above.

DOS 3.3 Volumes

( ) 41 IAC25 Mach.Lang.Util.
( ) 42 One Key DOS ***
( ) 43 IAC 29 Utilities H
( ) 44 Utilities I
( ) 45 Diversi-Copy ***
( ) 46 French Vocab. Tutorial
( ) 47 Tic-Tac-Toe in French
( ) 48 Boot for l'Hote
( ) 49 l'Hote Story
( ) 50 l'Hote Quiz
( ) 51 French Poetry Tutorial
( ) 52 Apollinaire Biography
( ) 53 Albert Camus Interview
( ) 54 Tic-Tac-Toe in Spanish
( ) 55 Rafel-boot
( ) 56 Rafel
( ) 57 Rafel Quiz
( ) 58 Matute
( ) 59 Lo Fatal
( ) 70 Business/Math/Statstic.
( ) 71 Music
( ) 72 Keyboard Games
( ) 73 Text Adventure Games
( ) 74 Paddle Games
( ) 75 Color Graphics for Fun
( ) 76 Education
( ) 77 Utilities
( ) 90 Spreadsheet C Gen. Bus.
( ) 91 Spreadsheet D Investmt.
( ) 92 Spreadsheet E Bus. Rec.
( ) 93 VisiPlot & VisiTrend
( ) 94 CALCULINK ***
( ) 95 Sprdsht F-Coin Coll.
( ) 100 Utilities A
( ) 101 Utilities B
( ) 102 Games A
( ) 104 Business A
( ) 106 Science Engineering
( ) 107 Games B
( ) 108 IAC 10(Graphics)
( ) 109 IAC 11(Applesoft Tutr)
( ) 110 Personal/Education
( ) 111 Games C
( ) 112 Utilities C
( ) 113 Business B
( ) 115 IAC 12/13 Misc.
( ) 116 IAC 14 MicromodemII
( ) 117 Picture Packer
( ) 118 Utilities D
( ) 119 IAC 15 Misc.
( ) 120 IAC 16 Misc.
( ) 121 WAPABBS 1.1 Doc.**
( ) 122 IAC 17 Misc.
( ) 123 French Vocabulary
( ) 124 Utilities E
( ) 125 IAC 18 Misc.
( ) 126 Sights and Sounds
( ) 127 Math/Science
( ) 128 Games D
( ) 129 GLAQ
( ) 130 Diversi-DOS (rev.) ***
( ) 131 Personal/Educ. 2
( ) 132 IAC 19-Utilities F
( ) 133 IAC 20-Pascal&DOS 3.3
( ) 134 New Members Disk
( ) 135 WAPABBS1.1 Disk**
( ) 136 WAPABBS1.1Disk2**
( ) 137 IAC 21 Spreadsheet A

DOS 3.3 contd.

( ) 138 IAC 23 Utilities G
( ) 139 IAC 24 Education 3
( ) 140 Education 4
( ) 141 Special Data Bases
( ) 142 IAC 28 Pinball Games
( ) 143 Sports
( ) 144 IAC 27 Applesoft Prog.
( ) 145 Apple Logo Tool Kit
( ) 146 Logo Documentation
( ) 147 App. Logo Samp.Prog.
( ) 150 EDSIG1 (Elem. Math)
( ) 151 1983 Tax Template
( ) 152 IAC 31 Miscellaneous
( ) 153 Investments A
( ) 154 Investments B
( ) 155 IAC 33 Miscellaneous
( ) 156 IAC 35 Applsft-AW//e
( ) 157 IAC 36 Arcade Games
( ) 158 Apple Logo Programs
( ) 159 Recipe Files
( ) 160 Utilities & Games
( ) 161 Wizard Worker
( ) 162 Games E
( ) 163 Graphs and Displays
( ) 164 Games F
( ) 165 Happy Holidays
( ) 166 Charts and Graphs
( ) 167 IAC 40 - Pilot Lang.
( ) 168 IAC 41&47-AW Util.
( ) 169 Hayes Term. Prog. ***
( ) 170 Love's Follies (Util.)
( ) 171 Cat-Graphix
( ) 172 Print Shop Graphics
( ) 173 Riley's Pers. Instru.
( ) 174 Imageworks
( ) 175 No Name Yet
( ) 500 Master Catalog Listing
( ) 501 Util.-Beginner's Choice
( ) 502 Util.-Intermediate User

Eamon Series Volumes

( ) 180 Dungeon Designer
( ) 181 Beginners Cave
( ) *182 Lair of Minotaur
( ) *183 Cave of the Mind
( ) *184 Zyphur Riverventure
( ) *185 Castle of Doom
( ) *186 Death Star
( ) *187 Devil's Tomb
( ) *188 Caves of Treas.Isl.
( ) *189 Furioso
( ) *190 The Magic Kingdom
( ) *191 The Tomb of Molinar
( ) *192 Lost Isl. of Apple
( ) *193 Abductor's Quarters
( ) *194 Quest for Trezore
( ) *195 Underground City
( ) *196 Merlin's Castle
( ) *197 Horgrath Castle
( ) *198 Deathtrap
( ) *199 The Black Death
( ) *200 The Temple of Ngurct
( ) *201 Black Mountain
( ) *202 Nuclear Nightmare
( ) *203 Feast of Carroll
( ) *204 The Master's Dungeon
( ) *205 The Crystal Mountain
( ) *206 The Lost Adventure
( ) *207 The Manxome Foe

Eamon contd.

( ) *208 The Gauntlet
( ) *209 Caverns of Langst
( ) *210 Future Quest
( ) *211 House of Secrets
( ) *212 Sewers of Chicago
( ) *213 Slave Pits of Kzorland
( ) *214 Alternate Begin. Cave
( ) *215 Lifequest
( ) *216 Swordquest
( ) *217 Priest of Xim!
( ) *218 Heros Castle
( ) *220 Utility II
( ) *221 Utility III
( ) *223 Temple of the Undead
( ) *224 Quest for Holy Grail
( ) *225 Caves of Mondamen
( ) *226 Orb of Polaris
( ) *227 Death's Gateway
( ) *228 Escape from Orc's Lair

ProDOS Volumes

( ) 802 Utilities (A)
( ) 803 Filecabinet
( ) 804 Shareware ***
( ) 805 '85 Tax Templates-AW
( ) 806 ZAP
( ) 807 Imageworks
( ) 808 Comm-Term

Forth Volumes

( ) 700 Assembler/Disassemb.
( ) 701 Full Screen Editor
( ) 702 GoForth Tutorial
( ) 703 Fig-Forth
( ) 704 Floating Point Arith.

Pascal Volumes (See also 133)

( ) 300 PIG0:ATTACH 1.1/BIOS
( ) 301 PIG1: ( ) 302 PIG2:
( ) 303 PIG3: ( ) 304 PIG4:
( ) 305 PIG5: ( ) 306 PIG6:
( ) 307 PIG7: ( ) 308 PIG8:
( ) 309 PIG9: ( ) 310 PIG10:
( ) 311 PIG11: ( ) 312 PIG12:
( ) 313 PIG13: Guerilla Guide
( ) 314 PIG14:

CP/M Volumes

( ) 401 Master Catalog
( ) 402 Utilities 1
( ) 403 Communications
( ) 404 Utilities 2
( ) 405 Utilities 3
( ) 406 ZCPR2 Install
( ) 407 ZCPR2 Documentation
( ) 408 ZCPR2 Utilities
( ) 409 Modem 730
( ) 410 Essential Utilities
( ) 411 Text Editor
( ) 412 Spreadsheet
( ) 413 MDM740(SSC&Com)
( ) 414 MDM740(7710&A-Cat)
( ) 415 Orig. 350 Pt. Adventure
( ) 416 Kermit Source Code
( ) 417 Kermit Documentation
( ) 418 Kermit Running Code

Apple /// Volumes

( ) 1001 Games Volumes 1 & 2
( ) 1002 Basic Utility Vol. 1
( ) 1003 Basic Utility Vol. 2

Macintosh @$6 (see above)

( ) 1 MS-BASIC Pgms
( ) 2 Atkinson's Goodies
( ) 3 Fonts
( ) 4 MS-BASIC Pgms
( ) 5 Desk Accessories
( ) 6 Mac Paintings
( ) 7 Desk Calendar&MS-Basic
( ) 8 MacFORTH Programs
( ) 9 Not One Byte
( ) 10 Mostly BASIC
( ) 11 & ( ) 12 Fonts
( ) 13 RAM Disk&Altrd. Finder
( ) 14 Filevision Templates
( ) 15 Progammer's Playground
( ) 16 New Members Disk 1985
( ) 17.3a Red Ryder 9.2 ***
( ) 17.2b " " "
( ) 18 MusicWorks Collectn. I
( ) 19 Mock Accessories ***
( ) 20 MacPaintings II
( ) 21 Utilities I (ResEd)
( ) 22 Desk Tools
( ) 23 Fonts III
( ) 24 Telecom I
( ) 25 Util. II (Switcher 4.4)
( ) 26 Am. Sign Lang. Font
( ) 27 Cyclan Develop. Sys.
( ) 28 World Mapping Prog.
( ) 29 Fun and Games
( ) 30 Education I
( ) 31.1 Dun.Doom/Eliza Talks
( ) 32 Fun and Games II
( ) 33 Desk Accessories II
( ) 34 Excel Tax Temp. '85
( ) 35 Fun and Games III
( ) 36 Utilities III
( ) 37 Fkeys
( ) 38 Graphic Tools
( ) 39 XLisp and Mini-ADA
( ) 40 Mac Videos
( ) 41 Cap'n Magneto
( ) 42 Studio Session (512K)
( ) 43 CE Software Sampler
( ) 44 Boston II Fonts
( ) 45 Games IV ( ) Modula-2
( ) 46 Games V Set of 3
( ) 47 Fonts IV disks-$15
( ) 48.2 Fonts V (no disc.)
( ) 49 Utilities IV
( ) 50 Paintings III
( ) 51.1 Telecom II(no sys)***
( ) 52.1 Utilities V
( ) 53 Utilities VI
( ) 54 Games VI
( ) 55 Games VII
( ) 56 Games VIII
( ) 57 New Member Disk '86
( ) 58 Desk Accessories IV
( ) 59 CE Sampler II
( ) 60 DesignScope Demo
( ) 61a& ( ) 61b Statview Demo
( ) 62 MORE Demo
( ) 63 MacAPL Demo
( ) 64 Spellswell&Gen.Led. Demo
( ) 65 Desk Access. V
( ) 66 Desk Access. VI
( ) 67 Desk Access. VII
( ) 68 Utilities VII
( ) 69 Utilities VIII

*Vol. 181 required with these disks. ** Vols. 121, 135, 136 must be purchased together. DATE: _____
*** Use of this disk requires sending money directly to the author.
Note: Allow 2 to 3 weeks for mailing. Total Order = ____ Disks; Postage $_____; Total Amount Enclosed $_____.

NAME: _____ Make check payable and send to: (U.S. funds payable on a U.S. bank.)

ADDRESS: _____ Washington Apple Pi, Ltd. Telephone _____
Attn. Disketeria

CITY, STATE, ZIP _____ 8227 Woodmont Avenue, Suite 201 WAP Membership No. _____
Bethesda, MD 20814

WAP TUTORIAL REGISTRATION

Apple //: The following three WAP tutorials are being offered to **Apple //** owners on the first three Tuesday evenings of the mo from 7:30 to 9:00 PM, at the office, 8227 Woodmont Ave., Bethesda, MD. (The tutorials start promptly at 7:30; if you bring computer please arrive 15 minutes early to set up.) You may sign up for any or all of the series. They are designed for the "beginner will be repeated monthly. A revised outline of the tutorials was given in the October Journal.

( ) No Apple //	- **WELCOME TO THE WORLD OF APPLE**	- ( ) January 6
( ) Beg. Tutorials	- **HOW TO USE YOUR APPLE SOFTWARE**	- ( ) January 13
( ) in December	- **POPULAR APPLICATIONS: APPLEWORKS**	- ( ) January 20

The fee for each tutorial is $10.00. You are urged to bring an Apple, monitor and disk drive. (Monitors are available for the 1s registrants - call office.) Please note that WAP does not have equipment for you to use; if you do not bring your own, you will have look over someone's shoulder.

.....

Macintosh: Tutorials for the beginners are given on the last two Monday evenings of the month at the office, from 7-10 PM. The for two tutorials is $30.00. An outline was given in the October Journal. You are strongly urged to bring your Macintosh. Th tutorials fill up quickly - call the office to verify space before mailing in your registration.

( ) Monday, January 19 and 26 (No Mac Beginning Tutorials on December 22 and 29)
( ) Monday, February 16 and 23

.....

Non-Regular Tutorials: The following tutorials are being offered in the next few months (at the office unless otherwise specified). See "WAP Fall Tutorials" by Robert C. Platt in the October Journal. The fee for these tutorials is $15 for each session within each tutorial ($20 each tutorial for non-members).

( ) **Postscript Implementations on Macintosh - Wednesday, November 19. 7:30 - 9:30 PM.** Fee $15, $20 non-mem.

( ) **Pascal Programming - Saturdays, November 22, December 6, 13. 9 - 12 Noon.** Fee $60 ($15 per session). For non-members, $80 ($20 per session). Note: Session 1 was on November 8. Learn structured programming with Instant Pascal on the Apple II, or Macintosh Pascal on the Mac. No prior programming experience necessary.

( ) **Wordstar - Lee Raesly - Saturday, January 10, 1987. 9 - 12 Noon.** Fee $15, $20 non-members. Master the most popular and powerful word processor available on Apple II - CP/M machines.

Please check the desired tutorials and return this form with fee(s) made payable to Washington Apple Pi, Ltd. to:

Washington Apple Pi, Ltd.
Attn. Tutorials
8227 Woodmont Avenue, Suite 201
Bethesda, MD 20814

Name _____

Daytime phone _____ Evening phone _____

Total Enclosed $ _____