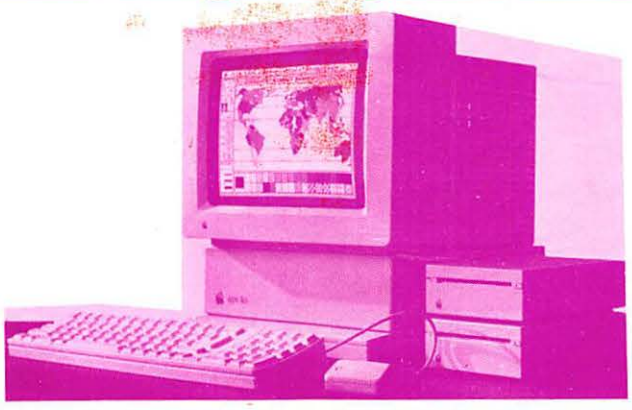
$2.50

Washington Apple Pi

The Journal of Washington Apple Pi, Ltd.

Volume 8 October 1986 Number 10

Highlights



In This Issue

For information on joining WAP, see "General Information", page 6.

Putting the *Personal* in Personal Computing...

Family Computer Center

An Authorized Apple Dealer

(and real nice people, too)

Come See The New Apple II!

Stop by Family Computer Center, the Metro area's Apple personal computer dealer and discover why we're selling personal computers that fit your specific needs. Here at Family Computers, we operate with the philosophy that you want a computer dealer who sells you the equipment you need (and only the equipment you need) at a price you can afford. You want personalized service, too? No problem. It's also our thinking that if you trust us enough to buy from us, you deserve the best in service, too. Our systems specialists ensure that you receive competent, timely technical support on every computer system you buy.That's forward thinking. That's what makes us the leader. Family Computer Center.

We're also leaders in the desktop publishing revolution. With newly announced price decreases from Apple, Family Computer Center can provide a complete publishing house (minus press) for a very competitive price. We also have the talent behind the equipment to make it work for you. This means that when you buy from Family Computer Center you not only get the best equipment to work with, you get the best people, too. Stop by and see our complete desktop publishing solution for your business needs today. Family Computer Center. Your full-service computer store. Now in two convenient locations.

Call Family Computer Center for a special WAP Macintosh Upgrade Price!!

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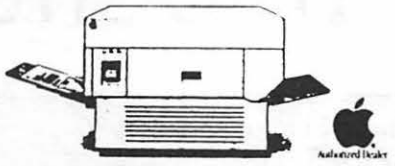
277 S. Washington St, Alexandria, VA (703)838-9700 ● 9636 Ft. Meade Rd, Laurel, MD (301)953-1110 or (301)792-0600 ● 6443 Old Alex. Ferry Rd, Clinton, MD (301)856-2500

Meet the Press



LaserWriter™ Plus isn't just a printer. It's also a computer with the same Motorola 68000 microprocessor that's inside Macintosh Plus, a hefty 1.5-megabyte of RAM, and a full megabyte of ROM. And inside the ROM is *POSTSCRIPT™*, the page-description language that is quickly becoming the industry standard.

Translated, this means you get complete control over every single dot on the page and can cover an entire page with virtually any combination of near-typeset quality text and high-resolution graphics (**like this ad, for instance!**). With eleven built-in typeface families, you can generate dozen of different type styles. For example:

This is Bookman 10-Point Bold Text

This is Palatino 12-Point Italic Text

This is Helvetica 10-point Plain Text

This is Helvetica Narrow 12-Point Underlined Text

This is New Century SchoolBook 10-Pt Plain Text

This is Times 14-Pt. Outline Text

This is 10-Point Zapf Chancery Text

This is 12-Point Avant Garde Bold Text

Training Available

Clinton Computer's Laurel store is offering a comprehensive training program on both the ***Apple™*** and ***IBM™*** microcomputers. Classes, currently scheduled through October, include New Owners' Workshops, Introduction to AppleWorks, WordPerfect, and many of the most popular software topics for ***Apple*** and ***IBM*** microcomputers.

Clinton's commitment to the "hands-on" approach to computer education 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, please contact Paula Majerowicz at our Laurel location: (301)953-1110 in the Washington area or (301)792-0600 in the Baltimore area.

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 Products
- Public Domain Software (Apple //, Macintosh and IBM)
- Upcoming Special Sales and Events

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

(301)856-2365

Clinton Computer Presents The New Apple IIGS™

This fall we're making it a lot easier to choose an Apple II. We will be selling a bigger, better family of Apple II personal computers: the astonishing Apple IIGS, the newly expandable Apple IIc, and the always popular Apple IIe.

Quite simply, the new Apple IIGS is the ultimate Apple II. It is powered by a new, 16-bit microprocessor. It is expandable in countless ways. It is compatible with most Apple II peripherals, and not only will it run virtually all Apple II software, but it will do so up to 280% faster than the IIe and IIc.

The Apple IIGS comes equipped with 256K of standard memory, which can easily be boosted by as much as 8 megabytes when higher-capacity chips become available.

The IIGS is capable of creating sharp, highly-detailed graphics resembling those of the Macintosh -- but enhanced with an endless palette of 4,096 colors (any 16 colors may be used at a time). It's 32-oscillator sound chip produces music, special effects, and even human voices with incredible realism.

A new, low-profile mouse is included, as are a system disk, a built-in clock, and an AppleTalk® connection. The detached Apple IIGS keyboard sports an ergonomic curved shape, and a built-in numeric keypad.

Currently, dozens of leading software developers are putting the final touches on a wide variety of new programs for the Apple IIGS -- programs that take full advantage of its graphics, color, sound, pull-down menus, windows, and desktop environment.

Save Money on Repairs!

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.*** Call Karen Smith at (301)856-2500.

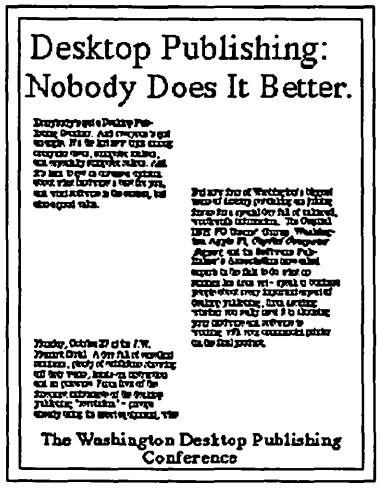
DISCOUNT POLICY FOR WASHINGTON APPLE PI MEMBERS

CLINTON COMPUTER offers Washington Apple Pi members a 25% DISCOUNT OFF THE LIST PRICE on all Apple brand peripherals and software and on AppleCare (no CPU's). 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.

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.

Desktop Publishing: Nobody Does It Better.

Everybody's got a Desktop Publishing Seminar. And everyone's got an angle. It's the hot new topic among computer users, computer makers, and especially computer sellers. And it's hard to get an unbiased opinion about what hardware's best for you and what software is the easiest and, most important, are good values.


Desktop Publishing:
Nobody Does It Better.

The Washington Desktop Publishing Conference

But now four Washington groups are joining forces for a special day full of unbiased, worthwhile information. **Capital PC User Group, Washington Apple Pi,** ***Capital***

Monday, October 20, 1986
9 a.m. – 5 p.m.

Exhibits only: $5 ($7 at door)
Exhibits and seminars: $30 ($40 at door)

Computer Digest and the **Software Publishers Association** have asked experts in the field to do what no seminar has done yet – speak to the spectrum of potential users, from business people to home users, about every aspect of desktop publishing.

Monday, October 20 at the JW Marriott Hotel in downtown Washington--Come for a day full of excellent seminars, plenty of exhibitors showing off their wares, hands-on instruction and no pressure.

Write for information:
P.O. Box 19763
Washington, DC 20036

Exhibitors – (703) 525-7900

The Washington Desktop Publishing Conference

Monday, October 20, JW Marriott Hotel in downtown Washington

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☛ 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

EDITORIAL

By the time you read this, you will have probably seen the new Apple IIGS. It is quite impressive and it seems to carry on in the Woz tradition—a large dollop of raw computing power with a dab of computing fun. Color, lots of it. Sound, lots of that too. And the Mac interface. Many will react favorably to it and will rush out to buy it. But those of you who do so will learn that it is a **seller's market**—at least for now. You will be faced with choices of monitors and drives, and if you wish to go scuzzy then you will need to also purchase a SCSI interface card. Then just before filling out the check you will be told not to forget the expansion card—"Most new Apple IIGS software applications will require this card." All this boils down to significantly more than the advertised prices. As for you //e folks, you will probably have to wait until mid (or later) 1987. Note also that the mouse and keyboard are optional extras and the dealer must make the modification to install the keyboard. (There is, however, at least one 3rd party version already available.) //c owners will have to be content with the memory upgrade. No upgrade from Apple as of now. Perhaps 3rd party vendors will come to the rescue here, too.

If this sounds negative to you, it isn't meant to be. Merely an observation concerning the market place. New items in vogue demand premium prices. Apple has a winner here, but you'll have to pay premium for it. Perhaps when the initial flush of interest subsides and when page composition software and Midi interfaces appear, then there will be excellent reasons for upgrading.

PRESIDENT'S CORNER
by Tom Warrick

Did you miss the August meeting on games? I hope not—it was one of the best we've had in many a month. In addition to putting on presentations of some of the year's most exciting games,***RonWartow*** was able to attract some of the top names in the industry, including ***Lord British*** (Ultima) and ***Robert Woodhead*** (Wizardry), each of whom demonstrated small, tantalizing snatches from their next hit programs.

After the meeting, many GameSIG members retired to the beautiful home of ***David Granite*** for a party in honor of the out-of-town guests. Although I'm no Diana McClellan, I can say that it was the place to be that afternoon, dahlings! Any of you who are parents of youngsters would have been amazed to see so many young people sitting quietly with rapt attention around Lord British. But the highlight was seeing Ron Cool—the man who for years boasted that none of his computers had ever booted a disk that wasn't a game—in his element, with ***Lynn Bresett*** of Sir-Tech at his side, Lord British on his right, and Bob Woodhead on his left. I'll bet Ron thought he'd gone to heaven.

The August meeting was Ron Wartow's finest hour. Alas, however, after two years as GameSIG chair, Ron is passing his mantle on to ***Thomas Johnston.*** WAP's successes are due to the work of many dedicated volunteers, and Ron is one of the most dedicated of those. He took GameSIG from a state of complete inactivity to one of WAP's most active special interest groups. Although we will miss him as chairman of GameSIG, he will continue to play an active role in GameSIG and WAP. You will be pleased to know that Ron has agreed to stay on as GameSIG Chairman Emeritus.

If you have an interest in desktop publishing—and these days it seems everybody does—be sure to catch the ***Desktop Publishing Conference*** to be held on Monday, October 20 from 9:00 a.m. to 5:00 p.m. at the J.W. Marriott Hotel in downtown Washington. The keynote speaker will be ***Paul Brienerd,*** president of Aldus Corporation, publishers of PageMaker. A number of major players in the desktop publishing field, including Apple Computer, Inc., will be there, and there will also be several interesting speakers on a wide range of desktop publishing subjects. The admission fee to the exhibits only is $5 ($7 at the door); to both the conference and exhibits admission is only $30 ($40 at the door). If you or your company are interested in exhibiting at the Conference, contact Peg Clark at (703) 525-7900. The conference is being sponsored jointly by Washington Apple Pi along with Capital Computer Digest, Capital PC User Group and the Software Publishing Association. Much credit goes to Desktop Publishing SIG chair ***Tom Piwowar*** and WAP Journal editor ***Bernie Urban*** for putting in a great deal of work on what promises to be an interesting show.

There was considerable interest at the July Mac meeting in ***AppleLink,*** the easy to use and very powerful communications system developed by Apple Computer, Inc., General Electric Information Services Company (GEISCO) and Central Coast Software. GEISCO markets a similar system for general business (and governmental) use called ***BusinessTalk.*** We didn't think there would be as much interest in the system as there was at the meeting, or we would have invited someone from GEISCO to talk about how AppleLink was developed. Several people asked who they might contact for more information, so I used AppleLink (it was easy!) to contact Matthew Leek, the Manager of GEISCO in Palo Alto. He quickly replied that the Washington, D.C. BusinessTalk representative is: Ms. Phyllis Verma, Account Manager, GEISCO,1300 North Seventeenth Street, Arlington, Virginia 22209. (703) 276-4000.

I am pleased to report that ***Bob Platt,*** recently returned to Washington from the Wild West, has become the trail boss of our ***tutorial program.*** In addition to the regularly scheduled introductory tutorials that WAP has run in the past, Bob has added tutorials on every Saturday through the end of the year. See the registration page near the end of this month's Journal.

On a less pleasant note, I have to report that we've found out why the WAP ***Telecommunications System*** has been crashing occasionally during the last few months. Normally, of course, it would be a pleasure to report that the cause of a major system failure has been found, but not here. It appears that someone who at one time legitimately had high-level access to the system has been causing it to crash by replacing the current versions of several of the program's many modules with older versions that contain bugs. While this could be (and was) easily noticed on BASIC files, this person has also been "tinkering" with the machine language modem driver, which also does a number of other important things. The crasher has replaced the real modem driver with a replica of his or her own devising. The bogus modem driver has presented a real challenge, as it has to be disassembled in order to determine what the culprit has done. ***Lee Raesly*** and his crew have had to spend an enormous amount of time in the last few weeks working on security and on bringing the system back up rather than doing other, more productive things such as installing a ***backup Corvus system*** the Pi was able to pick up cheaply. They deserve our thanks for the time they have put in. As to the guilty party, I am told that there is a significant amount of circumstantial evidence pointing to a particular suspect, but there is no proof that would satisfy the WAP Board of Directors—or the police, to whom you may rest assured we plan to take any evidence of criminal conduct.

contd.

Calling all cars . . . be on the lookout for a program called ***"CricketDraw."*** I didn't see much at the Boston MacWorld Expo, but several people told me that this successor to MacDraw was worth taking the time to see. I did, and it was. Even though CricketDraw was still pre-release, it has all the features of MacDraw and many more besides, including full 360° rotation and perspective. Now, many of you know that I've long been critical of Apple for their failures with regard to MacDraw—it took too long to get out what should have been a simple program based almost entirely on QuickDraw calls, and when MacDraw did come out it was buggy. The first revision (version 1.9) fixed those bugs but introduced others, and so on. But it appears that CricketDraw may fulfill MacDraw's promise.

And while I'm on the subject of MacDraw, remember the program released at about the same time, ***MacProject?*** MacProject 1.1 is out (take your original disk to your authorized Apple dealer for a free update), but it still has the incredibly annoying scrolling bug: When you click in the vertical scroll bar, instead of the display advancing one screen, or (better yet) a little less than one screen, it advances about one and a quarter screens. Aaarrrggghhh!!! So I've given up MacProject again. You know, folks, it cannot be a coincidence that the Macintosh application software Apple ships under its own label is buggy or subject to some strange quirks. (The only exception was MacWrite—we thank you, Randy Wigginton.) Something has to be done.

Interestingly enough, WAP received this rather timely message on AppleLink:

```
Dear User Group Representative,
 I need your help.  I work within the software
division at Apple and am trying to collect some
information from "real world" end users of
MacProject and MacDraw.  I would like you to
inform your members of my quest and supply how our
software is being used.  I am looking for straight
and narrow examples as well as the outlandish.
All disks submitted to me will be returned.  I
would appreciate any help you could offer.
 I can be reached at:
  Daniel Paul
  Apple Computer, Inc.
  20525 Mariani Avenue, M/S 27P
  Cupertino, CA 95014
 Again, thanks for your help.
```

Another update that will soon be out is ***version 2.0*** of Apple's ***Macintosh Development System*** (MDS). The original MDS Edit program, written by ***Bill Duvall,*** had its bugs (files occasionally became corrupted and the screen display occasionally filled with the wrong text) and quirks (command-key equivalents for menu commands were not in a resource file, so it was impossible to customize menu items) so we'll see how Apple fares this time. If the new Edit lives up to its billing, it should be quite spectacular.

ANNAPOLIS APPLE SLICE
by Claire Johnson

The Annapolis Apple Slice of Washington Apple Pi held its second meeting on Saturday, September 13. We talked about Desk Accessories, including MacLightning (a tool guaranteed to improve the product of all Mac writers), Mac program function keys, hard disks and modems. All these state-of-the-art ideas were gleaned from Martin Milrod, representing WAP. Annual dues were set at $15. Committees were assigned to compose a charter for presentation at our next meeting, plan programs, set up a bulletin board, encourage memberships, set up tutorial sessions, and begin a Disketeria effort. Election of officers was waived until our charter is approved. Annapolis area WAP members are invited to join the Slice at our next meeting on October 11 at 10:00AM in the Lecture Hall at Anne Arundel Community College. Meeting dates are planned for the 2nd Saturday morning of each month. Call Jim Wint (301) 544-5850 to get on the mailing list for meetings, and to receive an application blank.

BYLAWS CHANGES

Pursuant to Article XV of the bylaws of Washington Apple Pi, Ltd., notice is given of the following bylaws change, which was made at the August 20, 1986 Board of Directors meeting. ***New material is shown in bold italics;*** material deleted is underscored.

ARTICLE XII, SECTION 1. DISBURSEMENTS. Disbursements over $25.00 shall be made only by check. Any disbursement over $5.00 shall be supported by voucher or receipt. All checks, drafts notes and evidence of indebtedness of the Corporation shall be signed by the Treasurer and either the President or the Vice-President. However, the Director of Group Purchases shall have authority to sign checks in an amount not to exceed $500.00, and the Treasurer shall have authority to sign checks in an amount not to exceed $5,000.00 ***$6,000.00.*** Designated staff shall have the authority to sign checks in an amount not to exceed $6,000.00 from an imprest fund established by the Treasurer ***or from such other accounts as the Board of Directors may by resolution determine.*** [Amended April 1983, June 1983, January 1984 and October 1986.]

The Board of Directors made the first change because the continually increasing size of WAP's membership makes some bills, such as printers' bills, larger than $5,000. The second change was made so that one of the office managers could sign checks on the Pi's passive income account, which is used to pay expenses associated with WAP's educational mission. Previously, such checks had to be signed by the Treasurer, which usually necessitated several days' delay before such checks could be sent out. The Board of Directors voted at its August 20 meeting to add Genevie Urban as a signatory on the passive income account.

APPLE TEAS

Would you like to gather some Apple users together to discuss a topic that you're interested in or one that you'd like to know more about? That's what an Apple Tea is all about. 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, exapand 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 resourse 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 November:

Washington Apple Pi
Northwest Washington, DC Apple Tea
Saturday November 15th, 7:30 - 9:30 PM
Dvorak on All Kinds of Apples:
Typing Made Easy on an
Efficient (Ergonomic) Keyboard
at the home of Michael & Ginny Spevak
5320 Belt Road, NW
Washington, DC 20015
Experts, novices and the curious are welcome.

Please RSVP to 362-3887 or 362-9119 (leave message on machine). Directions: From the West, take 495 to River Road to Western Ave. Left on Western. Cross Wisconsin. Bear right on Military Road. Turn Right on Belt Road, 4th right past 42nd St. 5320 is the unpainted modern wooden house on right in middle of block. From the East: Take 495 to Conn. Ave. exit South to Military. Make a right turn on Military. Make first left onto Belt Road, immediately after traffic light at Reno. From Wisconsin Ave. coming South, turn left at Western and follow River Road directions above. Metro: Take Red line to Friendship Heights, Jennifer Street exit. Walk east on Jennifer 4 blocks past 42nd Street. Turn left onto Belt Road. House on Left.

LETTER TO THE EDITOR

Dear Editor,

This is a copy of a letter which I sent to Mindscape, Inc. on August 25.

"I was quite impressed by the demonstration of UNINVITED at the August meeting of Washington Apple Pi—so impressed that I rushed out to buy a copy, without even waiting to get a better price from a mail order house. It's a great game (if I can ever figure out how to grab that #*L*L$#% key) but I was very disappointed to see that there is no way to make a backup copy of the program disk, nor to load the program onto a hard disk. The half-way measures outlined in the manual for copying only one of the two disks are really not a satisfactory substitute.

As a Macintosh developer myself, I can appreciate some of the motivations behind copy protection. As someone familiar with disassemblers, debuggers, and bit copiers, I also appreciate the ultimate futility of copy protection. As a user, I am painfully aware of the inconvenience caused to legitimate purchasers by heavy-handed copy protection schemes. I hope your company will reconsider its copy protection policy."

Michael Yourshaw

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.

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:

Oct	25	- II Products by AST Research
		- Macintosh bridges to other computers
Nov	15*	- Foundation (AW replacement) &
* 3rd Sat.		new tax laws for computers

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

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
Thursday	-	7 PM to 9:00 PM
Saturday	-	12 Noon to 3:00 PM

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.

* October 1986 *

WAP

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
			1 dPub SIG, 7:30 PEPCO Mac Prgrmrs 7:30 Office	2 GameSig 7:30PM-Off. Mac Progrms 7:30PM-Lady of Lourdes	3	4
-> Monday, 6th is deadline for Journal articles	6 PI-SIG 7:30 PM Office	7 Apple// Beginning Tutorial#1 7:30-9:00PM Office	8 Executive Board 7:30PM Office	9STOCKSIG 8PM Office; FAC Slice 7:30 MRIID Ft.Detrick	10	11 MusicSIG 1:30PM Call Ray Hobbs
12	13 Telecom SIG 7:30 PM Office	14 Apple// Beginning Tutorial #2 7:30-9:00PM Office	15	16 Pascal SIG 8:00 PM Office	17	18
19	20 Mac Begin. Tutorial #1 7-10 PM Office	21 Apple// Beginning Tutorial #3 7:30-9:00PM Office	22 Apple /// Ch. of Com. Bldg., DC 7:30 PM	23 EDSIG 7:30 PM Office	24	25 WAP meeting - Apple // & Mac 9AM - USUHS
26	27 Mac Begin. Tutorial #2 7-10 PM Office	28 TCS Comm. 7:30 PM Office	29	30 Deadline for Dec issue-early mtg. date	31 And the Goblins'll get you if you don't watch out!	

* November 1986 *

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
						1 Note: early deadline for Dec issue is Oct. 30
2	3 PI-SIG 7:30 PM Office	4 Apple// Beginning Tutorial #1 7:30-9:00PM Office	5 dPubSIG 7:30 PEPCO Mac Prgmrs. 7:30 Office	6 GameSIG 7:30 PM Office	7	8 MusicSIG 1:30 PM Call Ray Hobbs
9	10 Telecom SIG 7:30 PM Office	11 Apple// Beginning Tutorial #2 7:30-9:00PM Office	12 Executive Board 7:30 PM Office	13STOCKSIG 8PM Office; FAC Slice 7:30 MRIID Ft.Detrick	14	15 WAP meeting - Apple & Mac 9 AM-USUHS
16	17 Mac Begin. Tutorial #1 7-10PM Office	18 Apple// Beginning Tutorial #3 7:30-9:00PM Office	19	20 Pascal SIG 8:00 PM Office	21	22
23	24 Mac Begin. Tutorial #2 7-10 PM Office	25 TCS Comm. 7:30 PM Office	26	27 Thanks-giving Day	28	29

SIGNEWS

Apple /// SIG meets on the 4th Wednesday of the month at 7:30 PM in the Chamber of Commerce Bldg., 1615 H Street NW, DC. The next meeting will be on October 22.

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) meets on the first Wednesday at 7:30 PM in the PEPCO auditorium at 1900 Penn. Ave., NW. The next meeting will be on October 1.

EdSIG (the education special interest group) meets on the 4th Thursday of the month at the office, 7:30 PM. See Edsig News elsewhere in this issue.

FEDSIG meets on the last Wednesday of the month at 7:30 PM at the office.

GameSIG meets on the first Thursday of each month at the office, 7:30 PM. The next meeting will be on October 2. See their news elsewhere in this issue.

MusicSIG meets on the 2nd Saturday of each month at 1:30 PM. Call Ray Hobbs at 490-7484 for place.

PIG, the Pascal Interest Group, meets on the third Thursday of each month at the office, 8:00 PM. The topic of the October 16 meeting will be "Getting Started with Apple // Pascal." New and prospective users are welcome.

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 Wedneday of each month at 7:30 PM at the office (change in location). The next meeting will be on October 1.

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	John Day	(301) 621-7543
	Dave Harvey	(703) 527-2704
	Robert Martin	(301) 498-6074
Accounting Packages		
Accountant(Dec.Sup.)	Mark Pankin	(703) 524-0937
BPI Programs	Jaxon Brown	(301) 350-3283
	Otis Greever	(301) 262-5607
Home Accountant	Leon Raesly	(301) 439-1799
Howardsoft (Tax)	Leon Raesly	(301) 439-1799
	Otis Greever	(301) 262-5607
APPLE SSC	Bernie Benson	(301) 951-5294
Apple TechNotes	Joe Chelena	(703) 978-1816
AppleWorks	Jay Jones (Balt.)	(301) 969-1990
	Ken Black	(703) 369-3366
	Ken DeVito	(703) 960-0787
Communications Packages and Modems-Telecom.		
Anchor Mark 12	Jeremy Parker	(301) 229-2578
Apple Modems	John Day	(301) 621-7543
ASCII Express	Dave Harvey	(703) 527-2704
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
	Rob Clark	(804) 872-9070
Comm. & Modems	Steve Hunt	(301) 262-9080
Concertware	Skip Horvath	(703) 536-4091
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
Lang.-C,Pascal,XLisp	Carolyn Komada	(703) 691-1986
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
MusicWorks	Skip Horvath	(703) 536-4091
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 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	(301) 262-5607
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	Raymond Hobbs	(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) 779-8938
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) 527-2704
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

WANTED: Used Apple][+ (64K). (H) 301-599-1026; (W) 301-981-4222.

WANTED: Used Macintosh short keyboard. Will pay up to $65. Ask for Jack at 202-287-3460.

FOR TRADE: I have an NLQ LPrinter model 160 (160cps) from Printers+ with 1 year of warranty left, and the latest version of Epstart. Would like to trade for Imagewriter I. You get NLQ capability and I get new ROM capability. My printer was recently replaced under 2-yr warranty for trivial problem, so it is virtually new. Extra ribbon included. Call Larry, (H) 425-7058; (W) 633-6459.

FOR SALE: Used Mac software: Microsoft Multiplan,$60; pfs File/Report, $40. Complete docs, original packing. Malcolm Ross, 294-0289.

FOR SALE: Transtar 120 daisywheel letter quality printer, $225; ProPrint Mac software for Transtar and other daisywheels, $35; AB switch Box, $45; Microsoft Chart, $50, MacTote carrying case for Mac 128K or 512K, not Mac+, $65; Apple numeric keypad, $50 (not made anymore). Any reasonable offer considered. Call Lynn R. Trusal in Frederick at (301) 845-2651, evenings with no calls after 10:00 PM.

FOR SALE: 400K Apple disk drive for Mac, $150. Call Dan Adkins at (H) 822-8052 or (W) 252-5990.

FOR SALE: IBM Graphic Printer w/cable in original box with manual, $210; 6' RS232 modem cable, $15; Apple Integer Card, $35; Microsoft Softcard II 6-MHz w/64K (new), $225. **WANTED:** Used Apple //c green monitor and stand. Call Tom, evenings only, 935-5520.

FOR SALE: Apple][+ 64K, Videx 80-col. card w U/L case soft switch, 2 Apple][drives, Apple Interface card, 12" green monitor, $650. Also, CP/M Z-80 card, $75; Novation Apple-Cat II 300 baud modem (with expansion block), $85; 128K Saturn card, $125; Pkaso card, $20. Plus lots of free software to CPU buyer. Special bundled price for all, $850. Call Ron Brenner, 301-460-4445.

FOR SALE: //c, latest motherboard, case, monitor with stand, second disk drive, modem with ASCII Express, Mach III joystick, Imagewriter I printer, all manuals. Over 50 disks with software. $1100. Call Rachel Shea, 301-498-9352.

FOR SALE: Macintosh Plus computer and Imagewriter II. Never been used. Still in cartons. Must sell together, $2350 or best offer. Call Chester Gould, 735-7753.

FOR SALE: 512K Macintosh, $1250. 400K external disk drive, $150. Call Mike Brick, (H) 301-350-5129; (W) 301-294-2004.

FOR SALE: Apple /// green monitor (excellent condition), $75; Apple II series Accounting Plus II, Payroll Module, $175 (sacrifice). Call Norm Cohen, 301-262-7823.

FOR SALE: Apple //e 64K, disk drive, monitor, 80-column card, joystick, Apple Writer //e, Sargon II, other game software and disks, $850. Call Robert Diamond, 202-296-6710.

FOR SALE: Apple /// computer, color monitor, 128K, 2 drives, and software (Business Graphics, Apple II Emulation, Apple Writer ///, Apple Access). $800 or offer. Call Danna Taylor, 703-821-4457, 9 - 5, if interested.

FOR SALE: Parallel printer card for Apple][and //e, $60/offer. Call Dave 459-0916.

FOR SALE: Apple Graphics Tablet with software and Penguin's complete graphic system, $375. Contact Dave Albert, Origin Systems, 603-644-3360, 340 Harvey Road, Manchester NH 03103.

COMMERCIAL CLASSIFIEDS

Tutorial Service Available: Apple Macintosh computer instruction given in the general Frederick MD area. General instruction or specific software. AppleTalk consultations and installations and help with pre-buy decisions. Personalized service and reasonable rates. Call Lynn R. Trusal, 301-845-2651, evenings with no calls after 10:00 PM.

The Mouse Droppings Book of Macintosh™ Hints. 100 pages. Gigantic 14-page index. $8.95 postpaid. Philip C. Russell, 430 SW Crest Circle, Waldport OR 97394.

FOR SALE: Five 400K Mac external disk drives. $200 ea. or $800 for all 5. Call Ginger, 202-628-6282.

FOR SALE: Apple //e 128K, ext 80-col., sup. ser. card, 2 full ht. dd's, sys. svr, RFmod, num. keypad, monitor, joystick, cover, 50 disks, some software, and manuals. 1-yr. old, $1500 or best offer. Call Bruce 4 -11 PM M-F, 9AM - 11PM Sat. or Sun. 301-788-1303.

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.

JOB MART

POSITION DESIRED: Experienced Desktop Publishing, PostScript and graphics-oriented male desires position in Macintosh environment. Vast equipment and typesetting experience in other hardware, including disk conversions. Can commute or work from home. Jay Rohr, 301-655-0875.

HELP WANTED: Person to program Pascal menu-driven tutorial material in connection with a program now written in assembly language that does Monte Carlo experiments in probability and statistics. Time required is not immediately known. Payment subject to negotiation. If interested call Julian Simon, 301-951-0922, Chevy Chase.

APPLEWORKS SIG NEWS
by Peg Matzen

AppleWorks SIG members at both the 8:00 and 12:00 o'clock sessions had no trouble (as usual) pinpointing problems and finding eager peers with ready solutions.

Lou Pastura brought his //c for the purpose of exchanging the public domain software from The AppleWorks User's Group (TWAUG).

Many public domain AppleWorks notes, templates, etc., (techniques supplied by WAP users) are available at the WAP office for members.

Our library Function is also getting underway. Richard Rowell (301-231-9086) has agreed to serve as Disk Librarian. He will evaluate the 28 disks from TAWUG and catalog them: a) by what is on the disk; b) by name of file alphabetically; and c) by kinds of files—i.e., word processor, data base, or spread- sheet. Stuart Spransy (703-265-3362) has agreed to serve as Hardcopy Librarian. If you have any good published articles or tips relating to AppleWorks, contact Stu. The articles/tips and the disk catalogs/evaluations will be available from the AWSIG Librarians and also through the AppleWorks section of the WAP library when they are completed.

Ken De Vito, who chaired the 12 o'clock group, announced that AppleWorks SIG has been invited to host the regular WAP meeting in January. He asked that any SIG membrs having an application of universal interest volunteer to demonstrate it and he also asked for help in planning the program.

Curtis Lauret discussed a data base program that he developed to catalog the VCR tapes available at Erol's Video Club and the ones he and/or his family wants to see over the weekend, as well as eliminate the ones they have seen. The output from his query results in a current listing of tapes to rent which he then takes to Erol's for selection and renting. He agreed to present this unique program as part of the WAP AWSIG program in January.

Also, as part of the January WAP program, Gene Brown volunteered to present Mailmerge with AppleWorks.

Amy Billingsley reminded the group that Apple Teas are excellent ways to share information and get better acquainted. The host chooses the specific topic, provides a resource person for the topic (hint: use the Hotline), and offers his/her home and refreshments. Call Amy (301-622-2203) to schedule one. We have had a number of really informative AppleWorks Apple Teas and will be having more soon. George Sall, Chairman of the 8 o'clock group, plans an AppleWorks tea on the topic "RAM Disks and AppleWorks". Call Amy for details.

A discussion of Z Ram and AE RAMWORKS II add-on boards between Lou Pastura and Ken De Vito resulted in the following: Have rarely seen the desktop reflect lower than 500K with a 1 Meg RamWorks II card configured for AppleWorks. In order to expand use of the RamWorks card Ken configured Fontrix and a number of Fonts to automatically load into the available 6 RAM drives within Slot 3. Some modification of this "non-copy-protected program" was required (a good reason to insist on non-copy protection from the software developers). The Basic Fontrix Disk costs $65. There are now 14 various font disks—each disk has about 13 different fonts/figures/graphic sets on it,and others have exotic ways of displaying the ABC's, etc. Since disk access using Fontrix was excessive, the effort to convert it to utilize the RamWorks II Card was worth the time and trouble. Ken now uses Fontrix for all his graphics efforts—with Graffiles (which provide a bit-mapped graphics workspace) he can write all the way across a 23 screen matrix. Both Ken and Lou recommend it highly. However, if you have little patience and like fast moving programs—you must load it, along with the associated fonts and your creations into RAM!

Other bits of information that evolved during the session included a discussion of problems involved with using pathnames:

Ken De Vito outlined a typical file broken down by pathnames (directories and sub-directories for the Big Blue types) and showed some of his techniques in naming files so that he could easily access them.

Richard Rowell said, "Don't name disks 'AppleWorks', rather use just three-character names." And it is not really practical or necessary to have subdirectories on floppy disks. Just add files to desktop by asking for individual AppleWorks files by path and file name, if necessary. He also said that Copy II Plus with AppleWorks is the best way to access and view files and check disk function.

The book and disk "Applying AppleWorks" ($13), advertised in A+ Magazine, provides an enormous amount of straight information about AppleWorks.

Locksmith 6.0 is recommended as being an excellent program to offer the encryption and decryption of files.

Bill Burns recommended MouseDesk, from International Solutions. It was designed for the Mac, but is now available for the Apple II series—when you put in the disk, you will see all the files on the disk, but you really need a mouse to use it, although you can use the keyboard in a pinch.

A demand is growing for genealogical programs to be developed for AppleWorks. TAWUG.15 carries a data base file, FAMILY TREE, and a FAMILY TREE INFORMATION FORM developed by Jerald K. Mason, R #1, Box 219, Rocheport, MO 65279.

Apple Inc. has donated an Apple /// to the WAP office. Supposedly, any AppleWorks data disk will work in this computer. The system is now up and running.

A new AppleWorks Bulletin Board is now on-line in Towson, MD. Users who download programs are asked to add another in its place. If you take one, add one.

Ken De Vito told the group that Dave Ottalini has proposed that AppleWorks SIG combine with the Apple /// SIG, with a proposed name of AppleWorks/3-EZ Pieces SIG. Because of the limited attendance at the meeting, members were requested to think about it and discuss it during the next meeting in September.

EDSIG NEWS
by Patricia Kirby

EDSIG Calendar

Thursday, October 23, 7 - 9 p.m.
Trinity College—Computer Lab, Science Bldg.
4th & Michigan Avenue, NE
Topic: "Using Appleworks in Teaching and Training Applications."

Trinity College offers an M.A. program in "Computers in Education and Training." Dr. William Lynch, Director of the program, will briefly describe what Trinity offers, in addition to the evening's topic.

Parking is available next to the Library (first building on your right through the main gate) and on Michigan Avenue. Trinity is near the Brookland Red Line Metro stop, and several buses pass by it. Contact Peter Combes for details at 251- 6369, or Patricia Kirby 847-5710 (day).

We are going to be holding several meetings this year at local colleges and schools, and hope to attract a large group of both teachers and trainers.

EDSIG meeting notices are now being sent to local area training group chapters such as the National Society for Performance & Instruction and the American Society for Training and Development. They are also going to Capital Computer Digest and to all the local area parochial and public school district computer instruction offices, some of which send out newsletters to their teachers.

Meeting Reports

At the September meeting, Peter Combes demonstrated the final version of his soon-to-be-released D.C. Heath Company program, "Intervideo." This is an educational authoring system that enables teachers and trainers without specialized knowledge to prepare interactive lessons using an Apple computer and a video disc player. It has been widely acclaimed at prototype demonstrations. We will review Peter's program in next month's journal.

At the July 24 meeting, Carol Thomas demonstrated "Newsroom," an elementary desktop publishing program with which she publicizes Media Center news in her position as media librarian at Rockville High School. Her program was not the latest version, however; the newer version reportedly offers a number of improvements, such as in choice of visual effects.

With "Newsroom", you can create banner headlines, text columns, and "photos" (no threat to digitizing programs, as they are more like cartoons). Carol demonstrated some of these editing features in putting together a newsletter. The banner headline involves selecting a graphic from a menu, and then positioning it very exactly. Carol found some of the banner structure problematic, such as the need to enlarge a banner by running panels together.

Similarly, pictures are "taken" from a menu, and then positioned into place in the newsletter. Once there, you cannot type in text—similar to what happens when MacPaint art is pasted into word processing. "Newsroom" lets you edit pixel by pixel. Some attendees noted that Carol's newsletter text was hard to read single-spaced, but found it easier when double-spaced. "Newsroom" offers more than one type font.

Carol has used this program to create media center news, but never used it with students. However, two participants mentioned that they had used it with students and found it somewhat awkward.

"Print Shop" was discussed by several participants. "Print Shop"—with its large collection of clip art graphics and far more formats and pictures—offers very attractive artwork for posters, signs, letterheads, awards, cards, and banners. It is very user-friendly. Several participants had used "Print Shop" very successfully in the classroom.

Those who had used word processors with students extolled "Milliken Word Processor" and "Magic Slate," a word processor that allows a teacher to have an aide type up a story as the children create it and it is then available for the children to take copies home.

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.

MICROS IN EDUCATION CONFERENCE: A Book Review

by Phil Shapiro

The fifth annual Microcomputers in Education Conference, edited by Donna Craig, does not make good bed time reading. Unless, of course, you want to fall asleep.

The book consists of a selection of academic papers submitted at a conference of computer using educators. The table of contents includes a number of promising sounding pieces. Wouldn't you think that the following papers sound like they would be worth reading: "Computergarden: A First Step Toward Technology for Primary Level Children", "Computer Organized Writing (Interactive Word Processing)", "The Microcomputer in a Special Education Setting", and "Creating Adventure Games in Logo"? Yet in all too many cases the promise goes unfulfilled.

The problem with this book is not in what the computer using educators have to say, but how they choose to say it. Some authors seem to go out of their way to give new meaning to the word "convoluted". What could easily be communicated in plain English is shrouded in obfuscating jargon.

Shame on you, educators, of all people, to twist the English language into such awkward shapes. You, to whom we entrust the duty to teach our young to communicate, should cringe at the very thought of tying up sentences in knots with jargon.

But, perhaps I judge too harshly. What conference of any profession has papers submitted in plain, comprehensible English? After all, the educators in this book simply lived up to the expectations of the profession to make each and every sentence sound ponderous and weighty.

People write to share their thoughts. And people share their thoughts when they feel like they have something important to say. What a pity, then, that the communicative purpose of the book is so thwarted.

This is not to dismiss the book as having nothing important to say. Chances are that underneath the jargon some of these computer using educators have something important to say. Somewhere.

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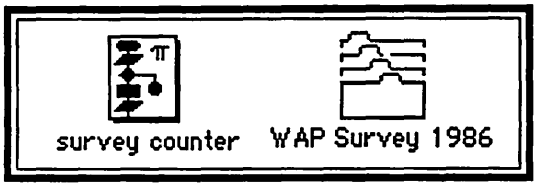
1986 SURVEY RESULTS
by Tom DeMay



One of the traditions (traditions?—boy have we come a long way!) of Washington Apple Pi has been to include with the election ballot a survey form asking for opinions, preferences, and suggestions. The answers to these questions not only help the Board of Directors know how well they are doing, but also tell us a little about ourselves. What follows is one person's interpretations of those results and some interesting comments from you the members.

More people voted this year than any other year in WAP history. Over1,350 ballots were received. Multiply that by 52 questions each, and you will see that it was quite a job just entering the data. Being a basically lazy person, I wanted to use a computer to do as much of the work as possible. The first attempt was to enter the data directly from the survey form into OverVue. This proved to be most unsatisfactory. The problem wasn't with OverVue, but with attempting to enter data into the correct columns.

The solution came in the form of a Microsoft Basic program that accepted the column (question) number and deposited an "X" in an array which represented the corresponding column for each ballot. The results were stored in a text file consisting of one record for each entry. The program on a Macintosh disk, and a four-inch pile of survey forms were distributed to several volunteers. When the disks were returned to me, I used OverVue to "import" the data and combine the several text files into one large database.

First some totals, then a little closer look. Here are the responses to the question about which computers we use at work and at home:

Computer	At Home	At Work
Apple][	62	16
Apple][+	312	108
Apple //e	391	191
Apple //c	138	59
Apple ///	22	20
Lisa or Mac XL	21	52
Mac or Mac Plus	505	325
Apple][compatible	34	10
IBM PC or compatible	54	261
IBM PC XT or compatible	55	277
IBM PC AT or compatible	13	22
Any type of Laptop	59	69
Minicomputer	18	292
Mainframe	13	290
Total computers used	1,697	2,156

The combined total of computers used is 3,853. Quite an interesting figure considering that of the 1,350 some ballots cast, over a hundred survey forms were not completed, either because of oversight, or the feeling that the forms were only to be completed by active members. Five hundred ninteen people who have Apple II-type computers have modems while only 335 Mac types have modems. Sixteen people have a Macintosh and an Apple][, 62 have a Mac and a][+, 49 have a Mac and a //e, and 15 have a Mac and a //c. Of the 505 Macintosh owners, 142 also have an older apple at home. I wonder if they are being used, or just kept around for old times sake?

Using 1,200 as a rough estimate of the number of questionnaires returned, almost 69% of us have modems at home, while only 40% use modems at work. Interestingly, these percentages are about the same as those for influencing the purchase of computer hardware and software at work. They are 71% for those who do, and 34.5% for those who do not. Speaking of work, almost 500 of us work for a city, state, or federal goverment agency. That's not surprising considering the area we live in.

What programs do we use with our almost 4,000 computers? As you probably know, the most popular uses of a computer are word processing, spreadsheets, and data managment. Here's a table of the top ten in each field:

Word Processor	Votes
Macwrite	329
AppleWorks	261
Microsoft Word	169
Applewriter	112
Wordstar	83
Screenwriter][	50
Word Perfect	20
Bank Street Writer	15
Format	10
Magic Window	10
Spreadsheet	**Votes**
AppleWorks	265
Excel	239
Multiplan	193
VisiCalc	112
Lotus 123	89
THE Spreadsheet	29
SuperCalc	24
Jazz	11
Symphony	8
Flashcalc	7
Database Manager	**Votes**
AppleWorks	266
dbase II & III	107
Microsoft File	59
PFS File	52
OverVue	50
Double Helix	35
Excel	33
DB Master	26
OMNIS 1, 2, & 3	20
Quickfile	20

How do the members perceive the WAP services? The Journal is the most visible of the Pi services, and 16% wanted to see more reviews, 35% wanted more how-to articles, and 58% thought "the current mix is about right". Here are some unsolicited quotes from the survey forms in no particular order:

1. We need more tutorials—for those of us who are not as sophisticated.

2. We get the news about special interest events after the fact.

contd.

3. Would like "help" when using the WAP office.

4. The meetings are too long, with SIG's added on. I would like to see the SIG's meet another day.

5. Comparisons of similar programs (e.g. file managers) would be a useful addition to the Journal.

6. Sorry I moved away... but I still enjoy the magazine.

7. My SigMac "new member disk - 1985" does not work on my Macintosh.

8. Is there a possibility of forming a chapter of the Pi in Baltimore?

9. The BB Systems are too complicated for the occasional user. Instead of 40 (or so) commands, 3 would be enough: (1) read it; (2) write it; (3) cancel it!

10. There should be tutorials during the summertime! Summertime is just the time of year people have more time to work with their computers.

11. I have no interest in Apple][s (or IBM PC's for that matter). They're both antiques.

12. A back to basics Journal article: Why do I have this machine, and what can I do with it?

13. Would like to know more (in simple understandable words) about how to expand the use of my Apple //e for financial management (small business) and educational uses beyond word processing.

14. I especially appreciate the hotline.

15. The listings in the journal do not really give a very clear idea of what the programs do.

16. Thank You!

17. Keep up the GOOD work!

18. Being 150+ miles from Bethesda makes it tough to get to a meeting. (But I still think this club is fantastic.)

19. Fantastic Club!

20. Would like more and better documentation of SigMac disks.

21. DO NOT like the idea of a theme for meetings. Would prefer a "mixed bag"—whatever comes up.

22. We need more tutorials for continuation after the initial one for beginners. (Macintosh owner)

23. Particularly interested in Apple instructional/game software for kids, public domain or otherwise.

24. I wish the Mac question and answer session could be reduced to an hour.

25. I asked for a Macintosh at work and have been cut out of all computer decisions at work since. It's IBM or nothing! What an enlightened choice!

26. Need good descriptive article for new modem owner on what's available and how to use it the first time. (Apple //e owner)

27. Need Macintosh articles grouped together in the Journal due to very limited reading time! (Ed Note: They are!)

Attendance at the monthly meetings is the next most visible event. Many of us are too busy or live too far away to attend. Here's a breakdown by the number of meetings attended.

Number of meetings	Attendees
6	53
5	63
4	71
3	104
2	139
1	160

Some of the other services WAP provides and the interest shown in them are: Group purchase, 47%; Public domain software, 45%; Tutorials, 23%; Telecommunications System, 20%; Hardcopy library, 20% ; Special Interest Groups (SIGs), 17%; Hot Line, 11%; How to become a volunteer, 9%; and Apple Teas, 6%.

I would like to thank those who took the time to respond to the questions, and especially those who helped me tally the results: Paula and Bernie Benson, Juliana Angle, Charlie Rider, Bob Wilbur, Nancy Little, Mac Nachlas, and my wife Dallas.

There are Pi members all over the world, as evidenced by postmarks from Maine to California, and France, England, Belgium, and Trinidad & Tobago. The range of involvement is readily apparent. There are some who are just getting started, the occasional user, and then there is the small core of individuals who just can't seem to get enough. There was one questionnaire that reported a][,][+, //e, //c, Macintosh, IBM PC, IBM XT, IBM AT at home, with a //e, //c, Macintosh, IBM PC, IBM XT, and an IBM AT at work. I wonder if this person is married?

ON THE TRAIL OF THE APPLE ///

by David Ottalini, /// SIG Co-Chairman

It's vacation time, ///rs, so this column is being but together a little earlier than normal (which will please the Urbans, at least!). However, I still have a lot of news to pass along, so let's get started.

Column Title

As you may have gathered, I've been trying out a new name for my column the past couple of months. I really didn't think "Apple /// News" was quite exciting enough, so I've tried a couple of variations on the "trail" theme. Being an "Old Westerner" from way-back and an enjoyer of Chez Roy's, I thought one of these two possibilities might do. I'd like your opinion. Should it be "On The Trail of the Apple ///" or "On The Apple /// Trail?" Or maybe you have something else to suggest. Let me know at the SIG meeting or over the BBS.

BBS

Speaking of the WAP Telecommunications System, our /// board has now been moved to number eleven. It's still very quiet, though, so let's start hearing from you! To help, one of our SIG members Jim Salerno (who is also our librarian) has donated a number of Anderson-Jacobson used 300 baud modems to the WAP for our /// members. There are a total of eight available at this writing. You can have one by simply going to the WAP office and paying ten dollars.

These modems are the coupler type...you have to put the handset of your telephone onto two rubber cups for it to operate. But they do work and come with full documentation. it's a great way to get started in telecommunications. There are literally thousands of BBS systems around the country, and as you know by having read my past columns, many excellent /// BBS systems as well.

3 EZP's/AppleWorks Project

My summer project has been to contact as many AppleWorks Template Vendors as possible to let them know about our own excellent version of this integrated program. Here are the names and addresses of those I was able to get ahold of over the past few weeks:

The Q-Mar Group, Box 11215, San Diego, CA 92111. 619-455-7513. These folks sell a large number of templates, including the FactWorks Encyclopedia disks I mentioned last month (which A+ says was "released" by ImagiMedia in Sepulveda, California). Other templates include Teacher's Tools, business, financial and graphics arts volumes, cooking templates and many more. Prices run in the $30-$60 range. They also publish the "AppleWorks Exclusive Reference" newsletter which they say is written by "professional authors." You get discounts on the templates by subscribing as well.

AppleWorks Super Grab Bag, Pete Petit, 1344 N. 31st. St., Milwaukee, WI 53208. 414-483-9056. As advertised, this is a grab-bag of templates that include taxes, home buying, college fund, camping lists and more. Cost is $12.00 plus $2.00 P/H. I had to leave a message on an answering device at the phone number above, so was unable to talk to Mr. Petit directly.

Practical Computer Applications, 2323 Tucker Court, Santa Rosa, CA 95401-2374. These folks got their ZIP+ number but have yet to list a phone number. All I can go by here is their advertisement which offers 19 Business Finance Files for $25.95 and 13 Personal Finance Files for $19.95. I will write them a letter after coming back from California.

By the way, while working on my /// Bibliography disk, I came across an explanation of how /// EZ Pieces and AppleWorks came to be. I can't vouch for the truthfulness of this, but it sounds reasonable. This comes from the July, 1984 edition of the Apple Three Newsletter of the Apple /// Users of Colorado group. The background information was attributed to Don Thompson, a guest speaker at the group's June meeting.

"The developers of /// EZ Pieces, Rupert (Lissner) and Williamson have an interesting story to tell. Williamson was using the Pascal editor as a word processor and decided that there had to be a better way. He had heard good things about Word Juggler and bought a copy only to feel he could write an even better software package. So he began work on a word processing package. At the same time, Rupert (Lissner) was writing a spread sheet program and happened to show it to Williamson. Why not put the two together? And so we have the beginnings of /// EZ Pieces.

Once it was completed, they took their package to Haba Systems. Steve Jobs was there, saw their product and was impressed. So impressed, in fact that he offered to buy the rights for the Apple // (but not for the /// of course!). Thus AppleWorks came to be."

I'm not really sure who "Williamson" was, since there is no indication of his name anywhere in the /// EZ Pieces documentation I received. In any case, suffice it to say that Rupert Lissner has upgraded AppleWorks and even has a mouse version coming out. Haba continues to sell /// EZ Pieces but has little interest beyond that. One member of MAUG on CompuServe, however, is working to disassemble the code to /// EZ Pieces so that it can be upgraded for the /// community. I think that's the way it will ultimately come back to us.

/// Convention

The Third Apple Users group in Wheaton, Illinois is actively working on a /// convention for next Fall. I get the feeling from reading their newsletter it's very likely the new //GS model will be given some time as well. If you are interested in helping or going, you should contact: Randall E. Jackson, Jackson Connor-Jackson, 1511 N. Bell, Chicago, IL 60622. They are going to need volunteers and input on what you'd like to see included. A number of /// vendors have reportedly already agreed to come and Apple may even show up (especially if the IIGS is included...).

Apple /// Update

Speaking of the Apple ///, this month and tell you we now have our donated /// in-house. It turned out that Apple decided to work through Sun Systems Recycling to make the

contd. on pg 26

MULTISCRIBE: Another View

by Tom Kroll

When I received my August WAP Journal and saw J.W. Willis' article, I just had to reply and put my two cents in.

Multiscribe is a fun word processor. You don't have to learn any special commands to use it. Just pop the disk into your computer and run with it. All the commands are in pull down windows that you access with a mouse or the keyboard. Open a window, cursor down to what you want and press return. Or, if you have a mouse, click on the window and drag down to what you want. Neat, simple and uncomplicated. And what you see is what you get. It's great for kids and your spouse if they are intimidated by control codes and 3-inch thick documentation manuals. If you can remember all the open-apple commands, you can key them in from the keyboard instead of pulling down a window. Styleware also includes a number of interesting fonts. I've been toying with the idea of writing a friend a letter and changing all the characters to the Michaelangelo font just to see what he'd say. (When was the last time you'd received a letter in hieroglyphics?)

But the fun ends there. If word processing of the future is going to be like this, I must agree with Lee Raesly to "Let my Apple II alone !". Let me explain—

Multiscribe is supposed to emulate the Mac, using windows and the hi-res screen to display your document and give you the ability to see what you're going to print out as you are typing, and that is all well and good. But it shouldn't be done with a 5 1/4 floppy disk and only 128k of memory. Multiscribe is heavily disk intensive. Just about everything you do with it must access the disk for one reason or another, and ya gotta keep side two of Multiscribe in the machine at all times so it can go back for instructions. Want to change fonts? Ya gotta wait for disk access to pull what you want off the disk. Want to load a file? The program first goes to side two of the master disk, and then you access your file disk (makes you crazy with only one drive). Even cut and paste is dependent on the disk. When you cut a piece from your document, Multiscribe saves it to the master disk. Paste it back someplace else, and Multiscribe takes it off the disk and puts it down for you. The bad part is you can't purge what you've cut. Once it is written to disk, it stays there until you cut something else. Then it erases what was in the ' buffer ' with the new stuff. What you cut two weeks ago is still on the disk when you boot it up again.

Printing a document is very time consuming with Multiscribe. Want a cup of coffee while you work but don't want to waste time? Just print a 3-page document in high quality mode using three fonts. You'll have made a pot and come back just as the printer is finishing up. Multiscribe has to stop printing to go back to the disk to pick up every font in your document as you print it. I have to admit that a letter with fancy type is nice to look at, but is it really worth the time?

Not to get too down on Multiscribe, there is an out. Styleware has removed the copy protection (three cheers for styleware) and has written the thing so it will access Ramworks and some of the other extended memory boards and load the whole program at once. This should reduce a lot of the time taken by disk access. And they've also included instructions with the latest version the load it onto a 3 1/2" floppy, so you don't have to flip the disk over to side two when you boot up. But if your budget won't go another couple'a hundred for these goodies (or your wife threatens you with bodily harm because you bought a new disk drive before a new washing machine) then ya gotta have patience.

Now I must tell you I've been using Simply Perfect for two years so you'll understand when I say that editing with Multiscribe leaves a lot to be desired. There are no commands to delete a word, sentence, or a paragraph with a few keystrokes. Everything you want to erase must be done using only the delete key or by using the open-apple and the right or left arrow key to highlight want you want to erase, and then pressing delete. And it gets time consuming watching the cursor highlight more than a few words that you want to delete. Neither are there any commands to move the cursor more than one space. Ya gotta lay on the arrow key and wait until the cursor moves to where you want it. You can move an approximate number of lines up or down, or to the beginning or end of your document, but not to the end of a sentence or a few words over with one or two keystrokes. Also, you can't type over anything that's on the screen. Multiscribe is constantly in "character insert mode", so you must type in what you want and then erase what you are changing with the delete key. If you write like I do and compose your document on the screen, that is a pain.

You also cannot format your document with headers or footers—there are none. Nor do you have the ability to set the top and bottom margins.

Personally, I disagree with Mr. Willis that Multiscribe may be the best program to come along for the Apple II in years. What you gain in ease of use, you lose in flexibility of editing your document, time in waiting for disk access, and time in printing your document using pictures for the alphabet instead of your printer's built in fonts. If hi-res pictures and ease of use are what you want using a sixty dollar word processor, then Multiscribe is for you. But if you want power and flexibility and hi-res pictures, maybe you should take a look at Gutenberg. It prints in 28 different languages and prints Hebrew from right to left! (See the Feb. 85 issue of the Journal.). If you write professionally, or if you want a powerful word processor, look at Word-Perfect (Dec. 85 Journal), Apple Writer, or maybe even the latest version of Mouse Write by Roger Wagner. It has windows and uses a mouse if you want, but it uses your printer's fonts and has a whole bunch of editing features plus print spooling if you use a ramcard. And don't overlook Simply Perfect. It may not be as flexible as the wp's I've mentioned above, but for $99 or so, you get ample power plus flexibility, and a database and spelling checker to boot (pick up any of the versions of Magic Calc and you have a cheaper AppleWorks)!

To sum up, Multiscribe is an easy and fun word processor that works like a Mac. No commands to learn if you don't want to, and easy setup 'out of the box'. But if you want something more than a 'Apple II Mac-alike', or you want a word processor that is powerful, consider some of the alternate choices. If you really want a Mac environment (which seems to have turned into a megabucks printer instead of a computer from Apple's ads) then take out a second mortgage and buy a Mac. But if Multiscribe's operation is a harbinger of Apple II word processors for the future, then I quote Lee Raesly again—"LEAVE MY APPLE II ALONE!!!!!".

Q & A
by Bruce F. Field

About six months ago I mentioned that Vertex Systems, Inc. in Los Angeles produced the "Turnover" DOS controller board for the IBM PC that allowed the PC to read and write diskettes in Apple DOS format. Between the time I researched the item and it appeared in print the company apparently went out of business. However, would I mention this again if I didn't have another solution? Dean Houser, VP of operations, at ASKY, Inc. called me to announce the availability of their new product, the "Envoy" board, which will sell for $180. This is a disk controller card that plugs into any slot in the Apple and up to four IBM type or other non-Apple disk drives can be plugged into the Envoy controller. It comes with software to convert ProDOS and DOS 3.3 files and save them in MS-DOS (IBM) format. The board supports different types of drives, 48 TPI and 96 TPI 5-1/4" drives and 135 TPI 3-1/2" drives. The one disadvantage of this solution is, if you want to convert Apple stuff to IBM, you must purchase an IBM compatible drive to connect to your Apple. But you can use the extra drive(s) directly with CP/M for additional storage of up to 3.2 Mbytes with 4 drives. ASKY doesn't sell the additional drives but they are available from other vendors for about $150. The Envoy board comes with a one year warranty. ASKY, Inc. can be reached on toll free numbers nationwide at 800-621-0854 or from touch tone phones at 800-228-5136 (at the dial tone press) * 1 5, and from California at 800-634-8245 (at the dial tone press) * 1 5, or in the 408 area code, 247-5742. If all that is confusing their address is 4320 Stevens Creek Blvd., Suite 287, San Jose, CA 95129.

Murphy Sewall and Wilton Helm wrote with additional information on setting the //c serial port. The original question was how to set up the //c port for an odd-ball printer that required 7 data bits. The problem is that the port settings default to values stored in the auxiliary memory every time you do a PR#1. The solution is to change the default values. Murphy kindly supplied a program to do this.

```
100 REM SET A, B, C, D HERE
110 AD = 0 : REM FOR PORT 2 SET AD = 4
120 POKE 49153, 0 : REM STOREON
130 POKE 49237,0 : REM SELECT AUXILIARY
    MEMORY
140 POKE 1144 + AD, 62 : REM 7 DATA BITS, 1
    STOP BIT, 9600 BAUD
150 POKE 1145 + AD, 255 : REM SPACE PARITY
160 POKE 1146 + AD, 64 : REM INSERT CR
    AFTER LF
170 POKE 1147 + AD, 132 : REM INSERT CR
    AFTER 132 CHARACTERS
180 POKE 49236,0 : REM SELECT MAIN MEMORY
```

If you want to set the port to other settings Murphy suggests first setting the port to the desired values and then running the following program.

```
10 AD = 0 : REM FOR PORT 2 SET AD = 4
20 POKE 49153,0 : REM STOREON
30 POKE 49237,0: REM SELECT AUXILIARY
    MEMORY
40 A = PEEK(1144 + AD)
50 B = PEEK(1145 + AD)
60 C = PEEK(1146 + AD)
70 D = PEEK(1147 + AD)
80 POKE 49236,0 : REM SELECT MAIN MEMORY
90 PRINT A, B, C, D
```

Once you have these four values for the setup you desire modify the first program to POKE the correct values. Murphy adds that the POKE program need only be run once after the //c is turned on. It will sustain the correct port settings through ctrl-Open Apple-Reset and PR#6 warm boots. Hence, it also works with copy protected program as well.

If anyone with a //c out there (I'm a //e person myself) would like to pass along values for other settings I will be more than happy to print them.

Charles McConathy of CMC Computer Systems wrote to take exception to my recent opinion on hard drives. The question was whether the reader should get a 3.5 Unidisk or a hard disk. My opinion was that most hard disks for the Apple don't really have a convenient method for making backup copies (the B-Sider may be the exception if you have a spare $700 just to be able to make backups) and when a hard disk (or any disk) fails you will want a backup of it.

Mr. McConathy says, "We developed and market CMC Hard Drives for the Apple II Computer that are compatible with ProDOS and/or DOS 3.3, or with NovoComp Hard Disk Utility ProDOS, DOS 3.3, CP/M, and Pascal partitions. Under ProDOS we furnish ProSEL, a menu selector by Glen Bredon, that has "Backup", "Restore" and "Recover" utilities that are fast and easy to use. ... I think this comment (about hard disks failing) scares a lot of people about hard drives and they keep using boring floppy drives in fear. I myself would hate to go back to loading spreadsheets that take over 1-1/2 minutes. Hard drives are great! Pick one with a good track record and one that uses proven components and expect years of trouble free use with proper care."

I would never deny that if you need quick access to a lot of data, a hard disk is the way to go. But I stand by my original opinion for the average home user.

CMC Computer Systems can be reached at 1514 East Edinger #H, Santa Ana, CA 92705, phone (714) 835-2462, Compuserve 76011,646.

Chris Arndt passed along a suggestion regarding the problem with extraneous carriage returns in files uploaded to an Apple from a Radio Shack Model 100. The problem was after uploading files from the "100" every line ended in a carriage return and the reader wanted to know how to get Apple Writer to remove the carriage returns. Chris replies:

"The model 100 text editor works much the same as Apple Writer during text entry, in that it wraps words at the end of each line. As in Apple Writer, carriage returns are only needed to end paragraphs, or for other formatting purposes. However, when using the Telcom program to transfer programs, after pressing the "upload" function key, and answering the "File to

contd.

upload?" prompt, a "width?" prompt appears. If this is answered with a number (such as 80), the program will, with word wrap, send up to 80 characters, and at the end of the last word, send a carriage return. This is most likely the source of the unwanted carriage returns. However, if the "width?" prompt is answered only with a carriage return (no number), then the program will send the text, just as it was entered, with no added carriage returns."

Q. I recently upgraded from a][+ to a //e and am using a Prometheus ProModem 1200 and an Apricorn Serial card. The problem is, now that I am using the modem in my //e I can't use 1200 baud without losing characters on my screen. It appears to happen only when the screen routine attempts to scroll the data up one or more lines. I am not having a problem with losing characters when I start at the HOME position and don't force the screen to scroll, but do as soon as it has to scroll. I have temporarily gotten past this problem by setting the serial card to transmit at 300 baud only, but this means that I can't use my modem at 1200 baud.

A. The problem is with the 80-column firmware in the Apple //e. It simply takes too much time to scroll the screen and characters are lost while this happens. The solution is to use a communications program that doesn't use the Apple firmware but instead uses its own, faster, program to write to the screen. ASCII Express Professional is one such program that can be used successfully at 1200 baud. I have been warned however that if you have an enhanced //e you should NOT select the //e option in the setup menu. Instead select item 0 - automatic; otherwise AE Pro will not work properly with the enhanced //e.

Another possible solution is to have the bulletin board at the other end of the line send a series of null characters after every line feed. Most bulletin boards have this capability. This will give the Apple time to scroll the screen and the lost characters will be unimportant. You will have to experiment a little bit to find the proper number of nulls that need to be sent.

Q. I recently purchased a 3.5 Unidisk for my Apple //e. Shortly after I bought it, a friend told me that there is a problem with the controller card, and if you accidentally write on a write-protected disk, some data may be lost. He also gave me a program written by the Washington Apple Pi group which allows you to check your controller card to see if it has the bug. I tried the program, and sure enough, my brand new card had the bug. I also tried writing on a write-protected disk, and produced weird results. After trying to save a file to a protected disk, all the blocks were used up with the protect on, and after it was removed, 1 block was added somewhere. In another test, my friend wiped out over 300 blocks, yet the directory looked as though everything was ok.

A. The problem is that the 3.5 drive does not return the write protect status to ProDOS. The diskette is actually protected and is not written to despite the fact that ProDOS thinks it was. If you stopped here, turned your Apple off and rebooted you would find your original disk intact, less the last thing you tried to save when it was protected. The solution if you have written to a protected disk is to immediately remove that disk, insert an unprotected scratch disk, and save your file to that. Turn your Apple off, reboot ProDOS, load in the file you saved on the scratch disk, and save it to the now unprotected original disk.

The program you refer to is called STATUS CHECKER and is available from Washington Apple Pi and is also on Compuserve. Tom Vier, who wrote the program, reports that Apple is supposed to have a new version of the disk drive just about ready that solves this problem. At this time they have made no announcement about what they will do with existing drives.

Tom has another tip to pass along. The Unidisk connecter from the controller card looks similar to the familiar DB-25 connectors used for connection of RS-232 serial devices to the Apple. Users may be lulled into thinking that because it is okay to plug and unplug RS-232 devices while the power to the Apple is on, it is okay to plug and unplug the disk from this connecter while power is on. THIS IS NOT SO. DO NOT plug or unplug the Unidisk while the Apple power is on—you may damage the Unidisk, the Apple or both.

Q. I own an Apple //e that is now three and one-half years old. Over a year ago I purchased a fan/surge protector. Everything had been working well until about two weeks ago. The machine suddenly died. On investigation, I found the power-on light was not going on; I tested the power supply and found it dead. After a little backing and forthing with the technician at the computer dealer, we determined that the power supply was working intermittently and I replaced it.

While discussing all this with the technician he suggested that the failure could be attributed to the fan/surge protector. He stated that during the time the fan takes to come up to speed on power-up, evil levels of voltage are passed on to the power supply causing it sooner or later to fail. His explanation seems unlikely to me. What do you think?

A. HOGWASH! That fan has about as much effect on the line voltage as a mouse pushing an elephant. This does bring to mind a fix suggested by Tom Vier. A lot of the time the thing that fails in the power supply is a $2 capacitor. Apple dealers will kindly replace the entire power supply for (and at great expense to) you. If you are handy with a soldering iron you might save at least $50 by replacing the capacitor yourself. Tom Vier posted the following fix on the Washington Apple Pi bulletin board system.

1. Pop the lid off your Apple and set it aside.
2. Remove your peripheral cards and unplug the power supply from the motherboard.
3. Turn the Apple up on its side with the power supply up.
4. Use a Phillips screwdriver to unfasten the four screws holding the power supply and remove the supply.
5. Pop the two rivets and remove the cover of the power supply.
6. Locate and remove capacitor C7, a 220 uF 10 V

contd. on pg 26

THE FAMILY HOME MONEY MANAGER: Part 6

Working One's Way Through an Applesoft Program

by Brian G. Mason

We are ready this month to start on a whole new module in our budget program. So far we have finished the program module called BUDGET, the one called BUDGET 1/85, and the one called ENTER DATA.

This module we will call CHECKS 1/85. (You can call them anything you like, of course; you will just have to adjust the program accordingly.)

```
  0 IF Q% < 14 THEN  ON Q% GOTO 1500,1500,
    2800,1500,1500,1500,15 00,1500,1500,1500,
    3300,3400,3600
  1 ON QN% GOTO 1500,1500,1500,3700,4000,
    1500,1500,1500
```

Depending on the value of Q% or QN% which we established from the Main Menu in our ENTER DATA program, we are sent to the various parts of the program. If the value is not relevant to this module, we just insert line 1500, where we send the program back to the "ENTER DATA" module.

```
1500  POKE 34,0: HOME : PRINT  TAB(9)
      "HOME MONEY MANAGER": PRINT
1501  VTAB 18: INVERSE : PRINT "PLEASE
      WAIT": NORMAL
1502  GOSUB 10060: CALL H2"ENTER DATA"
10060 POKE 60,LN + 8: POKE 61,HN
10070 POKE 62,LO: POKE 63,HO
10080 POKE 66,8: POKE 67,2
10090 RETURN
```

Now that we have a little of the nitty-gritty out of the way, let us go to one of the options handled by this module. The first one we will deal with is the option to sort our data. This is #3 on the Main Menu, so Q% is equal to three, and we are sent by line 0 to line 2800.

SORTING

```
2800  HOME : INVERSE : HTAB (15): PRINT
      "SORT DATA": NORMAL : PRINT :
      POKE 34,1
2802  IF NS =  - 1 THEN 152
 152  VTAB 24: FLASH : PRINT "NO DATA IN
      MEMORY": POKE 216,0: FOR C = 1
      TO 1000: NEXT C: NORMAL : GOTO 1500
2805  VTAB 5: PRINT "YOU MAY SORT ON
      ONE OF THE FOLLOWING:"
2807  POKE 32,5: PRINT
2810  PRINT "1.  CHECK #": PRINT "2.
      DATE": PRINT "3. 'TO/FROM' FIELD":
      PRINT "4.  AMOUNT": PRINT "5.  CODE"
2812  POKE 32,0: GOSUB 27
  27  PRINT : INPUT "WHICH?";C$: RETURN
```

The first thing we do is put the name of the option we have selected at the top of the screen and protect it from scrolling. Next, we see if we have any data. If we don't (NS = -1) then there is nothing to sort, so we flash a message on the screen and then return to the Main Menu. In line 2807 we see a quick and easy way to handle indenting—just set the left window in the number of spaces you want to indent. Then PRINT statements will go no further to the left than the edge of that window. Line 2812 sets everything back to normal again.

```
2815  ST =  VAL (C$): IF ST < 1 OR ST > 5
      THEN 2812
2820  PRINT "<A> ASCENDING, OR <D>
      DESCENDING": GOSUB 27
2825  IF C$ = "A" THEN Q = 1: GOTO 2830
2827  IF C$ = "D" THEN Q = 0: GOTO 2830
2828  GOTO 2820
2830  L% = 23: GOSUB 45
  45  VTAB 22: HTAB 1: CALL  - 958: PRINT :
      INVERSE : PRINT "WAIT!";: NORMAL :
      HTAB 1: VTAB L%: RETURN
```

I'm afraid there are several times we will need the subroutine in line 45. The following sort routine is not that slow, however. It is based on the idea of taking the group of items to be sorted and dividing them into groups. Then the first item of the first group is compared with the first item of the second group and they are swapped if they are out of order. Next the second item of the first group is compared with the second item of the second group, etc. If we have 50 records to sort, then NS equals 49 (since for record #1, NS = 0).

```
2832  Z = 1
2833  Z = 3 * Z + 1: IF Z < NS + 1 THEN 2833
2835  Z = (Z - 1) / 3: IF Z < 1 THEN 2992
2840  FOR J = Z TO NS:J1 = J - Z
2845  II = J1 + Z: ON ST GOTO
      2850,2875,2900,2925,2950
2850  IF Q = (CN%(J1) > CN%(H)) THEN 2980
2855  GOTO 2991
2875  IF Q = ((100 * MO%(J1) + DT%(J1)) >
      (100 * MO%(H) + DT%(H))) THEN 2980
2880  GOTO 2991
2900  IF Q = (VEN$(J1) > VEN$(H)) THEN 2980
2905  GOTO 2991
2925  IF Q = (AMT(J1) > AMT(H)) THEN 2980
2930  GOTO 2991
2950  IF Q = (CT%(J1) > CT%(H)) THEN 2980
2955  GOTO 2991
2980  VTAB L%: HTAB 1: CALL  - 868:
      PRINT "SWAPPING RECORD ";J1;"
      WITH ";H;
2985  D1% = CN%(J1):CN%(J1) = CN%(H):
      CN%(H) = D1%
2986  D1% = MO%(J1):MO%(J1) = MO%(H):
      MO%(H) = D1%
2987  D1% = DT%(J1):DT%(J1) = DT%(H):
      DT%(H) = D1%
2988  E$ = VEN$(J1):VEN$(J1) = VEN$(H):
      VEN$(H) = E$
2989  D1 = AMT(J1):AMT(J1) = AMT(H):
      AMT(H) = D1:D1% = CT%(J1): CT%(J1) =
```

contd.

```
CT%(H):CT%(H) = D1%:D1 = R(J1):
R(J1) = R(H):R(H) = D1
2990 J1 = J1 - Z: IF J1 > = 0 THEN 2845
2991 NEXT J: GOTO 2835
2992 FLASH : HTAB 17: PRINT : PRINT
"DONE!": FOR X = 1 TO 1000: NEXT X:
NORMAL
2995 SS = 0: GOTO 1500
```

Line 2833 calculates Z until it is equal to 121 like so:

Z = 3 * 1 + 1 = 4
Z = 3 * 4 + 1 = 13
Z = 3 * 13 + 1 = 40
Z = 3 * 40 + 1 = 121

Since Z is no longer less than NS + 1, the program continues to line 2835 where Z is set equal to 40:

Z = (121 - 1) / 3

If there were only one record, "IF Z < 1 THEN 2992" would send the program to the concluding statement indicating that the sorting was completed. (Can you see how this works?)

Now in line 2840 we start with record #40 in a FOR - NEXT loop which will end when we get to the last record (NS). And we set J1 equal to the difference between the record being examined and the first record of this group. When we start, J is equal to 40 and so is Z, so J1 is equal to 0. The next time around, J will be equal to 41, so J1 will be equal to 1, etc. H, however, is equal to the sum of J1 and Z. So when we look at record #40, H is equal to 40; when we look at record #41, H is equal to 41, etc.

ST is the variable that has been set to the field on which we wish to sort. If we are sorting by check no., we GOTO line 2850, if by date, to line 2875, if by vendor, to line 2900, if by amount, to line 2925, and if by budget category, to line 2950. In each one of these lines we are using Boolean equations to determine whether the list will be sorted in ascending order (Q = 1) or descending order (Q = 0). For example, in line 2850, starting inside the parentheses, if the check no. of record #0 is greater than the check no. of record #40, then the statement is true. This makes it have the value of 1 as far as the computer is concerned. If you were simply to type at the Applesoft prompt (with the values to the variables established) "PRINT (CN%(0) > CN%(40))", the computer would respond by printing a 1. Now if we are trying to sort our check numbers in ascending order, then we consequently have the equation, 1 = 1, which is true, so the program will go to line 2980. If record #0 was smaller than the check number at record #40, then we would have a false statement in this case, so the program would go to line 2991.

Looking at line 2980, we see that first of all we are letting the user know what is going on so they don't think their computer is just sitting there doing nothing. Then to perform the swap, we use temporary variables D1%, D1, and E$, depending on the type of variable we are swapping. For example, if we are going to have check #105 and check #102 change places so they appear in the opposite order from which they appear now, we set variable D1% equal to 105, which is the value of CN%(J1) in our example. Then we move the value of CN%(H) into CN%(J1). And finally, we move the value, 105, which we stored in D1% into CN%(H). And we do that for each field of our data.

Now we subtract Z from J1; in our example, we subtract 40 from 0, which of course is less than zero, so we go to the next line where we take the next J. Remember, this makes J1 equal to 1 because of line 2840, and it makes H equal to 41 because of line 2845. Also remember that J is in a FOR-NEXT loop from 40 to NS, or 49. When J equals 49, J1 will equal 9 and subtracting Z from J1 will still yield -31. Again we are taken by this test in line 2990 to line 2991, but this time we fall out of the FOR-NEXT loop, and return to line 2835.

This line sets Z equal to 13. (Z = (40 - 1) / 3). So next we take the records from 13 to 49 and sort them. Only this time, as J increments in value, J1 starts out equal to 13 - 13, and works its way towards 49 - 13. H starts out equal to 0 + 13 and works its way towards 36 + 13. In line 2990, the test for the value of J1 works its way from 0 - 13 to 36 - 13. (Do you see this?)

However, as soon as J1 equals 13, that is, as soon as J equals 26, then the test in line 2990 succeeds, and we go to line 2845 where we change the value of H and leave the value of J alone. In line 2990 we set J1 equal to 13 - 13, so H becomes 0 + 13, and these two are compared. If the comparison does not succeed, we go to line 2991 and get the next J. If the comparison succeeds, then the records are sorted and we get to line 2990. Here, J1 will equal 0 - 13, and we fall through again to line 2991 and get the next J which is 27. J1 becomes 27 - 13, H becomes 14 + 13, and these two are compared. At line 2990, J1 becomes 14 - 13 and again we go to line 2845 where H becomes 1 + 13. This continues until we get to J equal to 49. This takes us from line 2991 back once more to line 2835 where Z is set equal to 4, and we go through the whole process again. The next time Z will be equal to 1 and the file is examined one more time to make sure there is nothing left out of order. The next time Z will be less than 1, which means our sort is complete.

So, to summarize, the program is taking the items to be sorted and first of all comparing those items that are 40 items apart and swapping them if they are in the wrong order. Then the program compares those items that are 13 items apart and swaps them if they are out of order. Then items that are 4 items apart and then items that are right next to each other.

If you really want to understand how this works, you might want to try this sort procedure with a stack of index cards labeled from A to Z and then shuffled. You could then see the sort taking place as you work through the logic step by step until all your cards are in order. Believe me, it is certainly a lot faster method of sorting than simply finding the smallest item and putting it in record #1, finding the next smallest item and putting it in record #2, etc., which is the way the sort was done in Softside's "Developing Data Base", one of the programs I used as a learning model for this program.

The last thing we do is to set SS equal to 0 to flag the fact that we need to save our data at some point.

BALANCING THE CHECKBOOK

For a short routine, sorting sure was complicated to explain. The next option, #11, CHECKBOOK BALANCE, hopefully will not be that complicated.

```
3300 HOME : VTAB 23:CH = 1:BU = 0
3302 IF NS = - 1 THEN 152
```

contd.

```
3305 INPUT "ENTER THE CHECK NUMBER
     YOU WOULD LIKE TOSTART WITH - ";S1
3307 PRINT : PRINT "ENTER CHECKBOOK
     BALANCE BEFORE CHECK # ";S1;:
     INPUT " WAS WRITTEN - ";BAL
3310 HOME : INVERSE : HTAB (11): PRINT
     "CHECKBOOK BALANCE": NORMAL :
     GOSUB 170:B =  - 1
 170 GOSUB 40: VTAB 2: HTAB 28: PRINT "
     AMT   BALANCE";: RETURN
  40 VTAB 2: PRINT " # CHK# MO/DA
     TO/FROM WHOM" TAB( 30)"AMOUNT
     CAT"
  41 PRINT : POKE 34,3:L% = 4: RETURN
3315 PRINT "STARTING BALANCE----------";:
     T% = 37:C = BAL: GOSUB 70
  70 IF C < 0 THEN SG =  - 1
  71 IF SG =  - 1 THEN  INVERSE :C =  A
     BS (C): GOSUB 72: RETURN
  72 X = C:C =  INT (C): GOSUB 50
  50 POKE 36,T% - 1: 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 A: IF SG =  - 1 THEN  INVERSE :
     IF PR THEN  PRINT "-";
  53 PRINT C;: RETURN
  75 T$ = "." +  RIGHT$ ( STR$ ( INT ((X +
     1.0001) * 100)),2)
  77 PRINT T$;
  78 NORMAL :T$ =  STR$ (C) + T$:C =
     VAL (T$) * SG:SG = 1: RETURN
3316 L% = 4
```

OK, first we clear the screen, then move down to the bottom where we have been printing our messages to the user. We set our flags to indicate that we are working with checks, not the budget listing, and then we make sure there is data to list. Then we print two questions. First, what is the check number in the checkbook that you want to start with. This number goes in the variable, S1. Next, we need to know the checkbook balance before that check was written. That figure goes into the variable, BAL.

Once we have that information, we clear the screen again, and print the title at the top of the screen as well as the column heads, modified slightly for purposes of this part of the program.

Since we are going to number the item numbers again, we use B (again) as our variable to handle that job. Next we print the starting balance which we entered a couple of seconds ago, put in the format of having two decimal places by the subroutine at line 70.

```
3317 D1% = 1: FOR R = 0 TO NS: IF CN%(R)
     > D1% THEN D1% = CN%(R)
3318 NEXT R
3319 IF S1 > D1% THEN 3500
3500 VTAB 22: CALL  - 958: PRINT "THAT'S
     ALL THE CHECKS IN MEMORY":
     GOSUB 28: GOTO 1500
  28 VTAB 23: CALL  - 958: PRINT "HIT ANY
     KEY TO CONTINUE": GET CS:
     GOSUB 26: HOME : RETURN
  26 VTAB 24: HTAB 1: CALL  - 958:
     VTAB L%: HTAB T%: RETURN
```

The first thing we are going to do is figure out what is the highest check number in the data base equal to or greater than one. Then we check to see if the check number we asked for is greater than that highest check number. If it is, we GOTO line 3500 where we print out the message that indicates that there are no checks in the data base with a number that high. Line 3500 then returns us to the Main Menu.

```
3320 FOR R = 0 TO NS
3325 IF CN%(R) = S1 THEN  GOSUB 20:
     GOSUB 180: GOSUB 16:C = AMT(R):
     T% = 28: GOSUB 70: GOTO 3342
  20 VTAB 19: CALL  - 958: PRINT "TYPE
     <M> TO RETURN TO THE MENU,
     <RETURN>TO CONTINUE";: GOSUB 27:
     IF C$ = "M" THEN  POP : GOTO 1500
  21 VTAB L%: RETURN
 180 HTAB 1: GOSUB 162
 162 B = B + 1: IF B + 1 < 10 THEN  PRINT " ";
 163 PRINT B + 1;".";: RETURN
 181 C = CN%(R):T% = 7: GOSUB 50
 182 C = MO%(R):T% = 10: GOSUB 50:
     PRINT "/";
 183 C = DT%(R):T% = 13: GOSUB 50
 184 HTAB 15: PRINT VEN$(R);
 185 RETURN
  16 IF  LEFT$ (VEN$(R),1) = "#" THEN
     SG =  - 1
  17 RETURN
```

We use a lot of subroutines here to accomplish what we need to have done. We start at the beginning of our data base and loop through it with a FOR...NEXT loop looking for one with a check number equal to S1. Once we find one, we GOSUB line 20 where we give the user the choice of continuing or going back to the Main Menu.

GETTING OUT IN THE MIDDLE

It is very important when you write a BASIC program to keep track of your loops and your subroutines. Every GOSUB needs a RETURN; every FOR needs a NEXT. If you are in the middle of a subroutine, and instead of RETURNing, you decide to go somewhere else in the program, you must do a POP to get rid of the need for a RETURN to follow the GOSUB you are in the midst of. In other words, POP is like RETURN, except it does not branch you to another part of the program.

The subroutine at line 20 forces us to leave the FOR...NEXT loop incorrectly. As we have seen, the correct way to leave a FOR...NEXT loop early is to set the variable to the highest value and then call it one more time. For example:

```
10 FOR X = 1 TO 10
20 IF Y IS TRUE THEN X = 10: NEXT X:
   GOTO 50
30 PRINT X
40 NEXT X
50 END
```

If the user chooses to return to the Main Menu at this point in the program, we should probably set R equal to NS

contd.

and call for the NEXT R before POPping and going to line 1500. However, I think there are other occasions when we use this subroutine at line 20 when we are not in the middle of a FOR...NEXT loop involving R, so we leave the FOR...NEXT loop incorrectly here. I do not know if the next time we execute a FOR...NEXT loop involving R we solve the problem or not. Perhaps another WAP member can shed some light on the question.

Anyway, if we choose to continue rather than returning to the Main Menu, we are taken to the subroutine at line 180. This subroutine prints out the item number, the check number, the month, the day, and the vendor before returning us line 3325. We have seen this all before in our ENTER DATA program module.

Then the amount is printed, and we jump to line 3342.

```
3342 BAL = BAL - C:C = BAL:T% = 37:
     GOSUB 70
3345 L% = L% + 1: IF L% < 18 THEN 3330
3346 POKE 35,17: CALL - 922:
     POKE 35,24:L% = 17
3350 GOTO 3330
```

Here we subtract the amount of the check from the balance and then print out that amount. Very simple. Next we increment the line number. If we have not gotten to line 18 yet, we return to line 3330. Otherwise, we set the bottom of the scrolling window, issue a line feed, reset the bottom of the window, reset L% back to 17 and then return to 3330.

```
3330 GOSUB 45: NEXT R:S1
     = S1 + 1: IF S1 < =
     D1% THEN GOTO 3320
3335 GOTO 3500
```

We would go to line 3330 if we did not find a check number which matched S1. We come to this line if we do find a match and after we have printed it out. Line 3330 prints the message to "wait" via line 45 and then calls for the next record in the data base.

Once we have gone through the entire data base, we increment S1 by one and then search for that check number in the data base. We keep doing that until S1 is no longer less than or equal to the largest check number in the data base, which we had determined at line 3317. Once we have reached that point, we are taken to line 3500 and then back to the Main Menu.

Well, we can sort our data now, and we can go through our checkbook and see what our balance is. That's enough for this month. Next month we will see how we will reconcile the checkbook to the bank statement and then how to delete the reconciled records from our data base. Save what you have done this month by typing "SAVE CHECKS 1/85".

SPACE-TIME EVALUATION OF HI-RES LINE ADDRESS ALGORITHMS

by Rick Chapman

In order to access the Apple hi-res screen from a machine language program one must have an algorithm for calculating the exact memory location that corresponds to a particular pixel on the screen. Numerous algorithms have been used over the years in articles published here and in other magazines. These algorithms range from the compact, but slow algorithm used in Applesoft to the fast, but memory-intensive technique of using lookup tables. This article discusses several of these algorithms in terms of their memory requirements (space) and execution speed (time).

Background

The typical code used to plot a point on the Apple's screen looks like:

```
LDA   HCOLOR1
EOR   (GABSL),Y
AND   HMASK
EOR   (GBASL),Y
STA   (GBASL),Y
RTS
```

This subroutine assumes that the zero-page locations HCOLOR1, GBASL and HMASK, along with the Y-register have been properly initialized upon entry. Together these locations are referred to as the internal cursor. HCOLOR1 must contain a color mask properly shifted for odd or even bytes. GBASL and GBASH contain the address of the first byte in the line corresponding to the vertical coordinate of the point to be plotted. HMASK is a bit mask where just the bit to be plotted and the hi-bit are set. The Y-register then contains the horizontal coordinate of the point divided by seven (and thus represents the relative byte in the line.) HCOLOR1 and HMASK can easily be calculated from a lookup table (the scheme that Applesoft uses internally.) The Y-register is calculated by dividing the horizontal coordinate by seven. The real trick is figuring out where the beginning of the line is. The mapping scheme for the screen is anything but simple.

In fact there are many cases where only GBASL and GBASH need to be calculated. For example, hi-res character generators, screen scrollers and movers, and graphics dump routines typically work with entire bytes and lines at a time so the line address calculation may be the only calculation required out of the complete group specifying the internal cursor.

Algorithms

The rest of this article describes several alternative algorithms for computing the beginning line address, GBASL and GBASH, given a graphics line number from 0 to 191. Both the memory size and cycle times (1 cycle = 0.978 microseconds for the standard Apple II) are listed for each algorithm.

In order to standardize the comparison certain conventions were adopted in the design of the sample routines. It is assumed that the line number is in the accumulator upon entry to each routine and the location HPAG contains a $20 if accessing page 1 or a $40 when accessing page 2. None of the routines shown use the Y-register since this is where the byte count within the line is usually stored. In some cases these routines could be improved by making use of the Y-register but this improvement would probably come at the expense of the calling program. Some of the routines could also be shortened slightly thru the use of PHA and PLA, but these were not used since the decrease in size is accompanied by a more than comparable increase in execution time.

1. Full table lookup

In recent years there have been numerous articles and books written on doing animation on the Apple's hi-res screen. In order that the animation be smooth a premium is placed on making the routines run as quickly as possible. For this reason a table lookup scheme is almost always used to calculate the line address. This scheme requires two tables, one for the lo-order bytes and one for the hi-order bytes. These tables take up 192 bytes each. The typical algorithm is shown below along with the first few bytes of each of the two tables. Note that this scheme would run 10% faster if the line number was assumed to be in the X-register.

Fastest table lookup

	bytes	cycles
TAX	1	2
LDA YTABLH,X	3	4
ORA HPAG	2	3
STA GBASH	2	3
LDA YTABLL,X	3	4
STA GBASL	2	3
	13	19
TABLES (192*2)	384	_
	397	19

```
YTABLL  DFB   $00,$00,$00,$00,$00,$00,$00,$00
        DFB   $80,$80,$80,$80,$80,$80,$80,$80
        DFB   $00,$00,$00,$00,$00,$00,$00,$00
        DFB   $80,$80,$80,$80,$80,$80,$80,$80
        DFB   $00,$00,$00,$00,$00,$00,$00,$00
        DFB   $80,$80,$80,$80,$80,$80,$80,$80
        DFB   $00,$00,$00,$00,$00,$00,$00,$00
        DFB   $80,$80,$80,$80,$80,$80,$80,$80
        DFB   $28,$28,$28,$28,$28,$28,$28,$28
        DFB   $A8,$A8,$A8,$A8,$A8,$A8,$A8,$A8
        ...
YTBALH  DFB   $20,$24,$28,$2C,$30,$34,$38,$3C
        DFB   $20,$24,$28,$2C,$30,$34,$38,$3C
        DFB   $21,$25,$29,$2D,$31,$35,$39,$3D
        DFB   $21,$25,$29,$2D,$31,$35,$39,$3D
        DFB   $22,$26,$2A,$2E,$32,$36,$3A,$3E
        DFB   $22,$26,$2A,$2E,$32,$36,$3A,$3E
        ...
```

2. Condensed lo-byte table

Noting the symmetry in the lo-byte table, we can easily cut down the memory usage by using a condensed version of the table. The idea is to divide the line number by eight

contd.

before accessing the lo-byte table and including only every eighth byte in the table. This eliminates much of the duplication existing in the table, thus cutting memory usage. The price we pay is slower execution (31 cycles vs. 19 cycles).

Condensed lo-byte, standard hi-byte table lookup

```
        STA  GBASH          2     3    ;save temporarily
        LSR                 1     2    ;Divide by 8
        LSR                 1     2
        LSR                 1     2
        TAX                 1     2
        LDA  YTABLL,X       3     4    ;Get lo byte
        STA  GBASL          2     3
        LDX  GBASH          2     3    ;Restore line #
        LDA  YTABLH,X       3     4    ;Get hi byte
        ORA  HPAG           2     3
        STA  GBASH          2     3
                           20    31
TABLES (24+192)           216     -
                          236    31
YTABLL  DFB   $00,$80,$00,$80,$00,$80,$00,$80
        DFB   $28,$A8,$28,$A8,$28,$A8,$28,$A8
        DFB   $50,$D0,$50,$D0,$50,$D0,$50,$D0
YTBALH  DFB   $20,$24,$28,$2C,$30,$34,$38,$3C
        DFB   $20,$24,$28,$2C,$30,$34,$38,$3C
        DFB   $21,$25,$29,$2D,$31,$35,$39,$3D
        DFB   $21,$25,$29,$2D,$31,$35,$39,$3D
        DFB   $22,$26,$2A,$2E,$32,$36,$3A,$3E
        DFB   $22,$26,$2A,$2E,$32,$36,$3A,$3E
        ...
```

3. Condensed lo-byte and hi-byte table lookup

The next thing to try is to compress the hi-byte table also. The hi-byte table is not as simple to compress as the lo-byte table, but by noting that every other line of 8 bytes is duplicated we can deduce an appropriate compression scheme. The trick is to divide the hi-order nibble of the line number by 2 and add it to the lo-order 3 bits of the same line number. Thus lines 0-7 and lines 8-15 would both index into the first 8 bytes of the table; lines 16-23 and lines 24-31 would both index into the second 8 bytes of the table; and so on. This algorithm will again decrease the required memory usage while increasing the execution time as compared to the previous algorithm.

Condensed lo-byte and hi-byte table lookup

```
        STA  GABSL          2     3    ;Save temp
        AND  #$F0           2     2    ;Use upr nibble
        LSR                 1     2    ;Divide by 2
        STA  GBASH          2     3    ;Save result
        LDA  GBASL          2     3    ;Restore line #
        AND  #$07           2     2    ;Get low 3 bits
        ORA  GBASH          2     3    ;Add upr 4 bits
        TAX                 1     2
        LDA  YTABLH,X       3     4    ;Get hi order
        ORA  HPAG           2     3
        STA  GBASH          2     3
        LDA  GBASL          2     3    ;Restore line #
        LSR                 1     2
        LSR                 1     2
        LSR                 1     2
        TAX                 1     2
        LDA  YTABLL,X       3     4
        STA  GBASL          2     3
                           32    48
TABLES (24+96)            120     -
                          152    48
YTABLL  DFB   $00,$80,$00,$80,$00,$80,$00,$80
        DFB   $28,$A8,$28,$A8,$28,$A8,$28,$A8
        DFB   $50,$D0,$50,$D0,$50,$D0,$50,$D0
YTBALH  DFB   $20,$24,$28,$2C,$30,$34,$38,$3C
        DFB   $21,$25,$29,$2D,$31,$35,$39,$3D
        DFB   $22,$26,$2A,$2E,$32,$36,$3A,$3E
```

4. Calculated lo- and hi-bytes

The authors of the Applesoft graphics routines used a clever calculation scheme to avoid the use of lookup tables altogether. This scheme is based on some serious bit twiddling and while I cannot explain why it works, I can explain what the routine does. If the bit representation of the line number in the accumulator is (abcdefgh) where each letter represents a different bit, then this routine calculates GBASL to be (eabab000) and GBASH to be (0xxfghcd) where xx is 01 for page 1 and 10 for page 2 graphics. This routine is the most concise yet, but is also the slowest.

Calculated lo- and hi-bytes

As in Applesoft but uses X-register (saves 3 cycles)

```
        TAX                 1     2    ;Save temp.
        AND  #$C0           2     2    ;A=(ab000000)
        STA  GBASL          2     3    ;Save temp
        LSR                 1     2
        LSR                 1     2    ;A=(00ab0000)
        ORA  GBASL          2     3    ;A=(abab0000)
        STA  GBASL          2     3    ;GBASL=
                                         (abab0000)
        TXA                 1     2    ;A=(abcdefgh)
        STA  GBASH          2     3
        ASL                 1     2
        ASL                 1     2
        ASL                 1     2    ;A=(defgh000)
        ROL  GBASH          2     5    ;GBASH=
                                         (bcdefghc)
        ASL                 1     2    ;A=(efgh0000)
        ROL  GBASH          2     5    ;GBASH=(cdefghcd)
        ASL                 1     2    ;A=(fgh00000)
        ROR  GBASL          2     5    ;GBASL=
                                         (eabab000)
        LDA  GBASH          2     3    ;A=(cdefghcd)
        AND  #$1F           2     2    ;A=(000fghcd)
        ORA  HPAG           2     3
        STA  GBASH          2     3    ;GBASH=
                                         (0xxfghcd)
                           33    58
```

Conclusions

Table 1 summarizes the memory requirements and execution times for the four algorithms. The size and time values are relative to the smallest and fastest algorithms, respectively. The final column shows the Space-Time Product (STP) for each of the routines obtained by multiplying the relative size by the relative execution time. Although I doubt that anyone will choose a routine based solely on its STP, it is interesting to note that the designer of the Applesoft routine did optimize this particular objective parameter.

contd.

Table 1. Summary of space-time requirements for the four algorithms.

Algorithm	bytes	cycles	size	time	STP
1. Full table lookup	397	19	12.0	1.0	12.0
2. Condensed lo-byte table	236	31	7.2	1.6	11.5
3. Condensed lo-byte and hi-byte table	152	48	4.6	2.5	11.5
4. Calculated lo- and hi-bytes	33	58	1.0	3.1	3.1

The decision as to what algorithm to use should be determined by the constraints and requirements of the particular application at hand. For example, as mentioned earlier, animation routines often are written for the utmost speed and memory usage is of little concern. Thus the full table lookup algorithm is common here. Within Applesoft the overriding concern was space so the full calculated scheme was used. In most applications though the choice is not quite so clear cut. Users want their routine to respond quickly, but they don't have infinite memory to work with. In fact some simple additional analysis will show that the full calculated routine is usually superior.

Let's consider for example the case of a hi-res vertical scroll routine. The general algorithm used will move one line at a time up to the next line, until the entire screen has been moved. The move portion of the routine may look something like this (assuming GBASL1 contains the source line address and GBASL2 contains the destination line address):

```
        LDY #$39
LOOP    LDA (GBASL1),Y      2       5
        STA   (GBASL2),Y    2       6
        DEY                 1       2
        BPL  LOOP           2       3
```

We can see that the inner loop takes 16 cycles for each pass for a total of 639 cycles per line (the last BPL executed only takes 2 cycles). Even if we ignore the outer loop structure we see that the use of the fastest vs. slowest line address routine (even assuming it was called twice per loop) would only speed the scroll up by 11%. [Of course there are better ways of performing this scroll by using the up/down routines in Applesoft but this serves to illustrate our point.]

In fact the reason that I wrote this article was the appearance in recent months of two articles, one a double hi-res character generator and the other a double hi-res screen dump utility, that used the table lookup for a very small gain in total speed. In both cases though the lookup tables took up a majority of the program's total memory. I would argue that in cases like these the better choice would be the smaller routine.

Trail of Apple /// contd. from pg 16

donation. There was some red tape and bureaucracy thrown in to slow things down, but I talked with Bob Cook, the President of Sun Systems in late August and he assured me they would be sending out the machine in the near future, and they did.

I plan to visit Bob and Sun Systems, by the way, while I am in Utah for a broadcast convention in Salt Lake City. It'll be a good drive, though. Logan is an hour and a half away from Salt Lake. Sun Systems is the "Official Remainderer" as I like to call them for Apple where the /// is concerned and are an excellent source of native-mode software and hardware for the ///. You can get more information by calling 801- 752-7631.

I also plan to visit Frank Moore of Pair Software fame when my wife and I are visiting friends in the Sacramento area. Hopefully, I'll be able to get an update on the proposed group purchase of 512K boards from On Three, which Frank is coordinating.

Finally

It looks like November will be the date for On Three's Bob Consorti to come out our way. There are no definite plans set yet, but he has indicated November is the best time for him. We'll keep you informed.

Q & A contd. from pg 19

capacitor. (It might have a number different than C7.)

7. Replace C7 with a same value capacitor with at least twice the voltage rating (20 V). Use a soldering pencil, not a soldering gun! NO acid solder either!
8. Plug in AC, turn on supply and test with a volt- meter.
9. Replace circuit board, cover, power supply, and connections.
10. Turn the Apple on. If ok, turn it back off, replace your peripheral cards and go.

    My recommendation is to be very careful in step 8 as lethal voltages are present on the circuit board. On second thought, it probably is better to skip step 8 entirely. Just check carefully after soldering that you haven't left any bits of wire or solder lying around on the circuit board.

THE APPLE IIgs: FIRST IMPRESSIONS
by Leon H. Raesly, Bruce F. Field and Raymond Hobbs

ROLLING EXECUTIVE BRIEFING
by Leon H. Raesly

The rolling "Executive Briefing" from Apple Computer, Inc. just steamrolled Washington! (And Atlanta, Dallas, New York, Boston, etc.).

With the pizazz expected from Apple under Jobs, but with a clear Sculley impact, the "Executive Briefing" has been given in most major cities of this country. For the last ten days, selected teams have put on these shows.

First, in the morning edition, all dealers in a given geographical area were invited, along with selected people from the public and private educational fields. Mixing together at the various shows, none were quite aware of the tremendous changes and improvements they would see in Apple's product line. The STAR of the show was the Apple IIGS (for graphics and sound—although some wags in Cupertino said it stood for "Gassée and Sculley"), a fully compatible Apple II family machine—and the latest machine clearly at the forefront of technology!

The demonstrations of the IIGS brought many gasps of astonishment (30 seconds of an 8-piece band playing rock music FROM THE COMPUTER, as one example). Color and light shows were all part of the presentation, and were quite good.

After the initial unveiling, Apple engineers came forward to present the "innards" of the machine, and explain the importance of each. Then a general "question and answer" session followed. Lunch was provided for all attendees.

Starting at 1:00 PM was a repeat of the morning session, but this time a difference with a special flavor. The attendees were selected "ambassadors" from all the User Groups in the areas (as much as 200 miles away, or more, in some cases). These ambassadors were given the full treatement that the dealers and educators were.

The theme of the afternoon was stressed again and again: The "Connection" is a move by Apple to bring dealers and User Groups closer together, as well as to recognize the importance that User Groups have been to Apple in its development and growth over the years. The show concluded with a buffet type "dinner" and cocktail hour, starting at 5:00 PM, with User Group ambassadors, education representatives, and dealers mingling together.

The entire effort was a very clear statement that Apple Computer, Inc. has made a definite commitment to working with and supporting User Groups. Their slogan from 1984, "Apple // Forever", is not just empty words.

DESCRIPTION OF THE APPLE IIGS
by Bruce F. Field

I recently attended a 2-hour briefing on the new Apple IIGS as one of your Washington Apple Pi representatives. The following is distilled from the notes I took during the meeting and may contain small errors, and for this I apologize.

The new Apple IIGS is Apple's latest continuation of the Apple II line. Although it has some "Mac like" features, the Apple IIGS (GS for short) is definitely a more powerful Apple II, rather than a Macintosh. It is an addition to the Apple II line and does not replace either the Apple //e or the //c. The GS system consists of a roughly rectangular CPU box somewhat smaller than the current //e, a detachable keyboard with an integral 10 key numeric keypad, and a low profile mouse. Apple is modifying their color scheme (again)—the GS is white like the //c but with platinum (light gray) trim. (A semi-new //c is also being introduced. More on this at the end of the article.)

Hardware Description

The base GS contains a 65816 16-bit processor, 6 custom chips and 256 Kbytes of on board read/write memory (RAM). The 65816 is an improved 16-bit version of the 6502 (the processor currently in the //e and //c) and has a mode to emulate the operation of the 6502. For you techie types the processor runs at a maximum clock rate of 3.5 MHz, but clock cycles are stolen for video refresh, and RAM refresh, resulting in an average rate of about 2.6 - 2.8 MHz. For the average user this means most things, other than disk access, run about 3 times faster than on the //e. One custom chip in the GS, the Mega II, contains virtually the entire circuitry of the //e!

The GS has seven standard Apple II slots that can be used with most existing Apple cards. Also included is a special memory expansion slot for Apple's new GS memory expansion card for increasing the memory to 1 Mbyte in 256 Kbyte increments using 256 Kbit chips. Third party boards are available for expansion to 8 Mbytes although these use the latest, i.e. very expensive, 1 Mbit chips. The //e auxiliary slot is gone, any cards designed for this slot will not work in the GS.

A disk port is built-in that allows you to daisy chain up to 4 disk drives and map them to slot 6. Apple says the 3.5" drive is the preferred drive for the GS, but a restyled (white and platinum) 5 1/4" Unidrive is also available. When the disk drives are accessed the GS automatically knows to slow down to the original Apple II speed of 1 MHz. A special circuit monitors when the disk drive motors are on and slows the clock speed accordingly. Old Apple II disk controller cards can be used in slots 4, 5, or 6 without modification or re-setting any dip switches.

The GS includes a premium sound generation chip with 32 oscillators or 16 instruments for what Apple describes as the best sound available on a personal computer. Ray Hobbs will have an in depth discussion of this chip as it is the same as used on some music synthesizers. A clock chip is built in with battery backup to maintain the time when the machine is turned off.

contd.

Two serial ports similar to the //c are included on the motherboard. These are electrically associated with slots 1 and 2. If the user wishes, they could plug another card into slot 1 or 2 and, under software control, disable the serial ports. Yes, the way I read it is that you can't use the serial ports and the slots too. At least one of the serial ports is designed to operate with the AppleTalk network. The machine has a desktop bus port on the back panel for connection to the keyboard and/or mouse. Generally the keyboard plugs into the back of the GS and the mouse plugs into a second connector on the keyboard. Apple has chosen to use 8-pin DIN connectors for the serial ports, keyboard and mouse. These are like the ones used on the Imagewriter II and the Mac Plus. Also on the back panel are an RGB video port, no extra card is needed, an NTSC (composite) video port, a 9-pin game port, and an earphone port for the sound output. A traditional 16-pin game I/O port is included on the inside on the motherboard for connection to old style paddles and joysticks.

COLOR!

Apple has made a substantial improvement in the color capabilities of the GS. In addition to all the standard //e modes, Lo-res, Hi-res, and double Hi-res, the GS has a 640x 200 mode (640 pixels horizontally by 200 pixels vertically) that supports from four to sixteen colors per line from a palette of 4096 colors. This takes a little explaining; each pixel in any horizontal line can be set to one color out of a subset of four colors from the total 4096. But, for each group of four pixels on a line the user can select one of four subsets (of four colors). Thus up to 16 different colors can be displayed on any line, but only 4 different colors can be displayed by all the pixels on any given line. This mode is suitable for 80-column text.

Also included is a 320x200 mode where each pixel in a line can be set to one of 16 colors from the total of 4096 colors. This mode is suitable for 40-column text.

Unlike the Apple //e the text and background can be colored. The choice of colors is left to the user; a Mac-type control panel is invoked to set the colors as desired. Apple has thoughtfully prevented the user from setting the text and background to the same color. Shucks, no messing up your neighbor's Apple.

Software

Apple has taken the fabulous Quickdraw routines from the Mac that allow it to do all the fancy drawing operations and included them in the 128 K ROM in the GS. The Quickdraw routines in the GS also support color.

Apple has developed ProDOS 16, a new operating system for the GS. This is similar to the old ProDOS with some enhancements for the extra features of the GS and the capability of running desk accessories. When booted, ProDOS 16 looks for a subdirectory labelled "Desk Accessories" and loads any applications it finds there, such as Pinpoint. ProDOS 16 also supports a Mac HFS type system for loading and saving files. A window appears on the screen with a listing of existing files on the disk and the user is given the opportunity of selecting a file, changing disk drives, ejecting a diskette, etc.

A software control panel is included in the system software to set user preferences. This displays and allows you to set a number of system options such as text color, background color, serial port settings, keyboard repeat rate, clock time and date, and many others I can't remember. No more trying to find the disk with the program to set your clock card. The settings of the control panel are maintained in 200 bytes of battery backed up RAM to maintain the settings even when the machine is turned off.

What you get and what it costs

The base Apple IIGS comes with the CPU box with 256 Kbytes of RAM, keyboard, mouse, 4 manuals, a 3.5" System disk, and a 3.5" Training disk. The four manuals are: Setup Guide, Owner's Manual, System Guide, and Applesoft Guide. The latter is designed to get the novice started with Applesoft programming but is not an exhaustive treatment of the langauge. The System disk includes a mouse based program selector and the usual system utilities. The Training disk includes about 2 hours of interactive training with the machine.

The base machine retails for $999. A more complete system with the GS (as above), an RGB monitor, and a 3.5" disk drive will cost about $1900.

Compatibility

The GS is supposed to be compatible with 90% of all Apple II software. It appears that it will be virtually 100% compatible with all Apple //e software. It will work with the present ProDOS, DOS 3.3, Pascal, and most CP/M operating systems. According to the Apple engineers, Z-80 cards will work in the GS if they do not use DMA, it they do use DMA they will most likely work at the slower (1 MHz) speed.

All Apple II and //e cards will work in the GS slots except for multifunction cards that phantom functions to additional slots.

The lower 64 K/128 K of memory is mapped identically to the the //e so programs that use the extended 80-column card in the //e will work fine in the GS.

The GS is compatible with the Imagewriter I and II printers and a special printer driver is available to use the Laserwriter over the built in AppleTalk node.

Upgrade Policy

All Apple //e's can be upgraded to the IIGS. The upgrade must be done at an Apple dealer and consists of a new motherboard and a new metal underpan. The upper case, power supply, and keyboard of your original machine are retained. No mouse is included with the upgrade. The low profile GS mouse, which plugs into the back of the computer, can be purchased or the original //e mouse will also work. Also included with the upgrade is a IIGS Owner's Manual. The retail cost of the upgrade is $499.

There is no upgrade available for the Apple][or][+. The back panels of the][and][+ are part of the upper case, whereas the back panel of the //e is part of the metal underpan. To upgrade the][or][+ would require replacing the motherboard, underpan, keyboard, and upper case. In other words throw everything away except the power supply.

New Products

Apple is introducing a number of new products to complement the GS. The briefing provided only sketchy details and no prices were given.

Apple Color RGB Monitor - a 12" monitor designed to work with the GS. It will not work with existing Apples.

Apple Monochrome Monitor - a 13" monitor designed to complement the GS, i.e. white with platinum trim, this is a white letters on black background type monitor.

contd.

Apple Color Composite Monitor - a 13" composite monitor recommended for the //e but not the GS. This is the same as the current Apple Color monitor except for the case, the ubiquitous white and platinum are used again.

Apple 3.5 drive - the same drive as the old 3.5" drive but in white and ... you guessed it platinum.

Apple 5.25 drive - same as the Unidrive 5.25 except for a new case in white and platinum. Surprise, this drive is also available in the same style case but in beige to match the //e.

Apple II SCSI card - a SCSI (small computer systems interface) card to allow you to attach fast peripherals such as hard disks to your Apple. This card works with the][+, //e, and IIGS and is NOT available in white and platinum.

Apple Hard Disk 20SC - a 20 Mbyte hard disk with a SCSI port. This is the same as the HD20 for the Macintosh but with a SCSI port. The disk is available in white and platinum and beige and will work with the Mac Plus.

Apple IIGS Memory Expansion card - this card is designed for the GS and can hold up to 1 Mbyte of memory. This is directly addressable memory for the 65816 and will only work in the special GS expansion slot.

Apple IIGS System Fan - a small fan that clips to the top of the GS power supply and connects to the GS motherboard for power. Apple recommends installing this fan when 3 or more cards are used in the GS. The fan can be installed by the user.

AppleWorks version 2.0 - an improved version of AppleWorks designed to work in Apple //e's and to take advantage of the extra memory of the GS. It has built in mail merge, new spreadsheet functions (i.e. AND, OR), automati- cally loads into the extra memory of the GS and expands file sizes to suit the memory. Users can trade in their existing copies for a "small" upgrade fee.

Briefly mentioned was the new Apple //c. The most obvious difference to the user is the change of the color of the keycaps. The machine is (altogether now) white with platinum keycaps. Inside, the motherboard has been changed to accommodate a new memory expansion card that mounts inside under the keyboard and expands the memory to a maximum of 1 Mbyte. The cost of the new //c is $940. All current //c owners can upgrade to the new motherboard for the price of the memory expansion card alone. In other words, if you buy the memory expansion card it doesn't matter if you have and old or new motherboard, if you have an old one Apple will swap it for a new one. Hurray, Apple has a reasonable upgrade policy—maybe we're on a roll here.

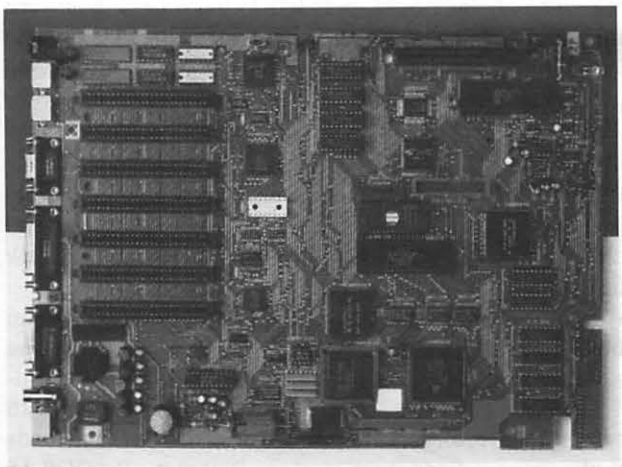
The //e remains unchanged with the price reduced to $829 for the base CPU without disk drives or monitor.

THE SOUND CAPABILITIES OF THE APPLE IIGS

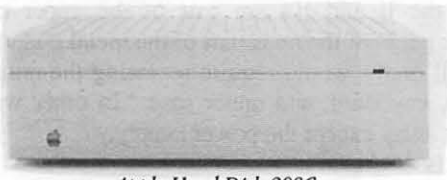
by Raymond Hobbs

The Apple IIGS has built-in sound synthesis capabilities, in the form of a sound synthesis chip manufactured by Ensoniq Corporation in Malville, PA. This chip is the same one used in the Ensoniq Mirage synthesizer (the one that I use myself), and is capable of "adjusted 8-bit wavetable resolution". The adjusting is a microcoded software sleight-of-hand which results in a de facto 12-bit resolution as long as the sampling rate is kept below 28 KHz. The Ensoniq chip is used to drive 32 oscillators, which (as we heard) are able to reproduce a creditable small combo. The GS has no built-in MIDI interface, but uses the same serial porting employed by the Macintosh, so I would imagine that MIDI interfaces will be available without too much delay for the GS. The exciting thing is that some developer is probably working right now on a package to allow the GS to act as a MIDI controller for itself and peripheral MIDI devices simultaneously. This could deliver a symphony orchestra onto your desk.

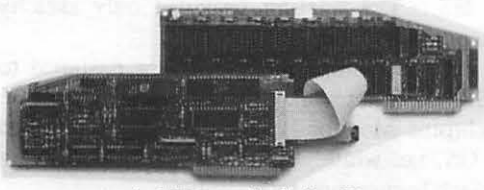
This single microchip (actual size) performs all the functions of an Apple IIc and Apple IIe. And it's part of every Apple IIGS— which means an Apple IIGS does more than carry the Apple II name. It carries the family genes.



Apple IIGS Upgrade

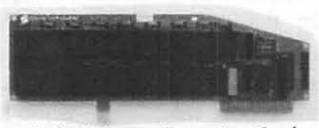


Apple Hard Disk 20SC



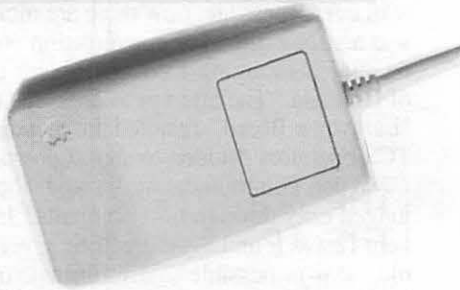
Apple SCSI Interface Card

Apple IIGS Memory Expansion Card

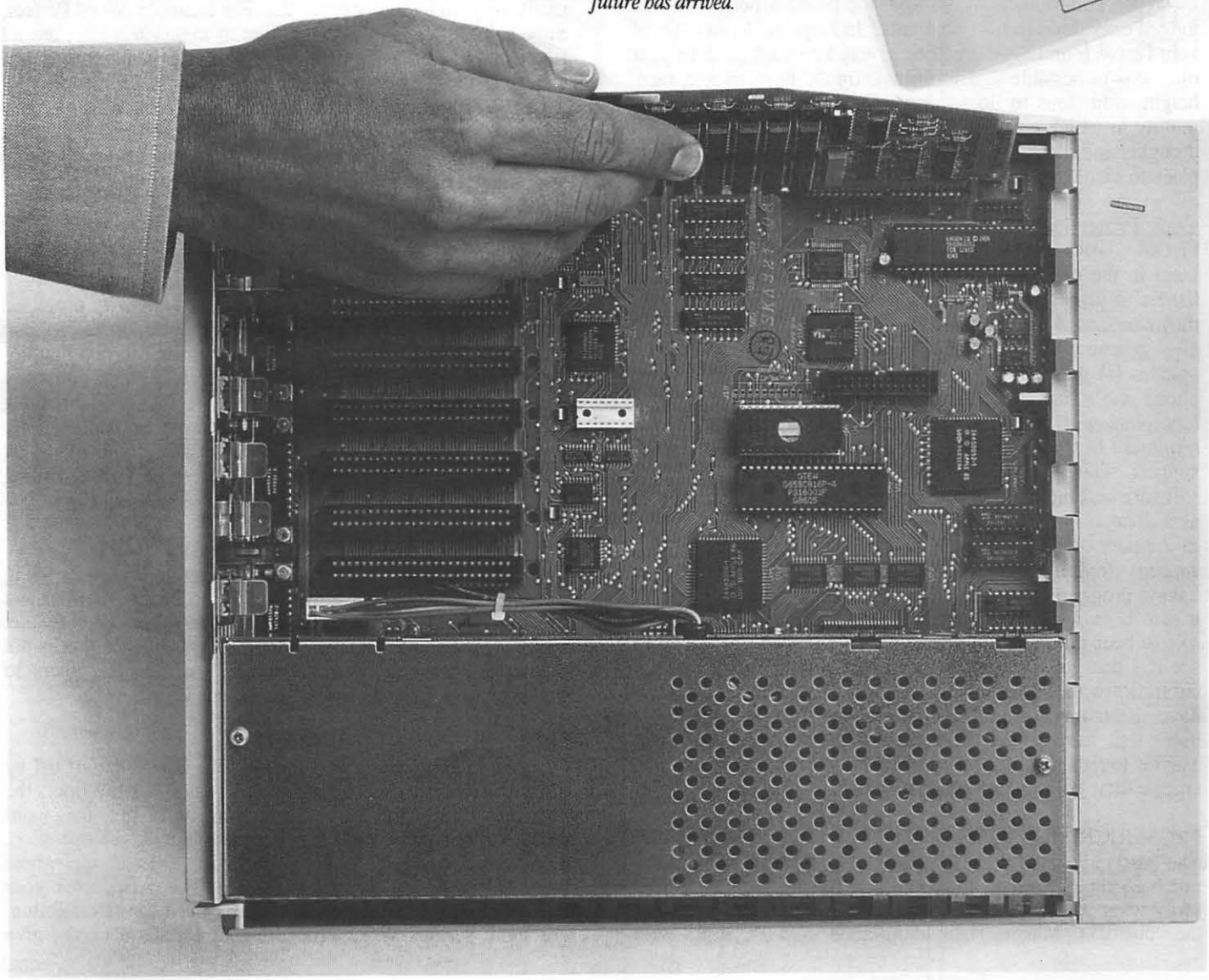


Apple II Memory Expansion Card

Apple IIc Memory Expansion Card



The mouse cable plugs into either the left or right side of our new detachable keyboard. For all the lefties who've waited patiently for just such an advance, the future has arrived.



BEST OF THE APPLE ITEMS FROM TCS

by =Alexander-

I have greatly appreciated the occasional recognition granted me for this column. However, I would like to take a moment to point out that others have joined me in this effort for at least a year now. In particular, Euclid Coukoma has been a most faithful and competent colleague.

I haven't made any comment on these columns previously, nor do I expect to in future, because I believe the messages from the talented TCS (a.k.a. ABBS) respondents are more interesting than anything I could write. But, now that I have opened Pandora's box this once, let me make a few brief observations.

The new TCS is marvel to behold, but it is far more complex and difficult to cover for this column than was the old WAP ABBS. The WAP ABBS was like the old party-line telephone system. There was only one board, so everybody read every message; now there are more than 30 boards. There was a strong thread of conversation outside the computer field on subjects ranging from the nature of being to the invasion of Grenada. The attempt to continue those discussions onto a "Lafayette Board" resulted in messages so strident that the TCS operators decided to shut it down.

When communicating through the board a person can be judged only through his comments. In response to an offer of help I have found myself calling a very knowledgable 13 year old. It is impossible to discriminate on the basis of age, race, height, ridiculous to do so on the basis of gender. A community in which a person is known only by the quality of his thoughts and ideas, TCS—you can't live there, but it's a great place to visit! =Alexander-

<u>Copy Protection</u>

FROM CHIP LENKWICZ ON 08/17

I am in the process of getting a letter off to Software Publishers to protest what I see as a double standard. Recently they announced that their software was going unprotected. So after getting a Unidrive 3.5, I contacted them about software updates (in particular to their ProDOS versions). After three phone calls in which their computerized phone system (complete with recorded messages) hung up on me after a minimum of three minutes!!, I spoke to someone in technical support. This gentleman informed me that only MS-DOS software was included in the non-protected status. This comes as a great surprise to me. The PFS line was among the first to support the 3.5 drive. It defeats the purpose of a high capacity drive if you need a disk for each application. I prefer having programs and data on the same disk (call me lazy, but it sure is easier!) Now this is where you come in. I would like to hear the thoughts of others in this matter. I intend to see if I can get a response that I can submit to the Journal (from Software Publishers that is). I feel it's strange that they have taken the attitude that they have, since it was Apple users that have given them their first start with PFS:File. Maybe together as a Apple community we can get them to change their policy. Let me hear from you all soon.

FROM RICH MLODOCH ON 08/17

The best way to get them to change their mind is to refuse to purchase their "protected" product. After all ,you can't give away what you don't buy. Their policy is probably aimed at the "business" maket. Their complaints from PC users with hard drives probably prompted this change. I doubt that they care about who got them going in their business. In order to stay in business they must please those who are presently purchasing their product, not those who did so in the past.

FROM JOHN CONNAUGHTON ON 08/18

I suggest that you get a quick subscription to the magazine "computist". The one way to get around your problem is to remove the copy protection code from the disk. I don't think one should give out copies of programs to others. Let them spend their own $$. However, until companies drop copy protection from their software, I am completely in favor of circumventing copy protection schemes so that I can make my own completely legal archival backup copy. This also lets one run software from a hard disk or a unidisk. Recently I have gotten tired of trying to backup copy protected software. My solution has been quite simple. I simply refuse to consider any software for my use which is copy protected. Perhaps this is the best way to get companies to drop copy protection (hurt them in their pocket book). There is a growing number of non-protected software programs which are really very high quality products. For example ,Word Perfect, Supercalc 3a, & AppleWorks, just to mention a few, are all fine examples of "state of the art" software which is not protected. If these companies can exist without protection why can't the PFS people. I hardly think their software is any better than the ones I have mentioned. I suggest that you insist that your PFS software is unacceptable and strongly demand your money back. Maybe that will give them the message.

FROM DANIEL HUGHES ON 08/18

There are damn few companies that put out unprotected software. Beagle Brothers and Penguin come to mind. AppleWorks, though not copy protected, is heavily protected from computer buffs who simply want to explore a program or modify it. Let's face it, if you limit youself to copy unprotected software you limit your work severely. Computist is a partial solution, but once they publish the code breaking scheme for a given program it is almost immediately reprotected. You can't win! I wonder how come recording companies haven't thought of a scheme to prevent recording tape to tape. I guess it's impossible to fool the ear.

FROM JOHN CONNAUGHTON ON 08/19

Let's hope that more companies will stop investing $$ in protection schemes and turn that $$ into better software and support. It's also up to us as users not to give out software. I still maintain that there is more quality software that is not protected than you think. Perhaps we can get others to suggest non-protected alternatives on this board.

FROM BRETT PARKS ON 08/19

Ok, that sounds like a good idea to me. And I'll start off by offering for spreadsheet/database use (aka AppleWorks) the Program SuperCalc 3a. Sure, you don't get the word processor, but you do get <u>excellent</u> graphics, faster operation, more functions, and no copy protection. Load the whole thing to your hard drive & watch it fly. Also, uses your RAMWORKS & Slinky cards w/o any need for modification. For more serious Word Processing & Database needs, give

contd.

Simply Perfect a try. (That's assuming LJK is still in business, which may be a big assumption.) I've seen and tried a lot of 'em for the Apple, but none I've seen beats this one, and an on-line spelling checker to boot (also, not copy protected).

FROM ROBERT B. CALHOUN ON 08/20
I disagree with your statement about AppleWorks. The program seems to follow straight ProDOS protocols, much more than most programs. Sure, if you hit reset it dumps you in some weird place that doesn't let you do anything, but did you ever stop to think that AppleWorks does a great deal with bank switched memory? There IS no moniter normally connected to the upper 64K. If your program crashes while the moniter ROM is disconnected, you will crash and won't be able to do much. That is not what I call protection. I agree that Apple hardly gave away source codes for AppleWorks, but it certainly is not intentionally protected. The main reason that audio equipment doesn't have "copy protection" is because of the great degree of standardization. The signals generated by a tape deck, CD player or phonograph are all identical in nature, although not in quality. Once it leaves the originating device, there ain't much anybody can do about it. One thing for sure, tho, there is a chance that digital tapes will be introduced soon. (Utterly different from cassettes.) These will NOT allow straight digital-to-digital copying from the CD to the tape, because the manufacturers dont' want you to do that. You will have to go through your system's normal analog channels, then convert back to digital. I think digital tapes are a stupid idea anyway, so I don't really care that much.

FROM GARY HAYMAN ON 08/20
If you object to copy protection—not buying the product does send a message but you can be stronger than that. Just imagine if a company received hundreds of thousands of post cards or letters that said simply... I DID NOT BUY YOUR PRODUCT BECAUSE IT WAS PROTECTED. I PURCHASE UNPROTECTED SOFTWARE ONLY. WHEN YOU CHANGE YOUR POLICY, I WILL THEN CONSIDER YOUR PRODUCTS. I think that this would let them know much faster than just not buying the product. It's one thing not having the orders come in—but they may not know the reasons (or choose to be blind to it), but when the letters come rolling in they can't ignore it.

Crashed Disks
FROM DANIEL HUGHES ON 08/13
Seems to me that this is a major flaw in "this great integrated software program." Before I had AW I used Bank Street Writer, a kiddie program, and never lost data. I used it quite extensivey for several months. With AW, I have lost several disks. Some I've recovered with Bag of Tricks and others by hook or crook. Some have gone to data never never land. I am also having trouble with getting "Segmented disk" messages since I got my expansion board. Trouble is all of my files are under 30K and I never wanted to segment any of them. What's going on here??? *Darkstar*

FROM LOU PASTURA ON 08/14
Hmmm--I'm no expert, software or hardware, but the first place I would look is at my disk drives if I were you. Since under ProDOS all the disk info is out on the edges, data disks can be blown by drives occasionally not coming up to speed fast enough, which means you can't read the disk again unless the drive makes exactly the same error (not even remotely likely). That might also explain the "segmented disk" problem, especially if the problem were caused by what turns out to be a corrupted copy of the Ram expansion/ramdrive software. Like I say, I'm no expert, but I hope this helps.

FROM MIKE UNGERMAN ON 08/17
As I understand it, it is also possible for disks to be blown by the current the motor draws as it starts up if the disk is not fully up to speed by the time the write head starts writing....

CP/M Disk Structure
FROM KEN KNIGHT ON 08/14
Somehow some of my WordStar files have been messed up. Some contain parts of other files, other just are incomplete. I would very much like to recover those file. How do I do this in CP/M? I need a disk editor. But, more important I need to know what is where on a CP/M disk. Also, can someone suggest a book that will cover the ins-and-outs of CP/M [something like Beneath Apple DOS for DOS 3.3)?

FROM SAM SWERSKY ON 09/02
Ken, there was a very good article in CALL-APPLE, sometime around January of this year, that dealt with how DOS 3.3, ProDOS, Apple Pascal, and CP/M maintained their disk directories. That is an excellent beginning. Realize also that if you are having problems with a 5 1/4" disk, the disk itself is a normal 16 sector Apple disk--any good DOS 3.3 zap program will read from and write to the disk. Beware that the sector interleaving is different! The directory track is on track 3 (of an Apple floppy). Try looking at PA.COM, available from Joe England's fabulous T.I.E. BBS.

CP/M-IBM File Transfer
FROM DAVID GRANITE ON 08/01
What is a good modem program for transferring CP/M (WordStar) files to an IBM ,or for that matter what is a good way to transfer these files without a modem from an Apple //e with Starcard to an in-office IBM.

FROM JIM KELLOCK ON 08/03
I have a //e with Applicard (same as Starcard) and an IBM compatible, and transfer between the two with a null modem cable and Crosstalk on the Apple and a program called Mirror on the IBM side. Mirror is a Crosstalk clone. Mirror supports batch copy (Xmodem multi-file transfer) but Crosstalk does not. However, you can create an XTS script file on each machine using the XX command on the sending side and the RX command on the receiving side and copy as many files as you want unattended. The transfer works smoothly at 2400 baud. At 9600, the Apple has problems. Format for the XTS file on the sending side is:
XX file1
XX file2
etc.
Format on the receiving side is
RX file1
RX file2
etc.
Hit the remote ATTN key on the calling system and type DO XTSFILE, then hit the local ATTN key and type DO XTSFILE. The XTS command files will begin execution and go until they run out of files. Mirror is available locally for $49.95 at VF Assoc. Crosstalk is available at various places in both Apple CP/M and IBM formats for an exorbitant price. Mirror is not available in Apple format. Call me at 986-9522 if you have any questions.

contd.

FROM GEORGE KINAL ON 08/04
In the CP/M environment (and MS-DOS, too), you don't need a comm. program to transfer files between two adjacent machines. Use PIP on CP/M and the equivalent on the PC (I forget now, FILECOPY??). In CP/M, you designate the :PUN device as the output (target) file; on the PC, you would use COM1 or COM2. Microsoft CP/M had a bug in it that prevented it from working properly, but I assume that Starcard's PIP works OK.

FROM DAVID GRANITE, ON 08/06 09:15PM
Thanx again, but what is the :PUN device (no pun intended) in CP/M?

FROM GEORGE KINAL
The :PUN device is the (paper tape) PUNch—on the Apple, it is the OUTPUT side of an interface card in Slot #2. The INPUT direction is the :RDR - Paper tape reader. Meaningless terminology these days, of course. Anyway, just think of it as equivalent to PR#2 in DOS (well, not exactly....). See my lap computer article in December 85 WAP Journal, page 34.

FROM DAVID GRANITE ON 08/13
Well, she tried it and it seemed to work--connecting the apple by cable from the ss card to the equivalent on the IBM. N ow she can't convert the file from CP/M to MS-DOS on the IBM. Any suggestions?

FROM GEORGE KINAL ON 08/28
Not sure what you mean when you say that it worked, but the files can't be converted. For text files only, there should be no conversion necessary. That also applies to Wordstar files. Other Apple word processors might present compatibility problems, because on the PC, setting the 8th bit high calls up the extended character set (the one with the smiley faces, little houses, and other graphics symbols). If you have 8th-bit problems, you can use a utility such as FILT-7 to set the 8th bit low. Alternatively, make sure that the SSC dip switches are set for seven bit transmission.

FROM DAVID GRANITE ON 08/28
The problem is that she cannot manipulate the files using an IBM word processor, like Word, since that software uses MS-DOS and will not look at CP/M files. Shee says that she can dump it over to the IBM, but it is unformatted and in CP/M format, thus unreadable by the Word software.

FROM GEORGE KINAL ON 08/29
No, it is not a question of "CP/M" format. By definition, any file successfully written to an MS-DOS disk must be in MS-DOS format. But that does not mean that the contents of the file are appropriate for the target word processor; most word processing programs these days use their own proprietary format. Try this: under MS-DOS, "TYPE Received.TXT"—see if it lists on the screen. If it does, then it has been received OK and is in proper MS-DOS format. If that is the case, then I would hope that Word has a conversion utility to convert ASCII text to its own proprietary format.

How to Order

FROM GARY HAYMAN ON 08/08
My personal experience with both Northeastern Software and Programs + has been very good. I have placed over 10 separate orders with Northeastern and they have arrived quickly with no problem. When I call, I ask them if they have the item in stock, I repeat the order several times and make them say it back to me, and I ask for their name. Psychologically, when the person on the other end of the line gives you their name there is a better chance for them to feel more obligated for their actions. It works for me; perhaps it will work for you too. (By the way - please write the name down as well at the other information, date and time of call, what was ordered. If you have to call back with a question you can sound very official and they know you are serious. People tend to treat you with more respect and immediate action if you exhibit a calm seriousness. End of Human Relations Lesson 1-5.

FROM JOEL MAILLIE ON 08/21
Very interesting, but it didn't work for me. I DID ask them to make sure the Z-RAM was in stock; I DID get the person's name; I DID ask them to check on my order twice after the time passed during which they had promised it would be shipped; I DID ask them to make sure that my order actually got cancelled so I wouldn't have to ship it back; and they DID promise all those things. But the only thing that worked was letting them know I am a lawyer and I wasn't going to sit around forever waiting for them.

Power Supply Fix

FROM ALEXANDER BARNES ON 08/22
Months ago you had a fix for power supplies for the //e's which I had meant to include in my column, but I can't find that I ever did. Would you mind posting it here again? P.S. It is not just a co-incidence that I ask because the time which it takes for my machine to boot has steadily increased to a couple hours now.

FROM TOM VIER ON 08/26
Everybody save this file! It's worth at least $50!
1. Pop the lid off your Apple and set it aside.
2. Remove your cards and unplug power supply from cord and board.
3. Turn the Apple up on its side with the power supply up.
4. Use a Phillips screwdriver to unfasten the power supply and remove it.
5. Pop the two rivets and and remove the cover.
6. Locate and remove capacitor C7. A 220uf 10V cap.(Might be a different no.!)
7. Replace C7 with a same value cap with at least twice the voltage rating. (Use a soldering pencil, NOT a soldering gun! NO acid solder either!)
8. Plug in AC, turn on supply and test with voltmeter.
9. Replace circuit board, cover, power supply and connections.
10.Turn it on. If ok, return your boards and go.

Best ProDOS Communications Software

FROM ERNIE LANE ON 08/20
I have been using ASCII Express (DOS 3.3) for a couple of years now, and I want to switch to a ProDOS telecom package. ASCII Express is the first that comes to mind, of course, but what alternatives are there, and how good are they? Two that I have heard of, but know nothing about, are CommWorks (by PBI) and Point-to-Point (by Pinpoint). Any experience with either? Comments?

FROM BRETT PARKS ON 08/20
Ernie, for my money ASCII Express is the best, so why mess with the rest? Besides, you already know how to use Ascii, perhaps there is an upgrade policy for getting the ProDos version if you already own 3.3?

contd.

FROM RICHARD ROWELL, ON 08/22 07:36AM
Upgrade "policy" for ASCII Express is slightly expensive - I think it's around $45 to go from DOS 3.3 to PRODOS. Cost depends on the serial number of your present copy. I also want to upgrade—in fact I sold my DOS 3.3 version at the garage sale, but still have not accepted the expense of upgrading a package that was expensive to begin with. My whining here is certainly no reflection on the quality of ASCII Express —it does everything (as you know) that one could ask for from a telecomm package—and the manual ain't bad.

Lost ProDOS Files
FROM STEPHEN HADLEY ON 08/07
This is a ProDOS question at heart, with AppleWorks involved as well. I'm new to ProDOS, but have tinkered with 3.3 extensively. If this problem had occured in 3.3, I would have no problem poking around with a track/sector editor (Inspector). I say that in hopes of avoiding suggestions that I check the position of the ON/OFF switch, if the drive door was closed, etc. I have a blown data disk in AW. I did an OPEN APPLE-S while working on a spreadsheet. The drive made a clacking sound twice, but the prompt returned as if the save had been completed normally. Being suspicious, I tried to list the files on the disk and got "UNABLE TO READ DIRECTORY". While I was able to format a new disk and save the file, I need to save other files on that disk. So, I have looked at the data disk under 3.3 with the Inspector, but it is obviously a whole new ball game in terms of what's where. I don't have any manuals or other books that explain ProDOS in depth. Which leads to—Question One: What text(s) are recommended for in-depth study of ProDOS; to the degree of being able to edit the tracks/sectors. And, the big one—Question Two: Can someone guide me through a patch job, or offer other suggestions to reclaim the disk?

FROM PAUL H. SCHLOSSER ON 08/07
Stephen, a friend of mine had the same thing happen recently. She booted Copy II Plus and it was able to catalog the disk, so she re-booted AppleWorks and it was able to read the disk. Don't know what happened though. I've just recently begun using a ProDOS disk editor, and have learned some things, but by no means am I an expert. I suggest you download a program from Scott's BBS, called 'Block Editor'. It's a very nice public domain ProDOS disk editor, complete with documentation. Addison-Wesley now publishes most Apple manuals. I think the ProDOS manual is about $25. I've heard lots of good comments on another book called 'Beneath Apple ProDOS'. Let me know if you have any more questions.... ps - I also obtained a sheet of info from Scott, which, explained the ProDOS directory. Very helpful.

FROM ERIC RALL ON 08/08
ProDOS can have problems with the volume directory. It seems the delay used for getting the drive up to speed was shortened with ProDOS. That means if your drive isn't up to speed the volume directory can get trashed! The volume directory is blocks 2-5. Beneath Apple ProDOS has a good explanation of the directory and what it should look like. Quality Software (the publishers) also sell Bag of Tricks 2. (the 2 is important—that's the ProDOS & DOS 3.3 version) Bag of Tricks 2 should help in reconstructing the volume directory. It also has a disk zap utility that reads BLOCKS, so you don't have to convert sectors to BLOCKS before reading what you want. Both the book and the program are MUST HAVES for serious ProDOS work. Another reference that I find handy is Apple's "ProDOS Technical Reference manual". That plus Bag of Tricks 2, Beneath Apple ProDOS and lots of time can make you positively dangerous. You'll be able to trash disks in ways you never dreamed. And if you're lucky, you may even resurrect one or two disks.

FROM MIKE UNGERMAN ON 08/08
The same problem was worked on in the Pi Office last week. Using Bag of Tricks II, we attempted to re-construct the catalog. We got an error message giving the block number (track 0). Then using Copy II Plus, we did a disk map and found where the block was. We then copied the whole disk to another to preserve the original. Then initialized the track that was bad using the init portion of BOT II. Then using Copy II Plus, used the sector editor to copy all but the bad sector of the bad track to the good track on the copy. Then copied a sector of blanks to the copy disk. This restored the original directory less the file that had the bad sector in the directory. Using the copy file option, copied all the files that could be accessed to another ProDOS disk. Couldn't salvage the bad file (file actually good, but would need to reconstruct the directory and didn't have enough time nor Beneath Apple ProDOS handy to do it!)

FROM DANIEL HUGHES ON 08/09
You might try cataloging the disk on Copy II+ and then try to use the ASCII text file loading option on Appleworks to load the file. I had success doing that once or twice. Sometimes you have to try everything one or twice or three times or four times, etc. Get it. *Darkstar*

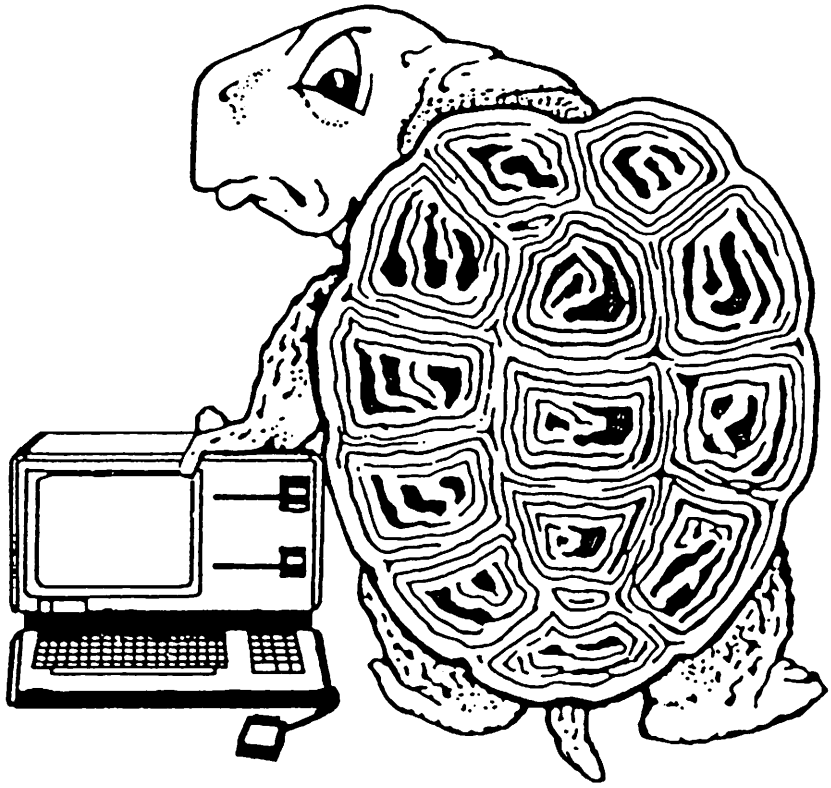
FROM STEPHEN HADLEY ON 08/09
This is getting dangerous! Eric's right there! Using the Block Editor that Paul suggested, and I can't believe it is public domain—it's excellent!, I found that I could not read blocks 2 or 6. So I read those blocks from my backup data disk and wrote them to the bombed disk. After writing block 2, I tried to catalog the disk. No go, but it did not CLACK when accessing. I considered that progress and went on to overwriting block six. Again I attempted to catalog and GOT IT! Well, part of it. It listed maybe two thirds of the files and gave me a RANGE ERROR. Range Error from a catalog command? That's where I quit. I was unsuccessful in getting the books that Paul, Eric and others recommended, so I was/am really stumbling around in the dark. While I am a gambling man, I also know when not to push my luck. Anyone needing a truly excellent block editor should download the file off the Cracker Barrel. It's just as good, if not better that Inspector/Watson or Bag of Tricks.

NOTICE FOR STATISTICS BUFFS

Simple-Stat is a program written in assembly language that does Monte Carlo experiments in probability and statistics. This is a radically different way of dealing with probability and statistical problems that have developed in the last decade, and which might be useful in the education of high school and university students. The developer is a professor at the University of Maryland. If interested in trying the program, send a blank disk to Julian Simon, 110 Primrose Street, Chevy Chase, MD 20815.

Computerfest '86

A gathering of user groups and vendors in the Washington D.C. area



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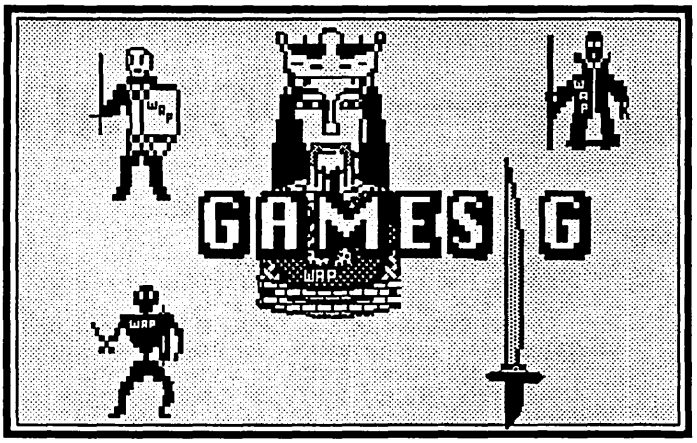
GAMESIG NEWS
by Steven Payne



Attendance at the September 4th "Back to School" session seemed lighter than usual, since most were finally able to find seats in the crowded tutorial room. Members shared happy memories and incriminating snapshots of the festivities on August 23rd, when Ron Wartow and GAMESIG sponsored the main WAP meeting, with numerous special guests and previews of forthcoming software (including "Wizardry IV" and "Ultima V"). See the article and photos elsewhere in this issue.

Weeping and gnashing of teeth followed Ron's surprise announcement that he is retiring from office; fortunately, this does not mean he is leaving the group, but only that he is advancing to a new and unprecedented experience level as "GAMESIG Chairman Emeritus." Thomas Johnston was elected his successor by acclamation, to be assisted by Marc Hoff (in the Macintosh department). Yours truly, a poor first-level cleric, will continue as columnist and review editor for the time being.

After passing the hat for outstanding expenses incurred during the August celebrations, the meeting ended on an upbeat note with a demonstration of "Sorcellerie," the French version of "Wizardry." The next meeting of GAMESIG is scheduled for October 2nd at 7:30 P.M. in the Office. Ron alerted us to expect soon the release of major new gaming programs for the Christmas season. Meanwhile, the following software was received for review:

F15 STRIKE EAGLE (Microprose, Apple // series with 64K, joystick required) a flight simulator program.

DECISION IN THE DESERT (Microprose, Apple // series with 64K) a war game simulation of North Africa, 1940-1942; with 128K the program switches to hi-res mode.

MEETING REPORT (GAMES): August 24
by Barry Bedrick

Having heard enough about a surfeit of spreadsheets, a wealth of word processors, and a plethora of other programs for serious use, about 400 enthusiastic Pi members were treated at this meeting to a gaggle of games. Highlights were: the presence of programmers and representatives from major game software companies including (alphabetically) Electronic Arts, Microprose, Mindscape, Origin Systems, and Sir-Tech; the demonstration of many game programs, both for the Apple II and the Mac; the distribution of much free software as well as souvenirs; a trivia quiz and slideshow; and the last official public appearance of outgoing (in every sense of the word) GameSig Chairman Ron Wartow.

The meeting was a combined Apple II-Macintosh session. Because so many games are available in versions for both computers, and because Apple II people enjoy seeing the Macintosh demos and vice versa, the joint meeting format seemed appropriate. Also, the joint format lent itself to a side-by-side comparison of a variety of projectors. The projectors were used alternately to show games, and a vote was taken on them, about which more elsewhere in this issue.

A Macintosh slide-show entertained everyone during the break before the meeting: Prepared by Ron Wartow, it included screens from games, clip-art, and cartoons.

Ron opened the meeting, costumed as both a monk and a Chinese scholar, by introducing all our guests. From Sir-Tech came Robert Woodhead, co-author of the Wizardry series as well as other games, and Lynn Bresett, Director of Customer Relations. Also present were Richard Garriott, better known under his nom-de-plume of Lord British as author of the Ultima series, and Dave Albert, author of Xyphus and of the text for the adventure game Transylvania, both from Origin Systems. Microprose sent Jim Synoski, a Pi member. Gary Waszlewski, of Electronic Arts, and Karen Novak, of Mindscape, were introduced.

In addition to these visiting celebrities, Ron introduced two of Washington Apple Pi's own game creators, Karen Rall, author (with Ron) of the as-yet-unreleased but eagerly awaited Pixel's Revenge; and Michael Yourshaw, author of MacHeads, a very clever and challenging "shareware" game. (I put shareware in quotes because Michael's charge for MacHeads is a postcard to him from anywhere.) Both Karen and Michael later demoed their games.

We were privileged at the meeting to be among the first people in the country to see pre-release versions of Wizardry IV, demonstrated by the redoubtable Trebor himself, Robert Woodhead, and Ultima V, demonstrated by His Grace, Lord British. Both games are anxiously anticipated by fans. Each has unique features and new developments.

Wizardry IV will involve a role-reversal; you will be the villain from previous scenarios, Werdna, imprisoned by his foes. You must escape from confinement, gather allies and strength, and fight your way past many of the very heroes and champions developed by players of the three previous scenarios. (These characters have been taken by Sir-Tech from actual player disks.)

Wizardry IV will be more puzzle-oriented than previous Wizardrys. Robert Woodhead let the audience try its hand at solving the first puzzle, getting Werdna, with no weapons or

contd.

tools (or clothes for that matter),out of a room with no windows or doors. Pi members rose to the challenge. Woodhead promises, or threatens, much tougher puzzles ahead, along with mind-bending mazes taking many hours to map. Also, Woodhead revealed that Wizardry V is in development and will be a sharp departure from what has gone before.

As for Ultima V, the Ultima universe continues to be refined by Lord British to an astonishing degree, still within 64K of code. As I hope you can see from the accompanying photograph of an Ultima V screen shown with Lord British' s editor, the formerly squared off edges of Ultima graphics will be rounded and more detailed. Rooms and locations are crammed with detail: mirrors (which reflect characters who move in front of them); clocks with swinging pendulums; beds; bathroom fixtures, etc. The passage of time will be an important factor; at night, characters you are looking for will be found at home rather than at their work, and darkness will fall over the land. Displays of the circles of illumination from a row of lampposts and of the sweeping beam from a lighthouse drew well-deserved applause. Also, look in Ultima V, which will be twice as big as its predecessor, for the possible appearance as a non-player character, of a Pi Gamesig member. He should be easy to spot—after all, how many handsome, dashing, young lawyers can there be in one kingdom?

Jim Synoski, of Microprose, demonstrated Silent Service (Apple II), their World War II submarine warfare simulation, very favorably reviewed last month by Paul Moore who was at the keyboard. Jim was an excellent guide to the many features which make this game realistic and which hold the player's interest. One hint which I overheard was that reliance on the Japanese lack of sophisticated detection systems will not work if your periscope is above the surface.

Ron Wartow, assisted by Rick Bollar, demonstrated two Mindscape games, Balance of Power and The Uninvited (both Macintosh). Both have been praised highly in Journal reviews and Balance of Power, by Chris Crawford, has received substantial press coverage, including an article in the New York Times Magazine, as a sophisticated simulation of world political conflict. When Ron and Rick precipitated global thermonuclear war, the screen went black except for a legend to the effect that there would be no cute graphic of mushroom clouds because "we do not reward failure." On a lighter note, Mindscape's The Uninvited (512K Mac or Mac+) is a brilliant use of the Macintosh interface for a graphic adventure. Complex actions can be achieved entirely by mouse. The (digitized) sound of shattering glass, as Ron hit everything in sight with a battle-axe, was most impressive. The graphics are stunning and the "About The Uninvited" menu option is unique and delightful.

From Electronic Arts, we saw, and heard, Skyfox (Apple II), a jet combat game with spectacular color graphics and great Mockingboard-enhanced sound.The launch routine builds to a crescendo which will wake the neighbors if played through your stereo. Another demo which benefited from the Mockingboard was Origin Systems' Ultima IV, demonstrated by Lord British himself, which has appropriate theme music for its various settings. Also, Robert Woodhead showed MacWizardry, a terrific translation of his original classic. Dave Granite showed Rings of Zilfin (SSI for the Apple II), a fantasy role-playing game with clever graphics. Thomas Johnston showed Flight Simulator for the Apple II and, using the book Forty Great Adventures For Flight Simulator, also recently reviewed by Tom in these pages, was able to fly us through a hangar, a la James Bond, under the Manhattan Bridge, and around the Statue of Liberty. Flight Simulator for the Macintosh was also shown. It has a neat feature not available on the Apple II, letting you watch yourself fly from the perspective of a spotter plane.

Throughout the meeting, things were periodically enlivened by Ron Wartow's gaming trivia contest on the Mac. Correct answers, and sometimes incorrect ones as well, were rewarded with game software prizes, much of it generously donated by our guests, and the rest either review copies or Ron's own donations. Origin Systems had brought copies of Ultima IV, Moebius, and Autoduel, as well as souvenir items from their game packages. Microprose brought one of each of their Apple II programs, including F-15 Strike Eagle, Decision in the Desert, and Silent Service, along with T-shirts, and Sir-Tech donated MacWizardry programs and Wizardry completion certificates signed by Robert Woodhead and his co-author, Andrew Greenberg. By the end of the meeting, over thirty pieces of software and countless ankhs, radiation badges, certificates, and other items had been given away, and many autographs had been signed by our gracious guests. (Not to be outdone, we reciprocated with WAP T-shirts for each of our guests, including one for Dave Albert's new baby.)

Many people from Washington Apple Pi cooperated with GameSig to bring off a memorable meeting which was something of a logistical nightmare. Plaudits must go to Ron Wartow for an immense effort. Also, Mike Ungerman lent his technical expertise unstintingly and kept us more than once from frying the equipment or ourselves. Mike and Bruce Field arranged for the array of projectors and other equipment. This meeting will be hard to top next year.

AGE OF ADVENTURE: A Review
by K. C. Mulcahy

AGE OF ADVENTURE (Electronic Arts, Apple // series with 64K, joystick optional) is a two-game disk, with "Ali Baba and the Forty Thieves" on one side, and "The Return of Heracles" on the other. The games were copyrighted in 1981 and 1983 respectively, so I take it that this is a re-issue. Since I never played the originals, I can't say what changes, if any, have been made.

However, I can say that these versions are fun to play. They should be good party games because a group can gather around the ol' Apple and each person can control a different character or group of characters as they explore the "rooms" and battle the enemies. The games are not simple, yet they are not so difficult that beginner/novice players will feel out of their depth. Also, "danger" in "Ali Baba," "monster speed" in "Heracles" and "message speed" in both are adjustable, which can make the games easier or harder. Random events in

contd.

both games make each replay different. For example, friends and foes show up at different times and places to help or hinder.

I had more fun with "Heracles" than with "Ali Baba," probably due to the fact that the statistician in me enjoyed the scorekeeping feature. If you can score over 9K points out of a 10K maximum, you are awarded the "Wild Olive Leaf Garland." The game is over when the twelve tasks are completed, or all the "hero" characters are dead. "Ali Baba," on the other hand, continues even after the stated mission of rescuing the Princess is accomplished. You may go on and rid the world of all the evil beings. Dead or retired characters can be retrieved to aid in the current fight, so it is just a matter of time until you wipe out the baddies.

The color graphics are as good as most I've seen. The documentation is generally clear, perhaps too complete but mostly helpful. I would have liked seeing the graphic image portrayed along with the printed description of the various characters. Music plays to help you identify locations, characters and monsters. But as a tone deaf saxophonist, I found the music more distracting than helpful. Luckily for me it can be turned off. Games can be saved. That's helpful because you can test alternatives and get back to where you were after the tests are out of the way. Since the games are not in "real time," you won't have to hurry the note-taking and map-making as you move and fight and think about what's next.

Even GAMESIG's preeminent critic, Charles Don Hall, allowed as how these were "good games for the money" ($14.95 list, according to an Electronic Arts representative). I recommend that you buy 'em and try 'em. I think you'll like 'em.

GETTYSBURG: THE TURNING POINT - A Review
by Reid Hutchinson

Have you ever wondered what would have happened if Hood's Division had broken through at the Devil's Den? Or if Pickett's Charge had routed the Union Center at the Clump of Trees instead of reaching the High Water Mark? Well, now is the time to find out. Strategic Simulation's new game of GETTYSBURG: THE TURNING POINT (SSI: Apple // series with 64K) lets you do this and more. Using the highly acclaimed combat system found in its sister game BATTLE OF ANTIETAM, "Gettysburg" recreates three days of fighting that started on the morning of July 1, 1863 in that quiet Pennsylvania town, ending in the evening hours of July 3rd.

You can reenact the three day campaign or each day separately. You can play two-player, solitaire (with the computer taking either side), or sit back and watch the computer play itself. The various options also include a choice of game levels (Basic, Intermediate, and Advanced), hidden or non-hidden units, icons or military symbols for regiments, cavalry and artillery, levels of difficulty, optional cavalry reinforcements, and variable order of appearance. Each unit represents 2 regiments or 3-4 batteries of cannon. Infantry units are rated for weapon type (rifle, musket, pistol, shotgun, carbine, etc.), efficiency, fatigue, morale, ammo points, and melee strength. Artillery units are rated similarly with the unit's cannon being rated (Napoleon, Parrott, Rifled Gun, etc.). A Command Control has been installed in the game with all units making a range check to their appropriate leaders and an adjustment to the fire and melee modifiers. Leaders also have an effect on morale, rally and ammo resupply.

A hearty "Well done!" goes to game designer Chuck Kroegel and his development group on this excellent game. The detail involved shows that a great amount of accurate research was performed and put to its best use. On game playability, look forward to between 11 and 40 hours of computer time, as each game turn represents 1 hour of real time. At the end of each combat phase players are asked if they wish to save the game in progress. The documentation includes a tutorial to familiarize you with the game mechanics.

Also included are a rulebook, an Order of Battle, organizational charts, historical situation maps, and a laminated battlefield map with various tables listed on the back. If you are familiar with BATTLE OF ANTIETAM, there are a few changes here that you might want to glance over; a listing of the major changes is given to enhance playability. The game supports 2 disk drives, and "speed up" boards such as "Speed Demon."

Though the playing time was a bit long, the game system is an accurate simulation of the men and weapons involved in the 1860s, and is quite playable. Rumor has it that another game using the ANTIETAM/GETTYSBURG system is in the works at SSI, based on the battle of Shiloh. My rating of GETTYSBURG: THE TURNING POINT would be a 9 out of 10.

SHANGHAI DEMO DISK: A Review
by Thomas Johnston

I don't even own a Mac, but I had to see this demo because I am a fan of Mah Jongg. Luckily the people at the Software Specialists let me try it out on theirs. "Oh no, another game in the store," said Mary Jane. She was right. When the SHANGHAI play screen came up her co-worker said, "Look at that! It looks like fun."

It is fun. SHANGHAI (Activision, for the Macintosh) is a solitaire game using a set of Mah Jongg tiles. There are 36 different tiles, made up of circles, bamboos, characters, winds, flowers and dragons, with 4 of each tile. It is like playing with four sets of cards mixed together. SHANGHAI stacks up pictures of the 144 Mah Jongg tiles in a vaguely dragon-shaped pyramid, 5 tiles high at the center. The object of the game is to match two tiles, exactly alike, and remove them

contd.

from the pyramid; you remove one pair at a time until all the tiles are removed.

Sounds easy? To play, very easy, learned in a minute. But to succeed, it's a challenging logic puzzle. One tile could be paired with any one of its three matching tiles. But if the tiles are blocked on both sides, or covered, they cannot be taken. The logic puzzle is to decide which tiles to match and which to remove first so that you are not blocking yourself later. I have yet to remove the entire pyramid.

The game is entirely and very easily Mouse run. Simply clicking on the tiles removes them. The pictures are good and just the initial building of the pyramid on the playing screen sparks interest.

Activision sent Washington Apple Pi a demo disk for anyone to copy. It includes just one possible pyramid of tiles. It does not include the game's special play and help features (which I cannot evaluate or comment on since Activision has not yet sent GAMESIG a full review copy). The demo may show up on a WAP disketeria disk. Try it and see for yourself.

Even though I don't have a Mac, several friends and I have been enjoying the game for the last week using our own set of real Mah Jongg tiles. It's fun. For those who have their own set, I would be happy to tell them how to play. May you see the Green Dragon and the 9 of character tiles (Fa and 9 Wan); together they portend completion.

SHARD OF SPRING: A Review
by Charles Don Hall

SHARD OF SPRING (SSI, Apple // series, $40) is a fantasy role-playing game. The goal is to recover the Shard of Spring, which has been stolen by the evil sorceress Siriadne. You control a party of five adventurers, who must explore the land of Ymros and the dungeons beneath it.

Character generation has a very interesting and original feature: in addition to speed, strength, and the rest of the usual character attributes, you can give each character a set of skills. Fighters must be trained in the use of at least one of the four classes of weapons, and may also be given such skills as night vision, hunting, and bargaining. Wizards can be trained in five different categories of spell casting, and can learn to identify items and dispell the undead. The number of skills which a character can have depends on his/her intelligence.

This game has the best magic system that I've ever encountered. In most FRP games, the player winds up never casting anything but fireball spells, and ignoring the spells which weaken or slow monsters. Not so in this game, because of two features: the "monster lore" talent, and the tables in the back of the manual. With monster lore, a character can tell at a glance just how strong, dexterous, and fast a monster is, and the tables will tell you exactly what effect reducing one of these attributes will have. Quoting the manual, "casting a Weakness spell on an ogre may only put him in the realm of human strength, but casting a Chill (reduce dexterity) spell on the already clumsy monster is very effective." There are also numerous spells for making characters faster, stronger, or more dexterous, and these are similarly user-friendly. In addition, given enough power, a wizard can cast a given spell any number of times in a single round. For example, you can cast 10 slowness spells at once, which will slow even the fastest monsters down to a crawl. Whoever designed the magic system in this game deserves a medal.

As for playing the game, scattered around the map are many towns and about a dozen dungeons. Towns are simply menus containing stores, inns, bars where you can pick up hints, and the all-important training guilds that you'll have to find if you want to be promoted past first level. Dungeons are rooms and corridors that are pictured as if you were looking down on them from above. Only a small section of the dungeon is visible at any given time—about seven or eight steps in each direction, if you have a lamp and there aren't any walls or doors in the way. The dungeons vary widely in size. Many of them consist of one corridor and one room, and can be explored in 5 minutes. The rest are 2 or 3 hour propositions, and the last one is a multi-level monstrosity that took me the better part of a week to solve.

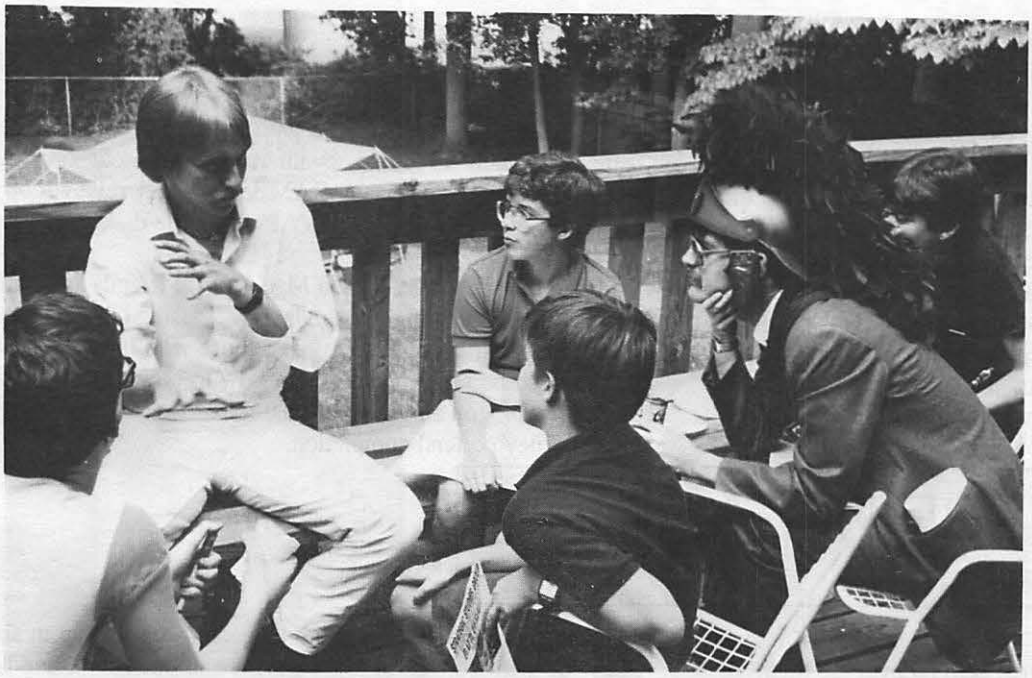
There are quite a few different types of monsters, who display a surprising amount of personality. It isn't mentioned in the documentation, but I think that some monsters are smarter than others. Stupid ones tend to pick one target and aim for it no matter what. It's a lot of fun to watch a giant get stuck in the "Ugh! Kill wizard!" mode. He'll chase a mage—who moves at twice his speed—all around the map, oblivious to the fighters that are hacking away at him and never being attacked themselves. Other monsters can cast spells. The magic system isn't nearly as much fun when the monsters are casting all those great spells on you, instead of vice versa.

When you encounter monsters, you're placed in the middle of a large field. In every round of fighting, each character can perform a sequence of actions which can include moving forward, turning left, right, or back, attacking, using an item, casting a spell, or attempting to dispell the undead. Each action has a fixed point cost, and the number of points available per round depends on the character's speed. I started with a troll fighter with an impressive amount of strength but a low speed, and quickly discovered that my other two fighters were killing all the monsters before he could get anywhere near them.

The ending is *unique* among fantasy role-playing games, in that it doesn't contain a commercial for "SHARD OF SPRING II." Other than that, it's rather anti-climactic, especially compared to the endings of such SSI games as QUESTRON, PHANTASIE II, and RINGS OF ZILFIN.

Now to my complaints. Basically, I found the game too short, and the last dungeon too frustrating. For most of the game, you spend a lot of time wandering around the countryside looking for new towns and dungeons, which are few and far between. There are a lot of monsters, but in this phase of the game, they aren't especially tough. The dungeons are small and have only a few puzzles in them, most of which involve finding halfway-hidden artifacts. It only took me a week and a half of steady playing to get to the last dungeon.

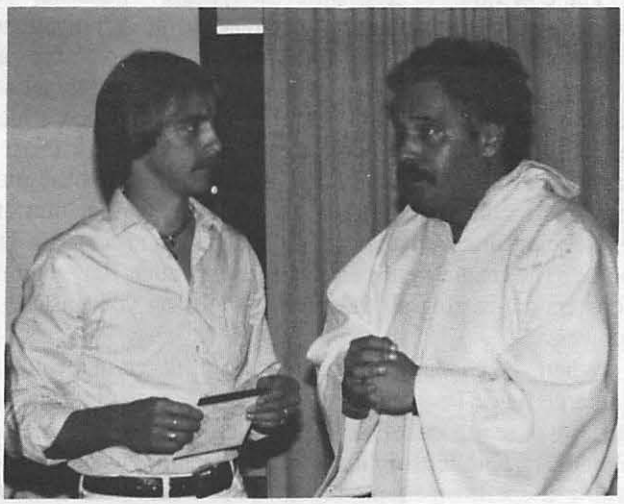
contd. on pg 43



Lord British changes Pi member to legionnaire

Michael Yourshaw (MacHeads)

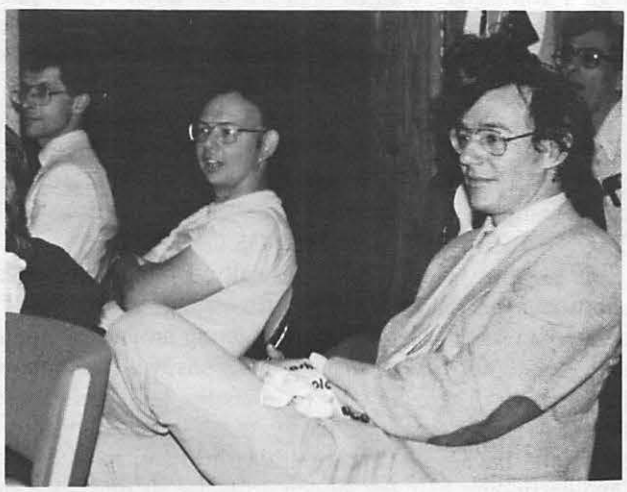
Karen Novak, Mindscape



Unknown monk turns Lord British to stone

Trebor gloats over Pi members' efforts to solve opening puzzle of unreleased Wizardry V.

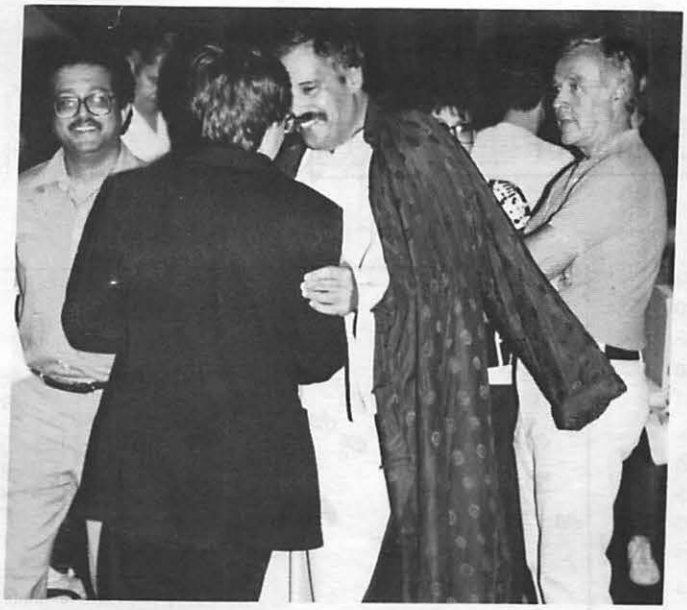
Lynn Bresett, Sir-Tech



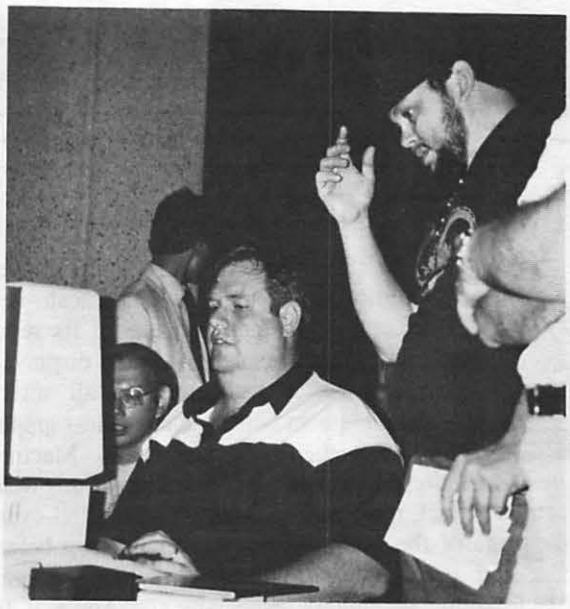
Gary Waszlewski, Electronic Arts
Dave Albert, Origin Systems,
Jim Synoski, Microprose (l. to r.)

Ultima V - prerelease

Gamesig chairman distributes software



Ron Wartow, Gamesig Guru, greets fan, assisted by acolytes Ray Hakim (l) and Frank Potter



Robert Woodhead assists Paul Moore and Jim Synoski (r) with demo

(l. to r.) Karen Rall & Eric jr., Dave Granite, Jim Synoski, Paul Moore, and Wizardry chest

Rick Bollar

Thomas Johnston

Mike Ungerman

LAW OF THE WEST: A Review

by Ray Hakim

How many of you grew up watching the western sagas on TV? Remember how the new sheriff would come to town, befriend the townsfolk and proceed to kill every gunslinger in sight? Now you too can try on your boots in this new party game, "Law of the West" by Accolade (for the Apple // series). You're the sheriff, with a joystick controlled gun and a b-i-g mouth! You can charm the ladies, overwhelm the young punks, and make friends with the guys—or you can get yourself shot. Conversations are carried out by choosing among a series of possible comments (these vary depending on who you are talking to). The character you are conversing with will then answer back, either ending the conversation or starting a new one. Your choice of comments determine the responses made by the townsfolk. Sometimes you will anger a character so much he (or she) will shoot you. Sometimes the person will tell you of robberies in progress, so you can stop them. Sometimes the conversations lead elsewhere. . . . If you don't like a villager, by all means blow 'em away! It will make you feel good. Scoring in this game is divided into several parts: good guys killed, bad guys killed, liasons arranged, and did you survive until sunset.

This is an enjoyable party game: one to laugh at with your friends as you and they try to befriend the school marm, or destroy the truly snotty kid. Alone, however, you can play through most of the alternative conversations available to the sheriff in a few hours while trying to get a high score. Mine is over 5000 points.

Shard of Spring contd. from pg 41

The last dungeon is a nightmare. There are too many monsters that can throw paralysis and death spells at you, and there is too little you can do to prevent it. There are other spells that can reverse these, but they take a lot out of your wizards —assuming the victim wasn't the only wizard capable of casting the proper reversal spell, in which case you're out of luck. Fortunately, you can save the game inside the dungeons. I found myself saving after every encounter, so that I wouldn't have so much backtracking to when I restart. The dungeons have both fixed and wandering monsters, so you have to fight your way upstairs until you're too weak to go on, then teleport out, get healed, go back in, and fight past the wanderers until you get to the next fixed encounters.

Despite these problems, I think this is basically a good game. The last dungeon is irritating, but it *is* possible to get through it, and it hardly counts as a fatal flaw. An expert FRP game player would probably find this game too easy, but I strongly recommend it for novices, and for experts that want to take a two-week vacation from banging their heads against WIZARD'S CROWN and the like.

MacNovice Column

by Ralph J. Begleiter

Mac's Entertainment!

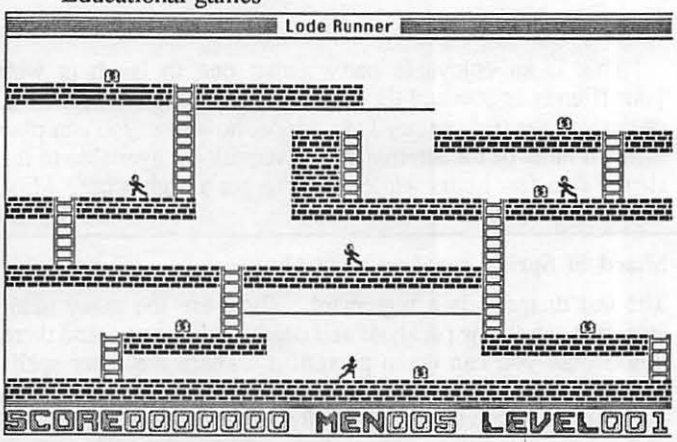
It's true that computers aren't all-work-and-no-play... and the Macintosh is no exception. In fact, because of its revolutionary high-resolution screen display, the Macintosh is well-suited to all sorts of entertainment which requires clear graphics.

For the most part, early Macintosh games and entertainment do not take advantage of this Macintosh feature. In fact, most early Macintosh games fail even to take advantage of the Mac's easy-going relationship between computer and user. Many are mere re-writes of games available for other computers, especially the Apple II line. This makes them heavily dependent on arcane commands and clunky-looking graphics.

For now, the Mac appears to be much more useful as a work machine than a play machine, but before the game- advocates attack too severely my reaching this conclusion, I should say there are a number of excellent games now available for the Mac. And, perhaps more importantly for a Mac Novice, the available games serve an important and useful purpose in training you and your children to use your new computer.

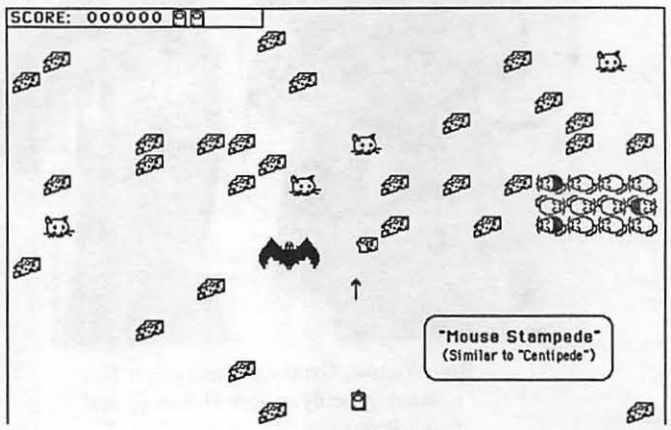
There are three main categories of entertainment available for the Mac:

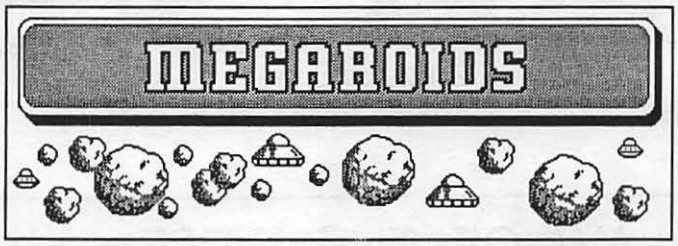
- Arcade-style games
- "Cerebral" games
- Educational games



The arcade-style category is probably the most abundant, especially in the public domain and shareware areas. Early Macintosh programmers have created a wide range of games which all boil down to one thing: shoot-'em-up eye-hand coordination. Many of these are adapted from the popular Atari and Commodore TV computer games (and often have the same names!). They range from "Office Attack" and "Megaroids" to "Mouse Stampede"("Centipede"), "Lode Runner" and "Frogger." The graphics are better than ever, because of the Mac's screen. But the action is the same. And the games quickly become repetitive.

Some of these arcade-style games offer more challenge than others. Lode-Runner, for instance, at least offers the player literally hundreds of different screens and a chance to create his own screens of bricks-and-ladders to maneuver through. "Airborne's" claim to fame is its so-called "digitized" sounds. It's just an ordinary shoot-'em-up game, but it makes your Mac imitate the sounds of helicopters, planes and bombs somewhat realistically.





In the "Educational" category, games such as typing tutors allow players (including very young children) to learn valuable computer skills. In fact, learning to type is probably the single greatest obstacle to children who want to use the Mac. And there are now available some very creative Macintosh touch-typing programs which make learning to type an interesting and challenging game.

Some programmers have recently begun turning their attention to the kind of educational games for which the Apple II became famous. These are essentially reading, math and spelling drills in the guise of games. Because of the Mac's graphics capability, the screen is easier for young children to read than before. And letters, numbers and shapes look like the real thing, instead of the blocky approximations which characterize most other computer screen graphics.

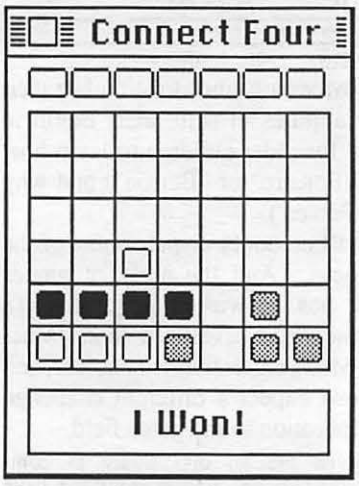
One disadvantage to the Mac's young-child-educational-games is that the screen is not in color. Although color is of little value to adults, it does provide an attraction (and an educational purpose) for young children. For this reason, the full-color features of computers such as the Apple II may offer an advantage over the Mac in the field of games for children.

Before leaving these arcade and educational games, it's worth making the point that they do offer the MacNovice an interesting (and perhaps unintended) attraction: these games allow a novice computer user to hone skills which are critical

contd.

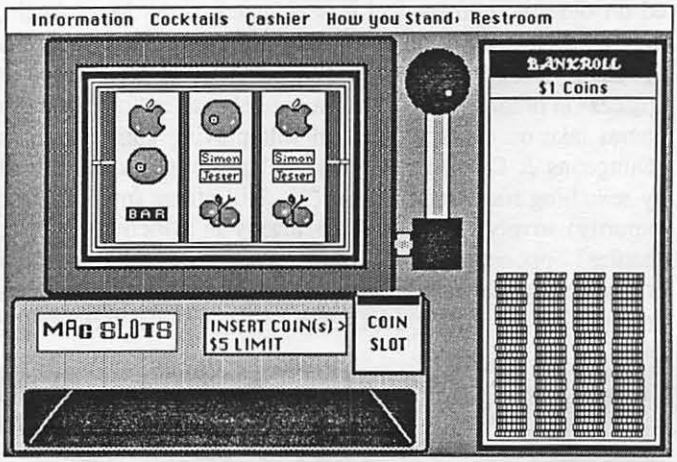
for other Macintosh applications. Some people, for instance, have difficulty using the mouse at first. These arcade-style games require extensive mouse manipulation, and often call for precision in pointing-and-clicking with the mouse. These skills are essential in using graphics programs such as MacPaint, MacDraw, business chart programs and others. Playing a few of these games can increase your adroitness with the mouse, and can familiarize you imaginatively with the basic scheme of menus, commands and maneuvering around the screen which are essential to productive use of the Mac later on.

Probably the most interesting (and most expensive) of the entertainments available for the Macintosh are the "cerebral" games available. And there are scores of them now on the market, to meet almost everyone's interests and fantasies.

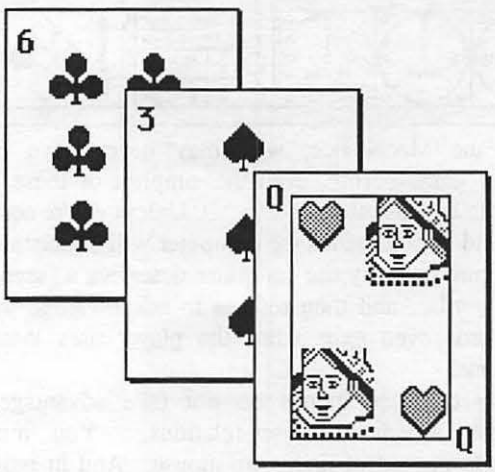


There are familiar "board games" such as "Othello," chess and "Connect Four." These are played exactly like the original board games, except that you play on a screen instead of a board, and, if you're alone, you can play against the computer instead of another human opponent. Again, the Mac's excellent graphics make you feel at home with these games. And the computer does keep track of scores and perform other bureaucratic chores such as setting-up the game. But unless you want to play against the computer (or want to learn the game from the computer), there's really no advantage to playing chess on the Mac.

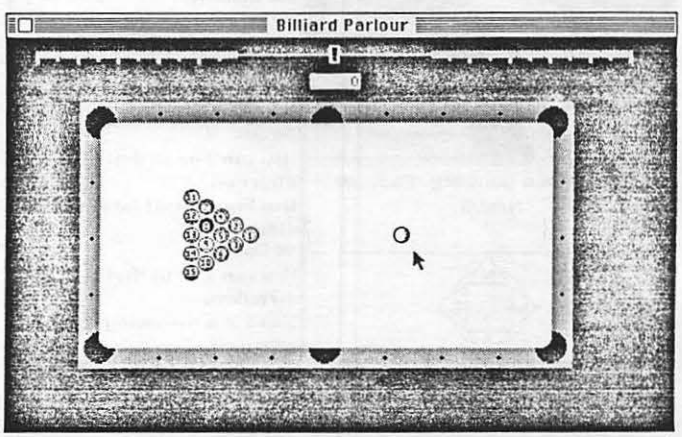
Another category of entertainment includes casino-style games such as solitaire, blackjack, slot machines, and so on. These games were among the first to be developed for the Macintosh, primarily to show off the Mac's graphics and



animation capabilities. In "MacJack," the "dealer" really "shuffles" the cards right on your screen. In "MacSlots" the slot machine really "spins" and the "handle" really springs back when you "release" it with your mouse. In the card games, graphic depictions of the playing cards themselves are outstanding.



In "Hearts," you can choose the skill level of your three (computer) opponents at the "table." These games are fun to play and to watch, though they, too, can become "old" fairly quickly. Their advantage, again, is that you can play alone, against the computer, and that children can learn from the computer to play these games.



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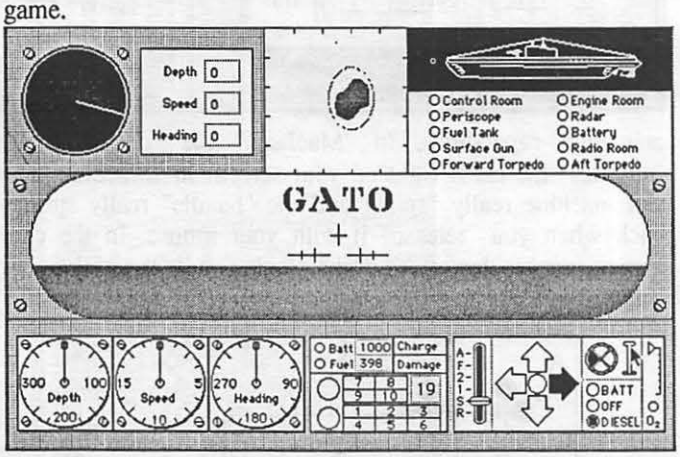
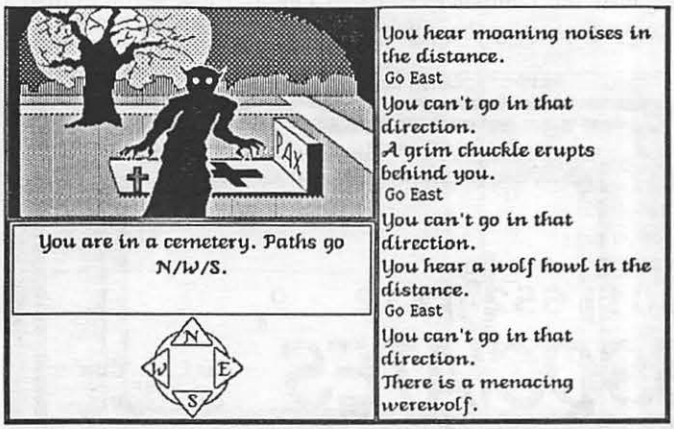
Finally, and certainly not least, there are the "puzzle" games for the Mac. This is a genre of game originally developed on older computers and now adapted to the Mac. Again, they are essentially similar to one another: the basic theme is to "travel" through a computer-generated "maze" of "rooms" or "places" in order to "find" a treasure or character.Some of these games take on characteristics of role-playing games such as "Dungeons & Dragons." Others are "mysteries" to be solved by searching for clues ("Suspect"). Still others (probably the majority) involve multi-layered mazes in which the player "battles" opponents and monsters. The battles are conducted both with wit and with "objects" or "weapons" which the player can "pick up" during the course of his "travels" through the game.



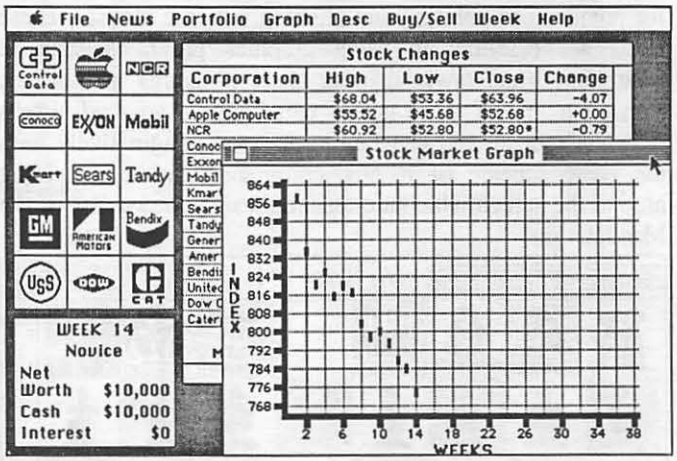
For the MacNovice, who may never have played a computer game before, even the simplest of these "puzzle" games can be frustratingly difficult. Unless you're accustomed to the kind of commands the computer will understand, you'll never figure out why the computer describes a "scene" using certain words... and then refuses to acknowledge that those same words even exist when the player uses them in his instructions!

Many of these games do not take advantage of the Macintosh scheme of user-relations. You must type commands instead of using the mouse. And in most of the games, the graphics are merely copies of blocky pictures originally drawn for less-capable computer screens. (There are some exceptions to this general comment, especially in games recently published, including "Wizardry.")

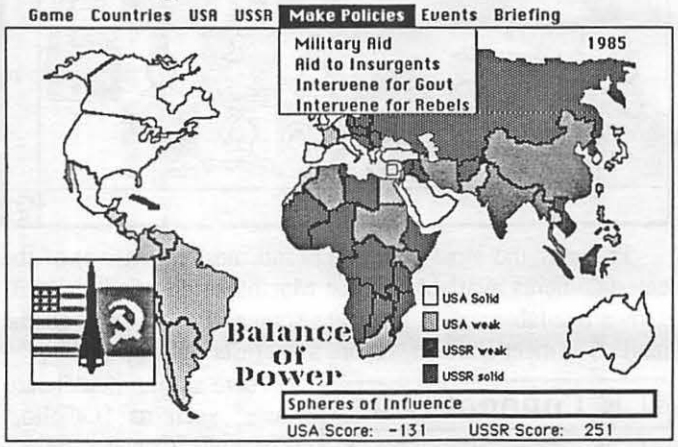
Transylvania



But these "puzzle" games can be addictive. I have spent hours trying to find "Sabrina" in "Transylvania" (one of the simplest of this genre of game!). And they can be fun. (I still can't seem to avoid being arrested as a murderer by the police in "Suspect." And I keep getting robbed by my taxi driver in "Amazon," so I haven't even been able to get to the jungle!)



One fairly new wrinkle on the "puzzle" game is probably the most promising for the Macintosh user of the future. It's the game which simulates real-life situations, challenging the player to develop solutions to real-life problems. There are a series of Wall Street simulations now available for people interested in investing. And there's a game called "Balance of Power" which simulates foreign policy conduct in a cold-war world involving the Soviet Union and the United States.



These games offer MacNovices a chance to stimulate their thinking and challenge their abilities in skill areas useful in everyday life. It's even useful for older children to learn how the stock market works ("Millionaire" or "Barron") and why wars are fought ("Balance of Power").

Computer game experts will no doubt dispute some of the conclusions I've expressed here. And the array of games available for the Mac now has grown so large that it's probable there will be new categories developed soon. MacNovices can benefit from the Mac's entertainment choices, and they're worth trying. But don't expect a different challenge each time. There's a lot of duplication in the game field.

(Ed. Note: Ralph has given me an opportunity to comment on a project I've long wanted to get started but don't have the time for. Wouldn't it be nice for senior citizens in "homes" to be exposed to games on computers and then for them to begin using the computer for more serious purposes. I tried this idea with Ida Rhodes, who was once a foremost computerist, but who had regressed to watching TV. She expressed concern that she was no longer able to function intelligently due to strokes and extended illnesses, but which causes which? How about it, folks? Any takers?)

VIEW FROM THE HILL
by Rich Norling

As I write this month's column, I have just returned from MacWorld Expo in Boston. This column contains some general comments about the show, mentions several of the new software products that were introduced, briefly describes a new book that all Macintosh programmers should buy, and introduces the Apple Programmer's and Developer's Association that was announced on August 14.

First some general impressions of MacWorld Expo. These shows always have a lot of software and hardware products that are being "announced" or "introduced." That does not necessarily mean you can buy the product today. This happens because publishers and manufacturers need to "pre-sell" their products in order to get distributors and dealers to carry the products when they do become available. MacWorld Expo is really a combination of a traditional, dealer-oriented trade show and a retail show aimed at the general public. As long as the two purposes are combined into a single show, you will be tantalized by apparently wonderful products that you cannot buy yet. The corollary, of course, is that you learn a lot more about future products than you can in almost any other industry.

As expected, there were several hard disks for the Macintosh SCSI port, and the beginning of what I think will be a large explosion of alternate large screens and color terminals for the Macintosh. What I expected to see, and did not, were the half-dozen or so word processing applications that are being advertised in the magazines. Only one was at the show, and they had no literature when I got to their booth on the last day. I have been hearing rumors now for almost eleven months that one or another will be a truly great word processor, but I am getting tired of these rumors and would like to see some real products.

MacWorld Expo - Exhibitor's View

I spent almost all three days of MacWorld Expo standing on one spot of floor at Cricket Software's booth, showing previews of my newest application (it draws pictograms, and will probably ship in November). I managed to grab moments for brief forays into neighboring territory to pick up literature or make quick purchases, but did not have time to see full demonstrations of all the new and interesting products being shown.

Standing in one spot for three days has its disadvantages (my legs and feet were hurting by the end of the second day, and I thought my voice might give out), but it also had the advantage that I could see most of the people who were moving from booth to booth. In addition to the usual assemblage of software developers and people from Apple, it seemed to me that there were quite a few friends from Washington who made the trip to Boston. I want to thank everyone who stopped by to chat—I enjoyed seeing you!

New Macintosh Software Products

As best I could tell from my mostly-stationary location, the major new software products announced at MacWorld Expo include dBase Mac from Ashton-Tate, Ragtime from Orange Micro, MouseWorks from Microsoft, Lightspeed Pascal from Think Technologies, and Cricket Draw from Cricket Software.

dBase Mac is a programmable database written specifically for the Macintosh by the developers of dBase III, the best-selling data base on the IBM PC. dBase Mac's program- ming language is somewhat different from the dBase III language, but the file formats are the same. When dBase Mac ships late this year, I expect it will provide formidable competition for OMNIS III, Helix, and Reflex for the Mac (formerly Interlace).

Ragtime is described as an "integrated page processor." The brochure indicates that Ragtime contains page layout, word processing, a spreadsheet, and a forms generator. I wish I had found time to see a full demo of this product. The name Ragtime makes some people think it must be a clone of Jazz, but it is definitely not. If Ragtime is as good as its brochure says, it is a new type of desktop publishing software that deserves to be treated seriously.

Microsoft was showing MouseWorks, or Microsoft Works, which is an integrated package expected to appeal to first-time Macintosh buyers rather than to experienced Macintosh users. It was developed by the same people who developed AppleWorks for the Apple //.

Last spring, Think Technologies captured a lot of attention with Lightspeed C, a very fast C compiler fully compatible with the Macintosh user interface. You may remember that Think is also the developer of the Macintosh Pascal that Apple sells, and that recently became available for the Apple //. At MacWorld Expo they began selling Lightspeed Pascal, a Pascal compiler with features from both Macintosh Pascal and Lightspeed C. I bought one, and will give a more complete report in next month's column after I have had time to use it.

Cricket Software, publisher of StatWorks™ and Cricket Graph, announced Cricket Draw, a drawing program that uses the full power and flexibility of the LaserWriter (I'm not tooting my own horn here, because I was not involved in the development of Cricket Draw). Among the special effects available in Cricket Draw are fountains, starbursts, Bezier curves, grates, gray scales, and any degree of text rotation. Cricket Draw is expected to ship in October or November.

How to Write Macintosh™ Software

If you have done some reading in Inside Macintosh or Steven Chernicoff's Macintosh Revealed and written enough Macintosh code to get your first "system error" message, then you are probably ready to read How to Write Macintosh™ Software by Scott Knaster. The book contains a host of tips that will help you get your programs working, and provides extremely thorough coverage of Macintosh memory management, testing, and debugging techniques.

Scott Knaster is head of Developer Technical Support at Apple Computer, and has been providing support and answering the questions of Macintosh software developers for over two years. In the process, Scott has learned what things about the Macintosh programmers find hard to learn or

contd.

understand. In this book, he provides the background and answers to the most-asked questions.

This book covers some pretty heavy subjects, but it does so in a very light-hearted and entertaining way. It contains more facts than many a textbook, and is better written and more entertaining than some novels. I highly recommend it.

Apple Programmer's and Developer's Association

On the first day of MacWorld Expo, Apple Computer announced the creation of the Apple Programmer's and Developer's Association (APDA, for short). The APDA will serve as a one-stop source for programming languages, development tools, and technical information for Apple computers (both Apple // and Macintosh). An article by Dan Cochran, Apple's Languages and Tools Manager, in the APDA's first catalog, indicates that the APDA will now be the only place to order hard copy and disks that have previously been ordered from several different addresses at Apple Computer.

For a membership fee of $20/year, you will receive a quarterly catalog/newsletter, and the right to order products using a toll-free phone number. Among the Apple products in the first catalog are ProDOS Assembly Tools, Apple // and Macintosh Technical Notes, and Beta test versions of Macintosh Programmer's Workshop (MPW) and MacApp. The catalog also contains a fairly wide selection of languages, utilities, and books from other publishers. The association's initial brochure invites membership of all enthusiasts, educators and students, consultants, and professional programmers and hardware developers.

The APDA has been set up as a division of A.P.P.L.E. Co-Op, the publisher of Call-A.P.P.L.E. magazine, which uses a large computer of unmentionable brand to process orders. You can request a copy of the APDA Membership Agreement and Application by contacting them at the address below.

Apple Programmer's & Developer's Association; 290 SW 43rd Street; Renton, WA 98055 (206) 251-6548

Ashton-Tate; 20101 Hamilton Avenue; Torrance, CA 90502.

Cricket Software, Inc.; 3508 Market St, Suite 206; Philadelphia, PA 19104 (215) 387-7955

Microsoft; 16011 N.E. 36th Way; Redmond, WA 98017

Orange Micro, Inc.; 1400 N. Lakeview Ave.; Anaheim, CA 92807 (714) 779-2772

Think Technologies, Inc.; 420 Bedford Street; Lexington, MA 02173 (617) 863-5595

A NEW SEYBOLD REPORT ON DP

by H. F. Chevalier

The following announcement, excerpted here, appeared in the September 8, 1986 issue (Vol 1, No. 1) of a new Seybold publication, *The Seybold Report on Desktop Publishing.* John Seybold has sent a few sample copies of this first issue to me and I have given them to Bernie Urban for lending to interested members of the Pi.

THE SEYBOLD REPORTS

For sixteen years, users and vendors alike have relied on the *Seybold Report* coverage of electronic publishing systems. Each issue contains one or more feature articles, plus all the latest news:

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Thorough reviews of shows and seminars. The industry is changing so rapidly that every show brings important new developments.

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The Seybold Report on Desktop Publishing will focus on low-cost publishing systems sold through broad distribution channels. The new publication is prepared by the same staff that works on the Publishing systems Report, and follows the same format and approach that have gained the Publishing Systems report so much renown. The SRDP is intended for people who have to know what is happening in this marketplace and what it really means: users who are interested in doing serious publishing with desktop systems, developers and dealers. 12 issues per year: $150 per year (U.S.).

Seybold Publications, Inc., Box 644, Media, PA 19063. (215) 565-2480.

LETTERS TO THE EDITOR

PC NET

Dear Bernie,

I have recently had a BAD experience trying to buy hardware through PC NET. I wanted to inform WAP members of the details in case they are considering buying through this company. I do not know if my experiences are typical of what others may encounter, but my story is sufficiently disconcerting that I want to know from our members if they have had better luck or similar problems. Please ask them to write to me with their good or bad experiences.

I thought this saga, as well as Ralph Begleiter's last month, particularly relevant since the WAP board is about to undertake a survey of members' satisfaction with mail order houses.

After not hearing from PC NET, even though I left two phone messages on their answering machine, I sent the following letter on August 29 to the President of PC Network, 320 West Ohio Street, Chicago, IL 60610. As of this date, 9/10/86, I have received neither a communication nor the equipment ordered and paid for months ago.

Dear Sir or Madam,

I thought you would be interested in the following events which occurred when I tried to make a purchase from your mail order firm. I am sending these comments to the editors of several personal computer related publications in hopes of alerting consumers to the frustrating experience they may encounter.

In late May, 1986 I telephoned the 800 number provided by PC Net to "join" your cooperative and to make purchases. I ordered "The Modem" and accompanying cable and gave a VISA number to charge the order. You promptly charged my account, the bill showing a transaction dated 6/24. The cable was received in early July. In late July I received a post card indicating that the modem would be delayed. The post card indicated I could return the card or pay for a phone call to cancel the order. Since I would have to pack up the cable, and pay to return ship it, going through the necessary steps to obtain a refund for it as well, I elected to wait it out. Had the cable not been shipped earlier, I would have simply cancelled.

The modem finally arrived on the 6th of August, approximately two and a half months after it was ordered and a month and a half after PC Net received payment from VISA. The modem worked for about an hour and then gave up the ghost. I called PC Net and was told that they could replace it quickly. They said that defective returns had the "highest" priority for attention. I returned it immediately, August 8th, to PC Net and asked for a replacement. I called on August 13th and was told they had received the modem and would send out a replacement promptly on Friday the 15th or Monday the 18th.

By August 25th I had heard nothing from PC Net. I tried to call the standard, non 800, customer complaint number on the 25th and 26th. My call was greeted with either a busy signal or a precorded message which put me on hold. After waiting on hold three times for periods from 5 to 10 minutes, I called the free, 800 ordering number. Here I found a human willing to offer me yet another "main number" to dial. I have called this number twice, once on the 26th and once on the 27th. Both times I was greeted by a charming "we are not here, but leave your name and number" answering machine message. I have yet to get a call back from anyone, live or recorded, from PC Net. As of today, the 29th of August, my broken modem has not been returned.

While my experience might be unique, I think consumers should be aware of the possible frustration they will encounter when buying through PC Net.

Caveat Emptor!

Sincerely,
David Morganstein, J.A.F.C.
(Just Another Frustrated Customer)

Foreign Languages on the Mac

Dear Bernie:

Thank you for the information you gave me during our phone conversation a few days ago. About a month ago—right when you were dealing with the monsoons and the subsequent power outrage—I dropped by your place and joined (member number 8860) and picked up a couple of back numbers of your very interesting journal. I've had a 512 Mac for about a year.

I'm particularly interested in foreign languages on the Macintosh, an area I think is extremely exciting and regrettably neglected. I'm one of those strange people who is fascinated with foreign languages, and I actually know a good bit about the representation of the world's languages in print. I'm sending you a discussion of Spanish and Portuguese for a beginning; I plan to systematically move through the languages of western Europe that can be typed using the system fonts, and then continue with whatever's available.

You told me that you'd be interested in a series of articles which I would like to call "Civilization on the Macintosh" though "Foreign Languages on the Macintosh" might be more straightforward. You told me to submit hard copy and a disk, and that's what I've done.

Of course, what I **really** want is review copies of some of the high-priced software: e.g. Word for Japanese, Mousewrite/Achbar for Hebrew, IndiaFonts' new offering for the languages of India, all the weird stuff from Linguist's Software if they're still in business, that sort of thing. You told me that you'd try to make this happen.

Bob Richmond

Macintosh "Vaporware" Advisory

Dear Editor,

This is a follow-up on last month's advisory about a Macintosh program called MultiWrite. Icon Review (Monterey CA) has ceased advertising MultiWrite, apparently because of its unavailability. The developers of the program (MindWork Enterprises) have also withdrawn ads from several major Macintosh publications in recent months. MultiWrite had been scheduled to begin shipping by the time you read this.

Ralph Begleiter

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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.

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REVIEW CORNER

by James M. Burger

MACWORLD BOSTON
dBASE MAC, FLAT MAC & WORKS

MacWorld Boston

It takes another MacWorld to motivate me to pick up the old keyboard and resume my column. Okay, I will admit it—I love MacWorlds. First, it's a chance to see new products and enhanced versions of old products. Second, its an opportunity to see old friends and to make new ones. As at each preceding MacWorld, Boston set attendance records: over 15K attendees. There were 180 exhibits. So many that three days was not enough time to stop at each one.

The good news is that the Macintosh is coming of age. The flip side is the "bad news:" fewer "new, innovative products". (Although, with the open-Mac that may change.) Instead, good old products are made better in new versions (e.g. FileMaker Plus), products from the MS-DOS (IBM) or Apple // world are introduced to the Mac World in superior forms (Ashton•Tate's dBase Mac and Microsoft Works), superior new products are released in traditional fields (TIMaker's WriteNow), and new hardware enhancements (E-Machine's 17" Big Screen and Dyna's FT-100). Yet some exciting new products were announced that do not fit in any of the above categories.

I. Hardware.

Dynamac - the Flat Mac. A new product that generated a lot of excitement was the Dynamac. I almost missed it. Britt Balser and Steve Hull, two principals of the company didn't get the prototype to the show until the last day. Roaming the isles, I ran into the ever affable President of **Affinity Software** (Tempo), Rick Baron. Rick grabbed me and said: "Have you seen the flat Mac?" Rick proceeded to usher me to the far corner of the huge hall. At their modest display Britt and Steve had just set up the Mac I've hungered for. The specifications: 3 1/4" x 13 1/4" x 15 1/4" (small enough to be locked in a desk drawer); a very readable black on yellow, electroluminescent (EL) screen (far superior to liquid crystal and better than gas plasma) with true Mac aspect ratio (i.e. no distortion); 1 Meg. standard RAM, 2-4 Meg. option; 800K internal disk drive; 300/1200 baud internal modem; composite video out port; standard Mac ports; and, optional 20 meg. internal hard disk drive.

Sounds too good to be true. Several notes of caution before you pull out your checkbook: first, although it ran all sorts of Mac software with no problems, it is an engineering prototype. Second, they have not (as of this writing) priced the Dynamac. They have to buy whole Macs to get the motherboard (thus assuring MacPlus compatibility), plus they (and anyone else I know of) are only buying small quantities of EL screens. Therefore, they were estimating a price between $6 and 7,000. For those interested, Dynamac's address is below. You might want to get in line early. They encourage interested folks to send their names and addresses to be notified when production models are available (indicate how much memory, modem, hard drive and battery module (a big battery since EL needs much more power than liquid crystal).

The Big Picture. Another product (and one I would also like, although not as much as the Dynamac) was the Big Picture by **E-Machines.** Big Picture is the opposite of the Dynamac, a 17" hi-resolution (1024 x 808 pixels) black-on-white monitor. Imagine—a complete 8" x 10" Pagemaker document or a full page of a word processor (strange quirk of Word 1.05—it doesn't change the second, normally undisplayed, half of the screen. Thus, if page one is displayed on the Big Picture, all of the first full page is there. But, move the scroll bar down to another page and only the top half changes.) The Big Picture displays a crisp full page picture. A controller board must be clipped on to the Mac's CPU, but portability isn't lost, the normal Mac screen is automatically selected when the Big Picture's cable is disconnected. The price is $1595 before October 31 (this does not include installation of the controller board) and $1995 after that (this does include installation).

Micah Drive. While not truly innovative anymore, SCSI and internal hard drives were making relentless progress towards more capacity and speed, and lower prices. **Micah** announced a 30 Meg. internal drive—Micah Drive 30 AT at $1395 retail. They claim it to be faster "than any other hard disk". At the same time, Micah announced Laserspool software for use with their drives. It permits up to three users to simultaneously spool documents to a single LaserWriter on the AppleTalk network (including an IBM-PC!).

DataFrame XP. Steve Edelman of **SuperMac Technology** announced a 40 Meg. external SCSI drive at $1799. Steve also showed an enhancement to its DataFrame, the XP. It comes without a fan (Steve I-like-my-machines-quiet Jobs would have loved it); it's convection cooled. Also, the XP is claimed to be up to twice as fast as other SCSI drives at $1299 for the 20 Meg. and $1,999 for the 40 Meg. XP. Current DataFrame owners can upgrade to the XP.

FT-100 & MacCharlie. Bill Sadler of **Dayna Communications** (MacCharlie) was there with their new FT-100. This hardware device is a low cost—$595— alternative to transfer MS-DOS files to the Mac environment. Co-Workers using Lotus 1-2-3, for example, can see their spreadsheet files simply and easily transferred to the Mac, and opened and manipulated by Excel. Then, with Dayna's FT-100, you can give them the file back on a 5 1/4" MS-DOS disk in 1-2-3 format. (Although why would they want it back on MS-DOS after seeing the Mac and Excel?) Dayna also lowered the price of their MacCharlie (actually runs MS-DOS programs on the Mac)—$795 for a 256K and one 5 1/4" drive version and $995 for 640K and two drives.

II. Software.

Since all the major product lines are covered, generally

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new software was a variation on the same theme, or a new version of an older product. But, there was still plenty to attract my attention.

dBase Mac. For both product and symbolic importance **Ashton•Tate's** dBase Mac both warmed my Macbiased heart and caught my interest. Ashton•Tate, with its dBase line of MS-DOS products virtually owns the IBM and clone database market (near 85 percent they claim). Thus, Ashton•Tate's entry into the Mac market virtually nails shut the argument that the Mac is not a business machine. (That could be the subject of another column—in a nutshell—the two major pieces of MS-DOS software are: Lotus' 1-2-3 spreadsheet and Ashton•Tate's dBase III. The third—word processing is not dominated by any one company). Microsoft's Excel blows 1-2-3 out of the water (and reads 1-2-3 files), and while Blythe's Omnis 3 is reported to be as good as dBase III, dBase Mac can read dBase ".dbf" MS-DOS files. But, also a quick look at dBase Mac suggests (and Ashton•Tate claims) that it is to dBase III as Excel is to 1-2-3.

Heavy duty relational databases is an area of software that, even on a Mac, leaves me cold. For everyday file management I like, with reservations, **ProVue Development's** OverVUE and **Forethought's** FileMaker. But one look at Omnis 3's substantial manual scared me off (as well as the substantial price) and many nonstandard (read non-Maclike) interfaces.

The 15 minute, excellent demo by Ashton•Tate's lead programmer actually got me excited about a relational database. First and foremost, like another of my favorite programs, **Living Video Text's** More,dBase Mac not only makes extensive use of the Mac interface, it pushes the art to an even higher plain. Its combined use of pop-up menu's within formatting windows and dialogue boxes and user defined radio buttons is unparalleled. Relations are easily established by simply dragging a key field from one file to another. Even I can follow it. dBase Mac appears to be loaded with features; and, like its little MS-DOS brother dBase III, has an advanced programming language for software developers. While it can read dBase III files, dBase Mac cannot, however, read command procedures (like Macros in a spreadsheet) written in dBase III. But, experienced Omnis 3 developers have been quoted as noting a halving of development time with dBase Mac over Omnis 3.

I don't mean to sound down on Omnis 3. It has many adherents. Personally, I hope it and Blythe live long and prosper. There are many Omnis 3 developers; and, at last count, nearly 200 applications developed for the database. Ashton•Tate has a struggle ahead to carve out a substantial share of the Mac market. But, dBase Mac should eliminate the last *rational* excuse for business not to buy Macs.

FileMaker Plus. Speaking of old favorites, Forethought introduced FileMaker Plus, an enhanced version of their file management program. FileMaker is a greater program for creating forms for entering, printing and creating a database with the information filled in the forms. I use it for a number of "firm forms" at my law office. Forethought has added a number of new features which increase the program's usefulness. Included are online help, specifying nonstandard paper sizes for printing on the Imagewriter, the ability to open eight files at once,and file compression to save disk space. Two new features that I appreciate are the ability to open up to eight files at once, and the ability to preview records to see how they will look when printed. The equivalent of macros—scripts—has been added, and automatic date entry in a field. Another handy added feature moves all fields to imput order and also there is a find and replace feature for information in the same field in all records. A number of new layout tools and "gadgets"have been added (an irritating handicap of FileMaker was the lack of tools to speed creation of the form layout), as well as many new math functions, and more keyboard commands.

WriteNow. The third leg of business software is word processing. MacWrite performs yeoman service. It is easy to learn. But it lacks power and speed. Microsoft Word is powerful, but it is slow and has other defects. Rumor in ***InfoWorld*** has it that Microsoft is working on a new version of Word. I sincerely hope so. But, in the meantime, I saw, but have not yet gotten my hands on, a product that appears to combine much of the power of Word and the ease of use of MacWrite—**T|Maker's** WriteNow. Remember the Remington Razor commercial where Victor Kamm the President says: "I liked the razor so much I bought the company"? Well Steve Jobs liked this product so much, he did buy the company. In order to concentrate on his "new machine", I suppose, Jobs turned over marketing of WriteNow to Heide Roizen's T|Maker, who brought us ClickArt Effects, ClickArt and the Clickon Spreadsheet.

WriteNow appears to be very fast. It should be since it was written in assembly language. There was no lag between typing and letters appearing on the screen. True multiple columns, up to four on screen. A very fast, built in 50,000 word spell checker. Like Word, it has headers, footers and auto-numbering footnote. It does pagination on the fly. In the demo, they cut several paragraphs on page 1 of a 50 page document. As quickly as you could pull the scroll box down to page 50, WriteNow had repaginated the entire document. The find and replace is greatly enhanced with not only forward, but backward find and replace, word wrapping within the box and "wild card" searches. Also, only memory limits the number of documents that can be opened on screen. WriteNow does not have, however, a glossary function like Word. Scheduled to be released September 30, it will retail at $175.

Microsoft Works. Both Bill Gates, Chairman of Microsoft and John Sculley of Apple appeared to introduce Microsoft Works. Works is an integrated product, very similar to AppleWorks for the //. Works offers word processing, spreadsheet, database and communications. It was an interesting event, particularly when Stuart Alsop, Jr. put Gates on the spot. Gates, when he introduced Excel, specifically stated that he felt that users would prefer to buy the best standalone products and integrate them with Switcher. Gates' justification for the introduction of Works was one that I find myself agreeing with: (1)" Depth Users" (or as we call them "power users") will still prefer to buy high-powered software with "maximum functionality." (2) "Breadth Users," defined by Gates as novices and general business users, want fast, easy to use programs.

Works is such a program. Also written in 68000 assembly language, it is fast. While none of the individual modules are particularly advanced, I would seriously

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recommend it to the first-time user. For example, a government affairs consultant I know wanted to buy a computer. He wanted to access a legislative database. But, he also wanted to use the computer for list keeping, light letter writing and some simple spreadsheet work. Since he was going to use the machine for some extensive telecommunications, I recommended that he purchase Microphone. But, for the remainder, I could not see recommend that he spend $400-500 on Excel, Word and File (or OverVUE). But, at $295 retail, Works seems to be a reasonable alternative.

Finally, the integration between Work's modules is well done. Apart from the usual cutting and pasting, Works raises the level of clipboard compatibility—it keeps all formats between documents. Also, mail merge between the database and the word processor is simple and useful. Interestingly enough (for those of use waiting for a new version of Word), the word processor does do background pagination, it allows simple drawing (lines, circles and boxes), and allows text and graphics side by side.

MacTEX. On the subject of words, **FTL systems Inc.** introduced a very powerful, impressive "Desktop Typesetting" product: MacTEX. According to John Scull, Apple's Desktop Publishing Marketing Manager: "MacTEX ... transforms the Macintosh into a powerful professional typesetting system that outperforms expensive dedicated systems." FTL has taken a mainframe typesetting language and combined it with the power of Adobe's PostScript. MacTEX has true professional typesetting features including hyphenation, justification, kerning, ligatures (a character consisting of two or more characters joined together such as the œ), automatic pagination, headers, footnotes, and auto generation of index, table of contents and bibliography.

MacTEX is a true publishing tool. You can use the LaserWriter for page proofs and create camera ready copy with a high end Laser (e.g. Linotronics) or typesetter. **Aldus'** PageMaker gives users the power to create newsletters, flyers and brochures. FTL's MacTEX gives the user the power to professionally create a book, magazine, annual report, manual and so on.

MacTEX reads Word, MacWrite and ASCII text files. (Although, we have to wait for an update before it will read the formatting—bold, italics, etc. have to be re-entered in MacTEX. But, single commands will change the style of an entire document, from block to indented paragraphs, single to multicolumn layout, or Arabic to Roman section numbers, etc.). MacTEX has over 1100 built-in commands and macros. MacTEX has a set of standard templates for letters, reports, articles and other types of documents. Also, users can create their own macros combining commands and/or other macros for more power. You can create a library of your own custom set of page or document styles (are you listening Microsoft?).

MacTEX effectively turns the Macintosh into the equivalent of a $50,000 dedicated workstation. Thus, MacTEX's $750 price tag is quite reasonable (updates are free, except for postage and handling). Actually, with the Mac's ability to handle graphics (MacTEX does allow integration of graphics into its documents, although apparently not as easily as Pagemaker), the dedicated workstation is inferior to the Mac. Thus, if you need an extremely high-powered desktop typesetter, it appears that *the* product has arrived.

FullPaint & SuperPaint. On the graphics side it appears that from only MacPaint and MacDraw, we have entered an era of strongly competitive Paint and Draw Programs. **Ann Arbor's** FullPaint, which has been selling for several months now, is far superior to MacPaint. With multiple windows, added features, and full window display it is a significant advancement. Ann Arbor has just announced the new version of FullPaint without copy protection and bundled with ColorPrint. This upgrade will be provided free to registered owners of FullPaint.

Now it appears that we will have the duel of the Paint Products. Charlie Jackson, President of Silicon Press announced SuperPaint. SuperPaint also features object-oriented graphics as well as MacPaint (and FullPaint's) traditional bit mapped graphics. Thus, SuperPaint contains many of MacDraw's features. The program has several nice touches, such as the ability to select ("marquis") just bit-mapped drawings, just object-oriented drawings or both. Also, circles and other objects can be drawn from a center point. Ever notice how hard it is to draw a circle in MacPaint exactly where you want it?

Laser Typefaces and Fontographer 2.0. Last notes on words (or characters). **Adobe Systems** was there with their expanding series of downloadable Laser Typefaces, including Goudy Old Style, Sonata (for music), ITC American Typewriter, etc. Speaking of Laser fonts, **Altsys Corporation** released version 2.0 of Fontographer. The product that allows the user to create his or her own laser fonts has been expanded. Version 2.0 adds the ability to create composite fonts, kerned fonts and other "graphic" fonts and to assign them to the keyboard. Between WriteNow, MacTEX, Full Paint and Fontographer there is no question that Macintosh leads the Desktop Publishing/Typesetting/Document Preparation field.

Strategic Conquest. Of course, I never play games, except Wizardry (thanks Ron Wartow) and Strategic Conquest. As many of you that have read my columns before know—I got hooked on **PBI's** Strategic Conquest. The player challenges the computer which creates armies, navies and air forces. Wil Low, President, of PBI has gone one better. He announced Strategic Conquest //. It has digitized battle sounds; but, more impressively, it can be played between two live players over AppleTalk.

New Products:

HARDWARE -

E-Machines, Inc., 7945 S.W. Mohawk Street, Tualatin, OR 97062. **The Big Picture.** [For special prices and information, see above].

MICAH, Inc., 2330 Marinship Way, Suite lll, Sausalito, CA 94965. **MicahDrive 30 XT.** $1395. External 30 Meg. Drive. **MicahDrive 30 AT.** $1695. Internal 30 Meg. **Micah Drive 60 XT.** $4995. 60 Meg. external with 40-60 Meg. tape backup (depending on Media). **MicahDrive TB 40/60.** $1495. External 40 or 60 meg.

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tape backup. **Micah Laserspool.** $149.95 (single user), $299.95 (multiuser). Print spooler for Apple LaserWriter and other PostScript compatible printers on the AppleTalk network. **MicahTops.** $149 (per Mac), $389 (station). Tops file server software for use with the Micah drives.

Peak Systems, P.O. Box 16104, Austin, Texas 78716. **Plus-20** and **Plus-30.** $1195 and 1295. 20 and 30 meg. hard disk SCSI drives, 1 year warranty.

ProAPP, 10005 Muirlands Suite 0, Irvine, CA 92718. **ProApp 10** and **20.** $795 and $995. 10 and 20 meg. SCSI drive with Imagewriter spooler.

SuperMac Technology, 950 N. Rengstorff Avenue, Mountain View, CA 94043. **DataFrame XP.** $1,299 for 20 Meg. and $1,999.00 for 40 Megs.

SOFTWARE -

Adobe Systems Incorporated, 1870 Embarcadero Rd., Palo Alto, CA 94303. **Typeface Library.** 21 typeface libraries.

Altsys Corporation, 720 Avenue F, Suite 108, Plano, TX 75074. **Fontographer 2.0.** $395.00. [See above].

Ashton•Tate, 20101 Hamiliton Avenue, Torrance, CA 90502. **dBase Mac.** $495. [see above].

Centram systems west, 2372 Ellsworth Ave., Berkeley, CA 94704. **TOPS.** $149 per Mac and $389 per PC. Network software (and card for the IBM-PC) permits multiple hard disks on a network to act as file servers.

FTL systems Inc., 234 Eglinton Avenue East, Suite 205, Toronto, Ontario, Canada M4P1K5. **MacTEX.** $750.

interactive network technologies incorporated, 20 Amy Circle, Waban, MA 02168. **intermail.** From $ 295 (for 3 users) to $899 (for 250 users). "Background" mail server without requiring a dedicated Mac.

Microsoft Corporation, 16011 NE 36th Way, Box 97017, Redmond, WA 98073. **Microsoft Works.** $295.00. [See above].

PBI Software, Inc., 1111 Triton Drive, Suite 201, Foster City, CA 94404. **Strategic Conquest //.** $59.95. [See above].

TIMaker, 1973 Landing Drive, Mountain View, CA 94043. **WriteNow.** $175.00. [See above]. **ClickArt Letters/2.** $49.95. 14 bit-mapped fonts in 44 different sizes plus two display typeface files with many commonly used foreign characters.

Orange Micro, 1400 North Lakeview Avenue, Anaheim, CA 92807. **RagTime.** $395. Integrated page processing program, includes a word processor, spreadsheet and desktop publishing capabilities.

A DEVELOPER'S VIEW... MacExpos
by Jim Lanford

MacExpo at Anaheim California

Since Audri and I were in the LA area, we dropped into the MacExpo held in Anaheim. The upcoming MacFest in Boston overshadowed this show, but there were still a few interesting things to see. Many of the Southern California Mac manufacturers were there, so it was a chance to see their wares in a less crowded atmosphere than at MacFest. We saw some great demos.

Hottest Prototype Hardware:

The LaserServer by DataSpace Corporation is a true Laser Writer print server. It will spool many print jobs and frees up the Mac to do other things. It is not cheap at $2000. Delivery is quoted for December, but they did have a prototype running at the show. DataSpace also makes the Max Print Server Buffer which connects any ImageWriter to AppleTalk.

Most Common Hardware:

It seemed that every other booth was selling a SCSI disk drive for the Macintosh Plus. Many had optional adapters for older Macs. When one product has that many manufacturers there is going to be a shake out. The average price for a 20MB disk at the show was $750.

My advice for bargain disk drive hunters is to get a drive with reliable components from stable manufactures. Then you don't have to worry if the company that put the disk drive controller and power supply in the case goes out of business. You will be able to get it serviced and repaired with off-the-shelf parts.

SCSI controllers from Adaptec, Xebec, and OMTI are safe bets. Disk drives from Seagate, Rodime, MiniScribe, and Fujitsu are good. Rodime and Xebec also make drives with the SCSI controller built in. One manufacturer was selling a drive with the Rodime SCSI drive.

Stay away from CMI disk drives. CMI is the company that made the original IBM-AT drives. (What's the fastest thing about an AT? How fast the hard disk crashes.) They have also been reported to be causing problems in the Leading Edge PC clone.

Software we brought back:

We were able to witness a lot of thorough software demonstrations, ask lots of questions, and try the products ourselves. Our favorites included:

MacSpin: D2 Software, Inc. has a wonderful program called MacSpin. It is a three dimensional graphical data analysis package. Audri will review it from a statistical point of view at a later time.

Micro Planner: Micro Planning Software Limited has a very powerful project manager program. It goes far beyond the capabilities of MacProject in almost every way. Unfortunately Micro Planner is much more expensive than MacProject. We bought it because of the way it manages project resources. If you need a full featured project manager, take a hard look at Micro Planner.

C-Scan: Abaton Technology was showing new software to go with their Scan 300 digitizer. This version is so much better than their original software, that I can now recommend the scanner, even with the bugs in this version of the software. Abaton sent all registered Scan 300 owners C-Scan version 0.82 during the end of July. Our copy was waiting for us when we returned. If you are a registered Scan 300 owner and haven't received yours, call Abaton.

Spellswell: One question I forgot to ask the Greene, Johnson Inc. representative was if this program's name is pronounced "spells-well" or "spell-swell". Whatever it is called, it is my favorite batch spelling checker. It has lots of useful features, and at $59.95 list, it is a great buy.

FlashBack: Mainstay has a very nice HFS Hard disk backup program called FlashBack. It will backup the contents of any or all folders on a hard disk, skip or include applications and allow you to select "Backup only files used in last N days". It seems to take about 1 MegaByte a minute. So a selective backup only takes a few minutes. And it can print a nice graphic representation of your folder nesting.

Misc Topics:

- If you need an additional one megabyte of RAM for your MacPlus, you should look at the MaxPlus by MacMemory. It comes with a quiet piezo electric fan, ram disk and print spooler software. It leaves two memory sockets free for future upgrades.
- Silicon Beach Software was showing SuperPaint, an object (MacDraw) and bitmapped (MacPaint) combined graphics program. It will be released "real soon now". Actually Silicon Beach said that "perhaps (it will be released) in September, but we will not take orders until we have product to ship".
- Ann Arbor Softworks claimed to be working on a 300 dpi version of their wonderful FullPaint program.
- We have a need to scan bar codes in one of our projects, and so we bought a bar code reader from TPS Electronics. It plugs into the Mac between the keyboard and the keyboard port. This makes it compatible with every Macintosh program which accepts keyboard input. There is a version which also scans credit cards.
- The most entertaining Conference session was the *Rantings and Ravings of Jerry Daniels.* What other computer conference session have you been to where the speaker includes "Sex, Drugs, Rock-n-Roll, Consciousness Raising, AmWay, and Macintosh" in one sentence! Jerry is the founder of the Mac Underground. You might want to catch one of his talks if he is at a show that you are attending.
- And finally the Yuppie product of the show was Mouse-Hide by Pilot Enterprises, Inc. Mouse-Hide is a $15.00 piece of leather claimed to be the "Rolls Royce" of mouse pads. And we thought that mouse pads had a high mark-up!

Bigger Screens and More Pixels...

You could see it coming at the Boston MacWorld Expo

Do you want to see an entire 8 1/2 x 11" page on your Macintosh screen? Three different large screen systems were shown last month in Boston: The Radius *Full Page*

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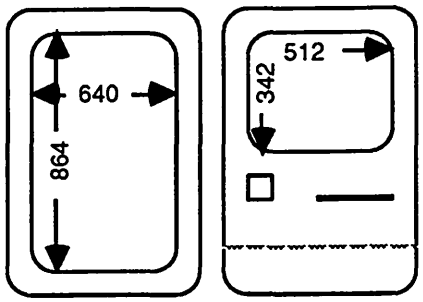
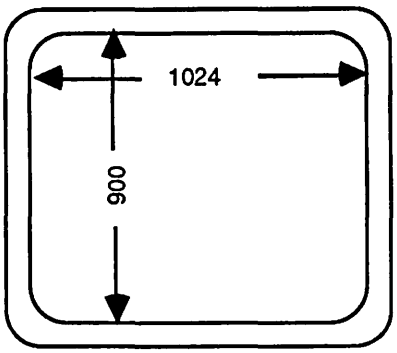
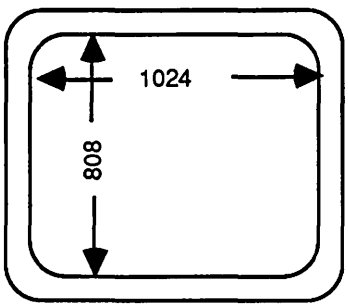
Display™, the Micrographic Images *MegaScreen*™ and the E-Machines *The Big Picture*™. Big screens were definitely the hardware highlight of the MacWorld Expo.



Radius
Full Page Display



Micrographic Images
MegaScreen



E-Machines
The Big Picture

MegaScreen:

The first system I saw at Boston was the MegaScreen. When I walked by the Micrographic Images booth I thought to myself, "Don't they make the large screen adaptors?" But when I glanced at the 19-inch screen, I was floored to see two PageMaker pages side by side. What I was seeing was standard PageMaker running at 1024 by 900 pixels. Since the Macintosh has 512 by 342 pixels, this is quite a difference. The price is $3000, and they have been shipping for one month. If you order one today, delivery is quoted for 45 days.

The MegaScreen output is programmable for sync/blank timing and interlace modes, which means you can also use it as a video source for your home video. It is fully NTSC compatible. Your dealer must install the display controller since there are about sixty jumpers to connect to the Macintosh logic board.

The Big Picture:

At first glance the E-Machines system looked like the MegaScreen. The Big Picture has a 17-inch monitor, with 1024 by 808 pixels and retails for $2100. I saw it running PageMaker, FullPaint, and Excel. To see an 8 1/2 x 11" spreadsheet with a smaller linked sheet and a graph on one large screen is impressive. The problem with The Big Picture is that delivery was quoted at 90 to 120 days. They were having a show special for $1600 (buy now take delivery in December).

The display controller is connected inside the Macintosh with a "clip-on" connector. Levco had the Big Picture running at their booth on a Prodigy 4. The two systems together had the feel of a Sun work station. That configuration would cost about $10,000.

Full Page Display:

Radius Inc. was showing their system by invitation only in a hospitality suite at the Marriott Long Wharf Hotel. We received an invitation because Radius wanted to make sure that DigiBase™ will take full advantage of their Full Page Display (FPD™). The formal introduction will be on September 3rd at the Seybold Desk Top Publishing Seminar in San Francisco.

The FPD has the smallest number horizontal pixels of the three systems with only 640 by 864 pixels and will retail for $1995. However, it had several things going for it. First, it had the sharpest and flattest display. Second, it is about the size of a Mac so it will fit under an airline seat. The hardware was designed by Burrell Smith (who designed the Macintosh and LaserWriter logic boards). The software was designed by Andy Hertzfeld (the author of Switcher, Servant, ThunderScan software, and a member of the original Macintosh design team).

The Radius FPD is best described as a one and one half page system. The first full page is on the FPD screen. The additional one half page is the Mac screen. It is amazing to watch a window being pulled from one display to the other. The Mac can have almost any moveable window on its screen. For example your scrapbook and drawing tools can be on the Mac screen, while the FPD has a full page from PageMaker. Or, the Mac screen could have an Excel chart while the main spread sheet window is on the FPD.

The attention to detail is incredible. The software needed to run the FPD is in ROM. The menu bar was sized from 12 to 16 point type, giving a much better visual ratio to the system. A grow box is added to windows with a title bar for all programs so that it will grow to the entire screen when it is clicked. Option click will move a window to the Mac screen. The software will try to center windows and dialog boxes which were centered on the Mac screen. The cursor can become Andy Hertzfeld's big cursor by simply double clicking in the menu bar. The screen can sit either to the left or the right of the Macintosh. The bit adjustment for window alignment along with all of the above adjustments are user adjustable settings via a special control panel similar to the Mac's control panel. Best of all, they are shipping now.

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The View from Durham

by Chris Klugewicz

Hellooooooo! (The resounding echo indicates the vast distance —okay, so it's only 268 miles—from here to Washington.) I'm up to my armpits in freshmen—it seems dear old Duke has admitted more freshmen than it expected: 400 more, to be exact. Can you say "crowded"? Thought you could.

The mailbox, etc. More electronic mail this month, this time from **Perri Morgan**, who wrote to say hello and commiserate about college life as a senior. (Don't laugh: the Real World is staring all of us seniors right in the face, and it's not a pleasant sight!)

The Mac at Duke. I've begun working at The Chronicle, Duke's daily newspaper (circulation 15,000), in the display advertising department. This summer, The Chronicle bought several Macintosh Pluses and a LaserWriter Plus (as well as a Linotronic 100 typesetter for really high-resolution work) so that we could typeset our own ads instead of having to send them out. So far, it's worked *really* well, and the ads look great. (I got a crash course in Aldus' PageMaker, a program I absolutely LOVE—except for its copy protection, which is of the annoying key-disk sort.) Also, I took a walk past the Duke Bookstore's Computer Center earlier this week and spotted a very large collection of Mac software, which there had not been previously. Looks to me like the Mac is becom- ing more and more acceptable to "hard-core" computer users. (Late-breaking addition: The ENTIRE Chronicle is produced on the Mac! It's written on Mac Pluses, then typeset with the Linotronic! Everything's pasted up, then sent on to the printer—camera ready! And they say the Mac isn't a real business machine!)

More Duke Macintoshing. This summer, all of the Macs (10 in all, plus two LaserWriters) were stolen from our libraries. None of the IBM PCs or AT&T PCs were touched. Is there a message here?

More on Mac Wizardry. Since coming back to school, I've rediscovered Mac Wizardry. (After spending the day trying to arrange pizza parties, Casino Nights, and so forth, it's nice to be able to relax by hacking up a few orcs.) The guy who lives across the hall and I have been descending into the depths several times a day, and most of my characters are eleventh level or above. It's a great game, and I still highly recom- mend it. Just watch out for the High Ninjas.

Speaking of gaming... For those of you unfortunate enough to miss it, the August main meeting was run by our resident gaming expert, Ron Wartow, and it was a blast. Ron brought some of the most famous names in computer gaming (such as Richard Garriot, author of the Ultima series and Robert Woodhead, co-author of the Wizardry series) to Bethesda for an utterly unique meeting. Elsewhere in this issue will be synopses of the meeting, but I'd like to add my own subjective impression: it was by far the best meeting I've attended in a long time. (In fact, I was sorely tempted to buy a //e just to be able to play Ultima V.) Many thanks to Ron for his hard work on this one.

Pascaling on the Mac. Well, thanks to a very generous uncle, I am now the proud owner of MacLanguage Series Pascal (better known as TML Pascal), a native-code Pascal compiler for the Mac from TML Systems. I've done a great deal of hacking since I got it, and I've discovered the following: Though the Mac may be user-friendly, it sure isn't programmer-friendly! (And Apple's reference work, *Inside Macintosh*, is downright user-unfriendly!) I find it a lot of fun, though, mostly because it's such a challenge. And TML's compiler and linker are just plain wonderful! They're both fast, and they generate text files which list the errors, if there are any. (Ed Note: Our author must do crosswork puzzles in ink.) Best of all, TML Pascal is only $99 (more like $69 by mail, and $60 in the Duke Bookstore). If you want to write serious programs on the Mac in Pascal, get TML. (A good introduction to Pascal programming on the Mac, specifically written for TML, is "Exploring the Macintosh in Pascal," a series of articles in DCAF MUG. How do I know they're good? I'm writing 'em: I *should* know!)

Glaring omission. Omitted from my list of great area BBS's was The Overflow Valve, ably SYSOPed by our own Ron Wartow. (The mistake was really one of deadlines, since the O.V. wasn't officially in action when I wrote my last column, but was when it was published.) This board is Mac-mostly, in that all the files (and there are a LOT of files) are Macintosh files, but much of the conversation is at best marginally computer-related. Access to the files section is $20, which is an amazing bargain, considering the cost of downloading one moderate-length file from CompuServe. (654-5812)

Okay, so I lied. I had promised that this month's column would be a lot more substantive than the last, but I look at my calendar, and it's already deadline. Rats and other assorted rodents. As the French say, *c'est la vie*. (As the Californians say, *bummer*.) I'll try again next time.

Last words. This month's recommended reading is *The Name of the Rose* by Umberto Eco. (A great book about murder in a Medieval monastery. (Gracious, what alliteration! My old roommate used to talk like that!) Helpful if you know a little Latin.) Recommended watching: NBC on Thursday night--how can you beat *The Cosby Show, Family Ties, Night Court, Cheers,* and *Hill Street Blues*?

my address:

P.O. Box 22171
Duke Station
Durham, NC 27706

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FREDERICK APPLE CORE

A SLICE OF THE WASHINGTON APPLEPI

OFFICERS & CHAIRMEN

President	- Scott Galbraith
Vice President	- John Lee
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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

October 9 - Program to be announced
November 13 - " "

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

October 28 - Full Paint Demo
November 25 - Use of Resource Editor Demo

SERVANT BY ANDY HERTZFELD

by Lynn R. Trusal (Frederick Apple Core)

One of the highlights of the Macintosh World Expo was the presentation by the "Mac Wiz" himself, Andy Hertzfeld. Andy was responsible for much of the development of the original Macintosh operating system and of late is more known as author of software for Thunderscan and Switcher. Although Andy works on many projects, he has worked most recently on a program called Servant. I first heard rumors about Servant in some magazines and more recently in the Bix section of Byte magazine. The more I read, the more I became fascinated and wanted to learn more. Andy presented that opportunity at the Boston Expo.

Servant has been best described as a combination of the Finder and Switcher but it is that and much more. Servant is still in beta test (version .79) but most of its features are well defined. The first change that Andy made was to forego the scroll bars of most Macintosh applications and use the "hand" that his friend Bill Atkinson (Macpaint author) used in MacPaint. His reasoning was that the "hand" permits simultaneous movement in two planes whereas the scroll bars must be moved independently. It is hard to argue with that logic. In addition, if you give the active window a push with the "hand" it continues to move in that direction at the speed of the push. This feature has been incorporated into other Macintosh programs. It is one of the features that Andy borrowed from other authors; I will discuss the reasoning later.

Along the bottom of each active window (where the scroll bar would be) are 11 small boxes. The first box contains an "eye" icon and permits everything in the window to be visible regardless of its size. The second box contains a small dot which sprouts four arrows in an up, down, left, or right orientation to indicate which direction the "hand" has pushed the contents of the active window. If the icons are out of view, the arrows will show you in which direction. The third through fifth icons allow viewing of the name of the icons, the date they were created, or their size. This information is now accessed by use of the "command I" used to "get information." This method is slightly faster and is consistent with Andy's wish to simplify the Macintosh interface. When you click on icons 6 through 11 they progessively increase the size of the icons in the active window and therefore zoom up or down to satisfy the needs of the user.

If you don't like the background pattern of the screen, you can use a MacPaint picture to replace the textured patterns that Apple has always allowed you to control from the control panel. Andy demonstrated a desktop adorned with his face and and another with that of Einstein. You say that you don't like plain folders? Well, Servant lets you design your own icons and use them on folders or for file icons and even edit them once they're created.

Most people know that Switcher permits the opening of multiple applications and easy switching between them with exchange of data by use of a convertible clip board. Servant incorporates these features but dramatically improves and simplifies the user interface. When Servant is used, it instantly

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takes the place of both Switcher and the Finder in that the desktop is in one window while other windows can hold separate applications. The clipboard always converts its contents for use by all programs but only if it is needed. In other words, you may draw an object in MacDraw, copy it to the clipboard, click on the MacWrite window, and paste the object into MacWrite. Only one window can be "active" at the same time, but all are accessible on the desktop. Switching-only consists of clicking on the desired window in the same way that Full Paint handles up to four painting windows.

Andy stated that he feels the Macintosh has become too complicated for the average user and mentioned the DA/Font mover as an example. To re-simplify the Macintosh, he has incorporated a command called "open resources." This allows the user to see as icons the "resources" contained within a particular program. Fonts and desk accessories are represented by icons. By dragging a particular font or DA icon over the system icon and releasing it, it may be added to the system file. This essentially eliminated the need for the DA/Font mover. If you wish to remove a font, click on the system icon, chose "open resources," and throw the font or DA icon in the trash. By the way, the trash lid now opens. Much more realistic, I would say!

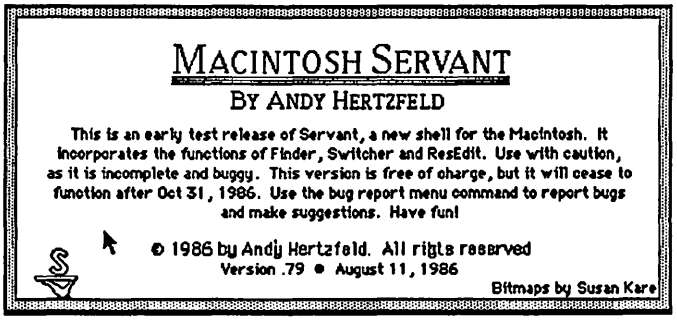
A "rearrange" command replaces the "clean-up" command and the movement of icons is much smoother. In addition, when icons are moved around the desktop, the icon itself moves and not just its outline, as is the case now.

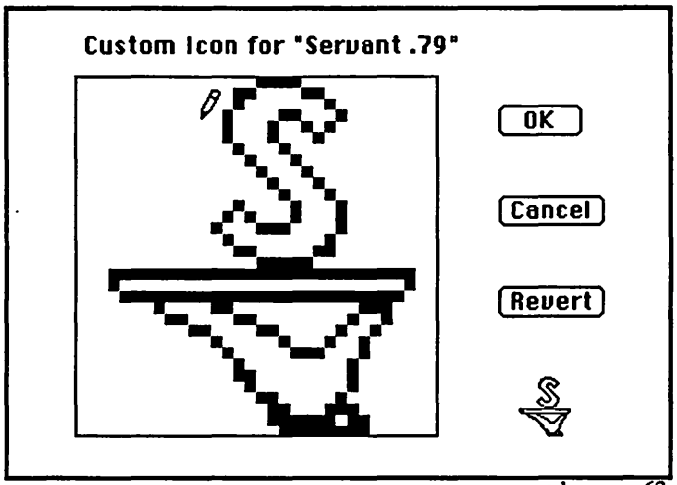
Is that all, you say? Well, not quite! Servant also permits the viewing of "invisible files" and has a speech feature when "Mac-in-Talk" is installed. Therefore, when you choose a file, "Mac-in-Talk" will speak its name. Andy hopes to eliminate the current limitation of 15 installed desk accessories, which may be represented as icons on the desktop and activated without having to be installed in the "system" file. Andy would also like to allow editing of menus by double clicking on menu items. Currently, Servant is 73K which Andy expects to grow to about 110K by the projected October release date. Since Andy was plagued by too many different and buggy versions of Switcher in the public domain, he has installed a self-destruct mechanism in beta test copies of Servant. On Halloween, the Servant icon will be replaced by a pumpkin and will cease to function. By that time, Andy promises to have a new version out and he won't be plagued by bug reports of old versions. Bug reports, you say! Well, Servant even prints its own "bug report and suggestion form" with lines for your name, address, computer configurations, a description of the bug or suggestion, and Andy's mailing address. The guy didn't forget anything!

Although I was impressed by Servant, I was more impressed by Andy. It was clear that he enjoyed this work, that he loves the Macintosh, and that his goal in life is to write better programs and applications and have the users say, "Wow." Although I am sure he is well paid (he is rumored to have gotten $100,000 from Apple for Switcher), money is not his god, and he is truly interested in fostering the use and growth of Macintosh. He was quoted in Byte as saying that if Apple had sold fewer Macintoshes, it would have been a failure and he would have quit writing for it. If they sold many more, it would have been a success and he would have quit writing. Since reality falls somewhere in the middle, he has dedicated himself to continue writing Macintosh applications until the Mac is universally successful. He has sold non-exclusive rights to Apple but the key word is non-exclusive. Apple may use Servant but he retains the right to release it himself as he sees fit. I'm betting on Andy's version.

Andy also discussed his feelings about creative ideas. He feels that "ideas" are free, and, therefore, he has used applications from other Macintosh programs such as the "hand," scrolling windows by use of the hand, and moving watch hands on the "wait" clock face. He feels that although ideas are free, their specific implementation can be protected. He feels that Apple overreacted to use by Digital Research Inc. (DRI) of the GEM interface. Apple felt that this too closely resembled the Macintosh user interface. Apple was reacting to DRI's specific inplementaion of the interface, much of which originally came from Zerox. He also stated that, although he felt that DRI was free to use such ideas as pull-down menus and icons, they largely copied the Macintosh interface in total. He felt they should have at least improved upon it and added creative ideas to it, so he was not totally sympathetic to DRI's position.

Andy is not totally finished incorporating new features in Servant but he promised to have version 1.0 out in October. What should result is a combination of Switcher, the Finder, the DA/Font Mover, the Resource Editor, and the Command-I command. Switcher has now been taken over by Apple and they have accepted the responsibility for it. I hope Andy never gets too tired or the Macintosh too successful for him to cease writing new Macintosh applications.





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MACINTOSH BITS AND BYTES

by Lynn R. Trusal (Frederick Apple Core)

Purpose

The purpose of the "Macintosh Bits and Bytes" column is to inform readers of Macintosh items of interest that do not merit a full article in the Journal. In additon, follow-up information or clarifications of information from previous articles will be included.

DAK/ADC Modem

As far as I can tell, my original article on the ADC modem was responsible for selling 100 or more modems and, therefore, I feel some obligation to keep users aware of noteworthy news concerning the modem.

It came to my attention several months ago that the modem had trouble communicating with certain types of modems but that was all I knew. I had no problem with its usage, as far as I was aware, but I decided to call the DAK technical support line (more on this later) to inquire about the problem. What I found out was that a certain range of early serial number modems had trouble communicating with 2400 baud modems. Because the maximum transmission rate of the ADC modem is 1200 baud, I can only assume the trouble was related to a modem having 2400 baud capability rather than actually communicating at that rate. DAK confirmed that my modem serial number was one of that group and they immediately gave me a return authorization number. In short, DAK immediately replaced the modem with a new modem with the new ROM chip, and it arrived in less than 2 weeks. If you feel you have one of the early modems and wish to check with DAK, call them at 800-272-3200. This is a technical support line for all their products, but be aware that it does not have a computerized answering service. Be prepared for the phone to ring 5 minutes or more until the next available person can pick it up. Remember they are located in California and are probably open until 8:00 P.M. eastern time.

It also appears that the speaker problem mentioned in the July issue of the Journal (p. 52) has been greatly reduced, if not eliminated. Overall, the modem continues to give me excellent service. If anyone is still interested in the modem, call DAK at 800-325-0800. The order number is 4334 and the price is $169 plus $6 for shipping and handling.

HyperDrive 20

In the August Journal (p. 54), I discussed my preliminary experiences with the HyperDrive 20 in a Macintosh Plus. In the article, I said and I quote, "The first time it crashes, you may be able to hear me without the benefit of a Journal article." Did anyone hear me?! ? Several weeks after I finished the article, the drive crashed. Perhaps crashed isn't the correct term. It ceased to function. In the middle of a "save" operation, it locked up and when it was rebooted, it refused to boot from the hard disk. I then put the HyperDrive software in the disk drive and booted it, only to be presented with a dialog box which said, "The HyperDrive has not been formatted properly. The only function you may execute at this point is format." Formatting is the same as erasing the entire hard disk. Luckily, I had backed up my files (not using HyperDrive backup software). I chose "format" and was presented with another dialog box that said, "A hardware timeout error occurred while testing controller logic." If trouble persists, see your dealer." I saw my dealer and the repair necessitated replacement of the controller board. Luckily it was still under warranty and was quickly fixed by the dealer. It is my understanding that the major hardware problem is the controller board. I know of at least six such problems.

After attending the WAP meeting in July, I became aware that there are major problems with using the HyperDrive in a Macintosh Plus. Many appear related to the hierarchial file system (HFS) which is not yet fully supported by the current version of HyperDrive software. I discussed these problems in the August Journal article. Under no circumstances, should you upgrade to the latest versions System and Finder if you are using a HyperDrive in a Macintosh Plus. HyperDrive is shipped with System 3.1 and Finder 5.2 and these should not be replaced with newer versions. Although the manual says you must use these versions and not earlier versions, what they really mean is these and only these versions should be used. Some Hyper-Drives have been reported to crash immediately after System 3.2 and Finder 5.3 were used. UPDATE - Version V3R1 of the HyperDrive software was released at the Boston Mac Expo and should now be available at your local HyperDrive dealer. I will report more later on my experiences with this new HyperDrive software in a Macintosh Plus when I have more hands-on experience.

The Macintosh Buyer's Guide

Most active Macintosh users are aware of "The Macintosh Buyer's Guide" which is published by Redgate Publications. It is published about four times a year at a subscription rate of $14. On the newstand, issues cost $5.00 but they are often given away free by computer stores, and software mail order houses. The latest issue is summer, 1986, and it contains 176 pages of reviews and product descriptions. This particular issue is a special one that contains many articles on the topic of "desktop communication". "The Macintosh Buyer's Guide" is useful because it contains a complete listing of all Macintosh hardware and software products currently on the market or soon to be released (there is some vaporware). Each product description contains the name of the product; the size of Macintosh and accessories needed to use the product; a brief product description; the retail cost; and the name, address and telephone number of the manufacture. If you are in the market for Macintosh software and hardware, the "The Macintosh Buyer's Guide" may prove to be very useful.

ChemDraw

I recently had the opportunity to try a new Macintosh program called ChemDraw which was written by Stewart Rubenstein, 77 Sacramento Street, Somerville, MA 02143, (617)-495-4707. The program is super easy to use and is basically a "chemical drafting system". It contains on-screen help menus and is another Macintosh program that is easy to learn without documentation. It permits the drawing of chemical structures much in the same way that MacDraw and MacDraft draw certain geometric shapes. By that, I mean that

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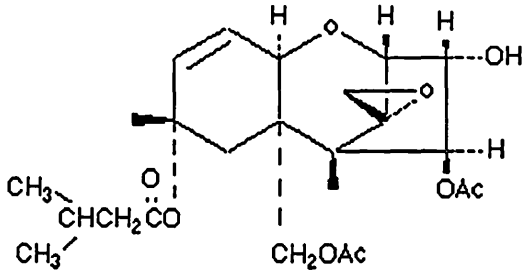
it is an object-oriented drawing program. A pallet on the left side of the screen contains chemical backbones, such as chemical rings structures, arrows, bonds, text options, etc. When chemical side groups are added to the ring structure, numbers are automatically subscripted. If you are a scientist or chemist and have the need for drawing chemical structures, check into ChemDraw. A sample chemical structure which took 15 minutes to draw is shown below.



MacPlus Memory Upgrade

A small advertisment in the August 4, 1986 issue of InfoWorld advertises the "first and only memory upgrades to the Macintosh Plus that use new low power CMOS technology one megabit memory chips." They are advertised as 2 megs expandable to 4 megs with no soldering. You just snap it into place with no modifications of the mother board required. A 2-meg upgrade lists for $399 and the 4-meg $1199. Does that mean you are getting only 1 meg more in the 2 meg upgrade and 3 more in the 4 meg upgrade? The company is Memory Plus and their phone number is 817-465-8165.

Cricket Graph

Cricket Graph is currently undergoing some minor revisions with version 1.1 to be released soon. In addition, they have fixed a bug in the current version 1.0 which was related to the lack of a scrolling capability for one of the standard error menu choices. Cricket Software is replacing existing copies of version 1.0 with this bug fixed, if you send them your original disk. A major revision of the program (version 2.0) is due for release in 1987. What changes or features will be incorporated in this version have not been finalized.

Current users should be aware that standard errors bars are generated from all the numbers in a single column, even if that column contains several sets of separate data. In other words, if column 1 of the data set contains five sets of time points, each of which contains six data points, the generated standard errors will represent all the data in column 1 and not the errors for each time point. In addition, the program does not generate means for these sets of data but instead plots the first of the six data points when the data are graphed. This is a major problem for users who wish to enter raw data that have not been previously manipulated in a spreadsheet for generation of means and standard errors. The user may compensate for this by analyzing data in a spreadsheet for preparing means and standards errors and then putting these values into separate data columns within Cricket Graph. Thus, only the the mean of each time point would be entered in one column and the standard error for that mean in a second column. When the graph is drawn, the user has the option of choosing a value from any column to plot as the standard error. If the last option in the standard error menu is chosen, a correct standard error value will be plotted for each mean. Cricket Software is currently addressing these problems, but we will not know if solutions will be included until version 2.0 is released.

Boston MacWorld EXPO

I was lucky to be able to attend the Boston Macintosh Expo at the Bayside Exposition Center from August 14-16. I have attended numerous scientific meetings but this was the first computer meeting. I must say that I have not enjoyed myself more at a convention than I did during those three days. If you are a Macintosh addict (this addiction can also be expensive!) like myself, you will understand. There were over 180 Macintosh hardware, software, and publishers represented. I will not attempt to go into great detail about what went on during those three days, but I do want to discuss some of the events and products that I feel were most noteworthy.

The Expo consisted of a large exhibit hall and four major meeting rooms where seminars, panel discussions, and help sessions took place. The seminars and help sessions included such topics as, "Meet the programmers", "Hertfeld on Hertzfeld," and the Keynote panel discussion on the topic "Apple, the Macintosh and you: what lies ahead." Jean Louis Gassee, Apple Vice President for product development, gave the keynote address, while David Bunnell (Publisher of MacWorld) chaired the panel discussion. Other panel members were David Winer, (President of Living Videotex), Roy Polk (Ashton Tate), Johnathan Rotenberg (President of Boston Computer Society), Bill Campbell (Apple Executive Vice President for Marketing and Sales), and Bill Gates (Chairman of Microsoft). Each fielded questions from the audience and skillfully avoided any real answers to repeated requests for information on future products. Bill Gates, somewhat aloof, squirmed in his seat as one of the panelists said that the Macintosh operating system has always been better than IBM's. Bill also stated that Microsoft was investing more money and resources in the Macintosh than ever before and hinted at an exciting new product which he did not discuss. He stated that the problem has never been the enthusiasm of existing Macintosh owners for their computer but wishes that this enthusiasm would spread to non-users. Roy Polk of Ashton Tate stated the company has committed itself to Macintosh development and sees the Macintosh as a viable alternative to the IBM PC. He feels the Mac has a good chance of finally penetrating the business market. Overall, the atmosphere was up-beat and you could sense that Macintosh was going to carry the day for Apple and become a second industry standard.

If I had to sum up the exhibits, I would have to say "sensory overload." I grabbed as much product literature as I could get my hands on and came away with over 1 foot of handouts and brochures. MicroSoft demonstrated Microsoft Works, while Ashton Tate premiered their dbase Mac. General Computer was pushing their new FX-20 external SCSI 20 meg hard disk for the Mac ($1,195 list) which was using the new version (V3R1) of hyperdrive software. This software is now installed on my internal HyperDrive and I will report on it in a later article when I have a chance to evaluate it. I hope it corrects the multiple problems that have surfaced with version V2R1 on Macintosh Pluses.

Macintosh vendors were doing a brisk business in Macintosh hardware and software sales and users groups, including the Boston Computer Society. Washington Apple Pi repres-

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entatives were busy "flying the fly" and signing up new members. I joined the Boston Computer Society and I will report my impressions of what they have to offer in a future article.

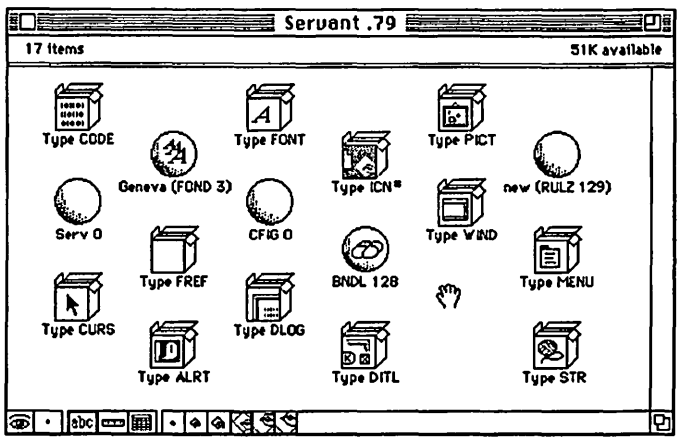
I was impressed with the increasing ability to transfer data between the IBM MS-DOS and the Macintosh. Products like Cauzin Systems softstrips and Dyna MacCharlie, MacCharlie Plus, the new FT-100 and Centrum Systems, TOPS network software, are easing the transition and reducing the number of reasons that Macintosh can't exist side by side in the MS-DOS world.

Although there were additional SCSI hard disks to choose from, perhaps the most interesting of the new hardware products were the large screen monitors which had 1024 x 808 or 900 pixel resolution on 19- and 20- inch screens. Convention goers marveled at seeing full double pages of PageMaker text. These monitors are made by at least three companies and range in price from $1,595 (convention price) to almost $3,000. Since the new expandable Macintosh is rumored to have variously sized screens as options, I will wait and see what Apple comes up with (which should be considerably cheaper in price). The poor man's alternative was offered as the Mac HomeBrew solution by Crunch Software. They sell kits and plans to modify a 12-inch Atari SM 124 monitor for about $200. This does not include the monitor which would add about another $159. The working Atari model at the show looked very good and offered a 12-inch screen compared to the Macintosh's 9 inch.

I not only enjoyed myself but came away feeling that the Macintosh was a sleeping giant about to awaken and assert itself in both the microcomputer world and the business world. Then again I am hardly unbiased!

I would also like to make a special mention and offer congratulations to the Washington Apple Pi. Their booth was small and crowded because they shared their space with four young WAP members and entrepreneurs from the Washington area. None of these individuals would have been able to afford the cost of a booth of their own. I felt it was important to assist them in their attempt to add fresh products and new ideas for the Macintosh. At the same time, they were an advertisement for WAP and WAP shared in the profits. Conventions such as the Macintosh Expo should make some provisions next year for such entrepreneurs.

Servant contd. from pg 60



PASCAL: RETURN TO THE TROUGH

by Robert C. Platt

After a several month absence, the Pascal column returns to its Washington base and to the pages of the WAP Journal. Here are a few quick notes about recent Pascal products. Now that I'm back in town, I look forward to meeting you at the two special interest groups that are devoted to structured programming: the SigMac programmer's group that meets the first Thursday of each month and the PIG which meets the third Thursday of each month. In order to encourage novice Pascal programmers to become involved, the topic for the October 16 PIG meeting will be "Getting Started with Apple Pascal." In addition, PIG is sponsoring a four Saturday introductory tutorial on Pascal to be held in the office on November 8, 22, December 6 and 13. (See the outline elsewhere in this issue and the registration form near the back of the **Journal** for further details.)

Pecan's Pascal & Modula-2

A recent ***InfoWorld*** reports that Borland is preparing a low cost Turbo Pascal for the Macintosh to be shipped Real Soon Now. I doubt that Turbo can capture much of the market given its non-standard I/O and the $99.95 prices that Pecan Software is charging for UCSD Pascal (Version IV) on all of its machines (including Apple // and Macs). That price also applies to MacAdvantage the finder-based Pascal for the Mac and for Volition System's Modula-2 which is now being marketed by Pecan. Modula-2 will ship in September.

When I confirmed this with Pecan, they offered a 25% discount if the PIG could assemble 12 purchasers for any particular product. Therefore, if you are willing to pay $79 for Modula-2 or Pascal on the Mac or the Apple // please call me to participate in the group purchase.

Kyan Pascal version 2.0 ($69.95)

The September **Journal** featured a review of this product by Rob Calhoun. Kyan offers the first ProDOS based Pascal for the Apple //. Note that it conforms to the ISO Pascal standard (as does Instant Pascal and MacPascal) rather than the UCSD standard (as does Apple Pascal and MacAdvantage). Unlike other Pascals on the Apple //, Kyan generates honest to goodness 6502 machine code.

Macintosh Pascal version 2.1 (free?)

Apple dealers are offering free updates to all MacPascal owners. The principal advances of version 2.1 over version 2.0 are larger program sizes and the elimination of the invisible files that required the use of the "Backup/Install" program in version 2.0.

I've had more time to experiment with 2.0. Version 2.0 supports HFS and is distributed on two disks which feature finder 5.2. A second "Pascal Utilities Disk" features several demos as well as a 22-page MacWrite file documenting the changes from 1.0.

One nifty feature of 2.0 is that program files can be saved in three formats: "as program" which is the equivalent of a MacWrite TEXT file; "as object" which expands the file to make loading and launching quicker; and "as application" which allows a program to be distributed and run without a full MacPascal interpreter. Instead of requiring the full 135K interpreter, a run-time PSHELL can be included on the distribution disk. PSHELL takes up only 72K, and does not require a license from Apple.

To test PSHELL, I used the following program:

```
program Untitled;
  var  i : integer;
   s : string;
 begin
  ShowText;
  for i := 1 to 10 do
   writeln(i);
  writeln('Press return to continue');
  readln(s)
 end.
```

This program is more complicated than the typical "count to ten" example because PSHELL assumes that any MacPascal program will take complete responsibility for the user interface. When you double click on a MacPascal program that has been saved "as application," the program is executed without using the **Go** command from the MacPascal Run Menubar. The MenuBar is completely blank and control returns to the finder as soon as the last statement is executed. Because I wanted the Text window visible, I called ShowText. I also added the last writeln and readln to pause before returning to the desktop.

I used this program to also experiment with the new 2.0 output options. The Font Control option on the WIndows menu allows the user to click through the available fonts on the system file and designate which font to use for the program window and the text window. Also the new Preferences option allows text window output from write and writeln's to be duplicated on the printer and/or a TEXT disk file. One related 2.0 improvement is that when you open a 'printer:' file, it will honor any selections that you made in the Chooser desk accessory. (This is helpful if you are using AppleTalk or have a LaserWriter.)

But what impact do the three new formats have on disk space? Here is what happened when I saved the above example and the TextEdit standard example under the three formats:

Program	Normal	Object	Application
TextEdit	13K	17K	18K
Count to 10	509	616	1310

In terms of language changes, the big difference is that the requirement of first defining all const then all types and then all vars has been relaxed. This makes using include files much easier, a la Modula-2 and TML Pascal. By including a *uses ProcPtrs* procedure pointers can be supported and passed to the Mac ROMs. Only 60 procedure pointers can be used in any MacPascal program.

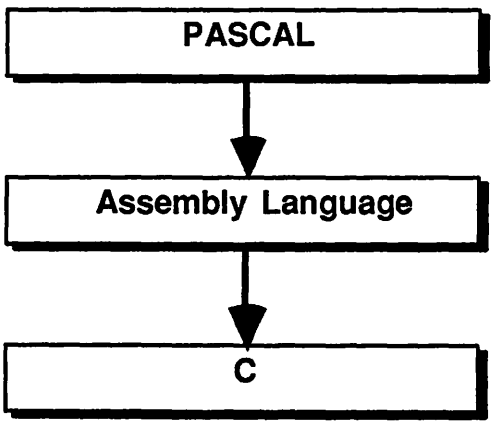
Each MacPascal program now retains its window arrangement and desktop between sessions. Also when execution halts after a run time error, program variables can now be examined. Version 1.0 failed to perform pointer type checking, but now the types of the objects pointed to must match.

Until next month!

MUSEMENTS
by Fred Seelig

Oops...

In my last article I wrote about the natural progression of learning computer languages, from PASCAL to C. I meant to add another block in there. The block diagram ought to look like this:



A knowledge of assembly language programming ought to be picked up after PASCAL and before learning C. It would seem to me to be hard to use C without some knowledge of the internal architecture of a processor like a 68000 microprocessor or a VAX processor board. The best way of acquiring such knowledge is to learn assembly language programming. The first thing that a high level programmer finds out about assembly language is that a large portion of any assembly language coding involves data transfer moves. Move this variable into the C register, then add it to the contents of the A register, and then compare it to the contents of the D register, and jump to a location in memory specified by the F register. Boring stuff, but necessary, on the processor level.

If you are a reader that has learned the C programming language without prior knowledge of assembly language programming I would like to know the amount of 68000 knowledge you needed to program more effectively in C. How incomprehensible was it the first time around? Are there any hackers out there that just instantaneously understood C? How many first-timers out there thought that K & R was a type of cough drop? You can drop me a line either on the WAP bulletin board, 986-8086 (boards 5-8), or write me: 1103 Drake Str., Vienna, VA. 22180.

Oh Jeez, There He Goes Again, Talking about LightSpeedC

On rereading May 1986's Byte issue, I found that the BIX section has the transcript of an interesting interview with Andy Hertzfield, wherein he talks about LightSpeedC:

"Think Technologies has an 'incredible' C compiler which they are supposed to be shipping in March. It integrates perfectly with the Macintosh philosophy and interface, produces excellent native code, and it's very, very fast!"

There, now do you believe me? Do yourself a favor and buy a copy.

A Big European Corporate Sale

Plessey has signed an agreement with Apple for a supply of at least 6000 Macintoshes. These will be for use by its employees, and for sale as value added equipment. This is believed to be Apple's largest overseas sale. The Macintoshes will be used primarily in Plessey's engineering departments. No word on how Plessey will enhance the value of the Macs. Plessey is a U.K.-based electronics firm. *[Electronic News, August 4, 1986]*

The Apple University Consortium

The Apple University Consortium is a consortium of universities which receive significant discounts for Apple hardware and software. Schools include the University of Oregon, Drexel University, Boston College, University of California, Wooster College, Stanford University, Dartmouth College, University of Chicago, Notre Dame, the University of Rochester, Texas Tech University, Brown University, Wayne State University, Humboldt State University, Rice University, Swarthmore College, Cornell University, University of Michigan, California Polytechnical State University, Washington University, Reed College, University of Texas at Austin, Carnegie-Mellon, and Princeton University. I'm sure there are more here in the United States, but I have only heard of these as being members. Foreign universities are in the AUC, too: in Australia there is the University of Melbourne (Melbourne, Australia), Australian National University, Wollongong University, University of Australia, University of Western Australia, Western Australian Institute of Technology (WAIT), University of Adelaide, NSW Institute of Technology, Australian National Univeristy (ANUTECH), Sydney University, and New South Wales Institute of Technology, and in Canada there is the University of Montreal, University of Toronto, York University, University of Alberta, University of Manitoba, University of British Columbia, Simon Fraser University, L'Universite du Quebec A Montreal, McGill University, University of Calgary, University of Victoria, and Concordia University.

Carnegie-Mellon University (CMU) is perhaps the most influential university in the computing sciences area. It is one of only a handful of universities to be designated as a Supercomputing Center. For Apple to include Carnegie Mellon in its consortium is a significant coup. Future computer hardware and software designers pass through its ranks and become influential computer designers of the future. This may benefit us all in the long run, especially if we see future computers designed with as friendly a human interface as the Mac has.

Wheels for the Mind

Wheels for the Mind, or WFTM, is the official publication of the Apple University Consortium. Right now I'm borrowing Spass Stoiantschewsky's copy. He's an EE graduate student at RPI. I hope he'll forget it here when he returns to school.

It shows how much software is being developed for the Mac at universities throughout the entire country. The software that is being developed is so visually oriented. This is especially appealing to those of us who read the Sunday

contd.

funnies before anything else.

An example is Smallgol. Profs Thomas Standish and Anil S. Bajaj of UC Irvine's Computer Science Department wrote a cute program called Smallgol that teaches how to write minicompilers in a compiler class. Now I would rate compiler writing right down there with root canals and prefrontal lobotomies. But their program looks so nice that even I would like to try my hand at creating a compiler.

And I see that Nobel Prize winner and physics professor Blas Cabrera, of Stanford University, is developing a program that's called, for now, "Physics Simulation." The description of the project is:

A series of simulations (based on rapid animation) have been devised for the Macintosh to enable students to acquire an intuitive but accurate understanding of physical phenomena by exploring simulated environments without inappropriate or tedious calculations. The programs include the following topics: atomic theory, diffraction, electrostatics, harmonic motion, magnetism, monopoles, orbital physics, projectile motion, quantum mechanics, radiation, and special relativity.

There's a screen dump of the program showing a picture of the electron distribution around a hydrogen atom nucleus. You can change the quantum numbers (n, l, and m) for the plot by pushing the appropriate radio buttons and see the electron cloud change according to its probability of occurrence around the nucleus. Sure wish I had this program when I was taking Star Trek physics! Of course I'm going to wheedle and beg for a copy, so Dr. Ogers and I can learn all there is to know about the pi shells of an electron. "Dear Dr. Cabrera, I have been a fan of your for many years..."

There are descriptions of many other projects of an ongoing nature. You can't buy a copy of WFTM, though. Only students and faculty members at AUC schools can buy them. If you happen not to be in either category, but still want to see a copy, befriend a college student, ply him with strong beverages, and then ask to borrow his copy of WFTM. Or read "Wheels for the Mind," by Jeffrey S. Young, MacWorld, October, 1985, pp. 120-125.

The IBM PC AT

Jerry Pournelle was right. The Mac is too slow. A while ago Mr. Pournelle wrote in BYTE magazine that he liked the Mac's user interface but that it was too slow. There is indeed a price to be paid for a machine being graphically-oriented, and that is speed. He concluded that while the Macintosh is an interesting machine, and he really hoped it would succeed, that it was not a real workhorse computer that was destined to be used by millions of people to do all of their work on. His column resulted in an avalanche of mail protesting his conclusions.

The company with which I am employed has an embarrassing abundance of computing power. Just in my office there exists a Macintosh (mine), an IBM PC AT, and a C. Itoh terminal connected to a VAX-11/785. The VAX in turn is a part of a computer network linking several VAXes in San Diego, Germantown, MD, and Boston where the other portions of the company exist. There is a terminal on every engineer's and manager's desk. The word processing department uses Wang WP equipment. I mention this only because I have had firsthand experience comparing, on a daily basis, the relative speeds of execution of a Mac, an AT, and a VAX minicomputer.

I found myself in the uncomfortable position of having to use an IBM PC AT for some simulation work. It's a darned nice machine, I'll have to admit. It's fast. I could move between directories almost instantaneously. Waiting for the hard disk to retrieve a document never took long. The AT behaved as if I had a VAX all to myself. After using an AT I could appreciate what Jerry Pournelle said about Macs. They *are* slow.

The New Apple Machine

Apple is going to release a new machine in January. It will, according to most well-heeled sources, have a 17" diagonal color monitor with an image comprised of about a million pixels. That's about the same resolution as the Macs have, on a pixel per square inch basis. (You can do the calculations yourself to see that this is true. Allow 8 bits per pixel for 256 shades per color. The present Mac screen is roughly 4.25" x 6.875" and has about 750 pixels per square inch. Assume that the new Apple machine will have the same aspect ratio for the active screen image and crank thru the numbers.) It will be driven by a 68020 32-bit microprocessor operating at 16.67 MHz. It will have a numerical coprocessor. It will be MS-DOS compatible. I have not heard if it will have an internal hard disk but for the price range ($3000-5000) it will probably have a 20 or 30 Mbyte HD. It will be an open machine, with slots for extra cards. And it will most assuredly not be portable any more. It will be a Serious Machine for those nervous executives that need to surround themselves with Serious Machines.

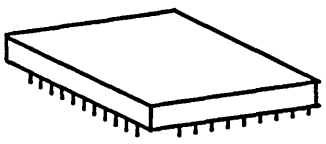
Apple, with the introduction of its new machine, will finally eclipse the IBM PC AT's performance. At least we hope it will.

The 68020 microprocessor

It behooves us to learn a little bit about the fantastic microprocessor that will be at the heart of the new Apple machine. The 68020 has specs that will make even the most hardened hardware wizards weep.

The 68020 is a 114-pin chip. (The 68000, by contrast, has only 64 pins.) It's 1.36 by 1.36 inches in size. It runs on 5V DC. It dissipates 1.75 Watts of heat. That's quite a bit of heat dissipated by one package. (Does this mean there will be a fan in the new computer? Probably.) The package is a pin-grid array. Pins come out the bottom of the package, not out the side like they do with the 68000.

It is a 32 bit machine, that is, it has 32 bit internal registers for address and data, and it has 32 address pins capable of directly addressing 4 gigabytes (4.29 billion bytes) of memory locations. That, boys and girls, is a lot of memory. We're talking compact laser disc, here. I think that this is more than all the atoms in the known universe, even. It also has another 32 pins for the 32-bit bus that connects it to the memory chips and to coprocessors.



The Motorola 68020 data book lists the following features of the 68020:

- 16 32-bit general-purpose data and address registers.
- 2 32-bit supervisor stack pointers.
- A 32-bit program counter.

contd.

- 5 general purpose control registers.
- Two speeds, a 12 and a 16 MHz version [Motorola is sampling 20 and 25 MHz versions as you are reading this.]
- 18 addressing modes.
- ° Memory mapped I/O.
- Coprocessor interface and complete floating-point support via the 68881 numerical coprocessor.
- ° On-chip instruction cache, with three-stage instruction pipeline.
- Seven data types: bit, bit field (field of consecutive bits, 1-32 bitsl ong), BCD digits (packed 2 digits/byte, unpacked:1 digit/byte), byte integers (8 bits), word integers (16 bits long), long word integers(32 bits), and quad word (64 bits).

But that's not all. The 4 GByte memory address scheme can accommodate virtual memory. This enables the computer to use disk space as if it were slow RAM memory. This virtual memory feature is what has made the VAX mini-computers so popular, since they use VM also. It has on-chip cache memory capable of holding 64 long-word entries. It has a 3-stage instruction pipeline, that takes the next three instructions and sticks them into an on-chip queue. The instructions are then available for immediate execution, reducing the amount of time it takes to wait for an instruction fetch.

The most interesting capability it has is to act as a virtual machine. Near as I can figure it, that means that it will operate under a host operating system (like the Apple Mac OS) but will allow emulation of another OS, like Unix or MS-DOS. This ought to be extremely interesting to software developers. As the manual says:

> A typical use for a virtual machine system is the development of software, such as an operating system, for a new machine also under development and not yet available for programming use. In such a system, a governing operating system emulates the hardware of the prototyped system and allows the new operating system to be executed and debugged as though it were running on the new hardware.

Conclusion: The 68020 processor has capabilities usually found in minicomputers. Its full rich instruction set and its speed will make the new Apple machine blazingly fast.

The 68881 numerical coprocessor

To go along with the 68020 processor, Motorola has finally unveiled its long-awaited 68881 numerical coprocessor. And what a device it is! By way of a complexity comparison, Motorola's data book for the 68881 is as fat as the manual for the 68020. The 68881 will perform the following operations:

- square root
- absolute value
- sine
- arc sine
- cosine
- arc cosine
- tangent
- arc tangent
- simultaneous sine and cosine
- hyperbolic sine
- hyperbolic cosine
- hyperbolic tangent
- $\log_{10}$
- 10^X
- $\log_2$
- 2^X
- ln [natural log]
- e^X
- ln (x+1)
- e^X-1
- Add
- Subtract
- Multiply
- Divide
- Single precision multiply
- Single precision divide
- Compare
- Integer part
- Integer part (truncated)
- Modulo remainder
- IEEE remainder
- Scale Exponent

The 68881 coprocessor operates on the following data formats:

- Byte Integer (B) (8 bits)
- Word Integer (W) (16 bits)
- Long Word Integer (L) (32 bits)
- Single Precision Real (S) (32 bits)
- Double Precision Real (D) (63 bits)
- Extended Precision Real (X) (95 bits)
- Packed Decimal String Real (P) (95 bits)

To give you an example of the construct of a real number representation inside the 68881, the X extended precision real, or X type, has a 64 bit mantissa, a 15-bit exponent, a bit for sign, and the rest of the bits are to denote a zero. This construct is defined in the IEEE floating point standard representation of a number. The Motorola 68881 numerical coprocessor is the only chip on the market that is in full compliance with the IEEE standard. The range of these real numbers is overwhelming: The "maximum positive normalized number" is 6×10^{4931}. The "minimum positive denormalized number" that can be represented with the X type is 8×10^{-4933}. This gives an idea of the graininess or precision of computations that use the X type on the 68881.

The Motorola 68881 data book lists the following features of the 68881:

- Eight general purpose floating point data registers, each supporting a full 80-bit extended precision real data format (64-bit mantissa plus a sign bit, and a signed 15-bit exponent).
- A 67-bit arithmetic unit to allow very fast calculations, with intermediate precision greater than the extended precision format.
- A 67-bit barrel shifter for high speed operations such as normalizing.
- Support such functions as the trigonometric and hyper- bolic functions and their inverses.
- 22 constants in the on-chip ROM, such as pi, e and powers of 10.
- Virtual memory/machine operations.
- Efficient mechanisms for procedure calls, context switching, and interrupt handling.
- Fully concurrent instruction execution with the main processor.
- Can use an 8, 16, or 32-bit bus.

Processor Addenda

There's something that every MacDraw user will recognize upon looking at the MC68881's data book: its figures are obviously done using MacDraw on a Macintosh printing out on a LaserWriter. How's this for a nice recursive relationship: Motorola builds a chip, the 68000 microprocessor, that Apple incorporates into its Macintosh computer, that in turn is used within Motorola to write a data book for its next-generation line of Motorola processors, that will be, in turn, be incorporated into Apple's next-generation computing machines... It

contd.

reminds me of M.C. Escher's famous drawing of two hands emerging from a piece of paper, drawing each other.

Both the MC68020 and the 68881 processors are being released in sample quantities now. They are scheduled to go into full production in the fourth quarter this year. Prices for quantities of 100 or more for the processors are shown below:

Processing Speed [MHz]	Processor Price ($) 68020	68881
12.5	174.	132.
16.67	311.	194.
20	579.	568.
25	699.	---

It's no wonder that the new Macintosh-type machine, to be released in the spring of 1987, will cost from $3000-$5000. There is a lot of investment just going into buying the microprocessors!

Graphics Coprocessors

Nah, I'll talk about them some other time. Other coprocessor types, too.

Macintosh PASCAL

Macintosh PASCAL is being used at Cornell University's introductory programming class. The computer science class, CS100, has an attendance of about 800 students. It is usually taught to entering freshmen who learn the rudiments of programming. A Macintosh with a video port is used by the instructor in front of the lecture hall, and the instructor can actually write short sections of code while the class watches on large screen projections at higher places within the lecture hall. Macintosh PASCAL was chosen for its ease of use. Errors in the syntax of the code are immediately trapped by the context sensitive editor. The Observe window in combination with Stop sign breakpoints is used to show the class how variables are changing within a program or subroutine. This is especially handy for teaching hard-to-show algorithms such as bubble sorts, and data structures such as pointer-type variables and linked lists.

Students buy a MacPASCAL diskette for $35 (list price for MacPASCAL is $100), but the price doesn't include the technical manuals. As a result, most students don't know the full features of MacPASCAL, especially the built-in graphics and sound driver functions. Thank you Mindy Schretter for passing this on to me.

MicroHouse

MicroHouse is a computer software/peripherals company with a difference. Unlike Icon Review or MacConnection, whose primary customers are individuals, MicroHouse sells almost exclusively to Fortune 500 corporations. They don't advertise. The prices of some items are just great for some items. The August/September special, for example, on Business FileVision is $209!!! THe BF list price is $395. That's a healthy discount.

As a rule MicroHouse does not deal with individuals. However, Robin Eidle, the very nice salesperson who has called frequently, has extended MicroHouse's sales prices to members of the Washington Apple Pi. You can get a catalog from her by writing her or calling her at: MicroHouse, Inc., 4379 William Penn Highway, Bethlehem, PA 18017. (800) 523-9511, (215)868-8219 in PA.

It would make her life easier if WAP would do group purchases thru her (are you listening, Rich Wasserstrom?), but she will take individual orders too. Let's make sure, though, that all of our checks can clear the bank, to keep the good name of the Washington Apple Pi among the software sellers Out There, and especially to the good people at MicroHouse.

I got interested in MicroHouse when Robin called me about getting APL for my work. She had never heard of PortaAPL, a version of APL written for the Macintosh, and, it turns out, also for the VAX and the IBM. Scientific Timesharing Software Corp., or STSC, of Rockville, MD, for example, only has a version out for the IBM and for mainframe IBM machines, but not for the Macintosh. Robin said that MicroHouse did not currently offer PortaAPL on their list of available software. The list price of PortaAPL was something like $300, enough that most program managers begin to think about how to justify such a cost. Robin called back the next day. MicroHouse could sell PortaAPL for $202 (Mac version), and even more intriguing, could also sell a VAX version with a list price of $3000 for $2500! The best of both worlds was here. Software development on the Mac at home, and then the fast performance of the VAX at work.

PortaAPL

APL stands for A Programming Language. APL is one of the most bizarre looking languages around. It is a "scientific" language in that it is intended to be used by software developers well grounded in, at the very least, linear algebra. A cursory knowledge of matrix algebra would help even more in the understanding of some of the more powerful instructions available in APL. In the hands of an engineer with a strong mathematics background, an APL program can quickly be written in an amazingly short amount of time.

I work with an APL simulation program at work, and I have formed a love/hate relationship with the language. Because it runs interactively programming and debugging is a snap. Writing code to perform complex mathematical functions is wonderfully easy. Manipulating a database is a joy, not a chore. But input/output routines drive me nuts. And there are no nice ways of doing simple If..Then...Else... or Do While... loops. The STSC version of APL works beautifully on the IBM PC AT. However, since the program runs interactively, it runs slowly. Many have been the nights that I have wished that the APL program could be shuttled to the VAX and run there.

Complaints aside, I still wished that I had a copy of APL to run on the Macintosh, that would enable me to write a program that could call graphical ToolBox operations easily. I would also hope to use the Mac 'environment' with windows and menus to write programs quickly, like with MacPASCAL. My prayers have been answered. PortaAPL is here.

PortaAPL has been getting outstanding reviews. One example has been by John Baker, who in the June, 1986 issue of Byte, wrote:

"For the last two weeks I have enjoyed the immensely rewarding experience of working (day and night) on what may be the best "power user" problem-solving tool running on the Macintosh today.

I am speaking about version 3.0a of PortaAPL. The first

contd.

two versions of this product, 2.0 and 2.1, were very satisfying pieces of software. The latest release pushes PortaAPL into the front line of top-quality APL systems. In my opinion PortaAPL is the best APL system buy on the market today. It compares very favorable in all respects to STSC's APL*PLUS, the best MS-DOS APL.

At this point you may wonder who I am and what makes my opinion about APL systems worth anything. I run a small successful APL consulting firm in Edmonton, Alberta, Canada... My major clients are large mainframne APL shops in private industry, the Alberta government, and the University of Alberta. I have programmed in APL for over ten years.

Having worked on all of these systems, I can state without hesitation that PortaAPL is a very sound and thorough implementation of standard IBM VS/APL with many STSC extensions. It's the first complete APL system that costs less than $300 and yet delivers the power and capacity required to run many mainframe-developed APL systems. I have ported hundreds of APL functions and one complete database system from VS/APL environments to PortaAPL with no difficulties or incompatibilities. Of course, the Mac cannot keep up with an Amdahl mainframe, but the amazing thing is this little interpreter is fast enough, running mainframe code, to still be useful.

If you want to experience *real power* on the Mac, do yourself a favor and get PortaAPL. You will not regret it. Take it from a very satisfied customer..PortaAPL is prouced by Portable Software, 60 Aberdeen Ave, Cambridge, MA. 02138. (617) 547-2918."

In response to a question about PortAPL's graphics capabilities, he said,

"PortaAPL supplies a workspace of cover functions that allow you to access most of QuickDraw from APL. The system comes with a small plot demo that shows one how to set up a simple technical plotting system. I have modified this system to plot engineering graphs, log normal, splines, etc. The performance is quite adequate. It's not as fast as commercial plotting packages; however the APL environment is more flexible and adaptable than some of the plot packages I have used. If you have a need for 'nonstandard' plots, PortaAPL is a good tool to program them in."

Products that I Haven't Tried But Have Gotten Sales Blurbs On

MacSpin looks good, real good...Design Scope looks like a product that an electrical engineer could get really excited about for three days, then put in his desk drawer because it doesn't do everything he wants it to do. But it DOES look like the prototype of a more powerful lab simulation program, like Multiplan was to EXCEL...LM Software has released a specification program called MacSpec ($199.95) that is a full featured word processor/editor. It automatically numbers sections and chapters and paragraphs. Ideal for the Beltway Bandit type companies that generate specifications every day. It reminds me a lot of SCRIBE, a text processing program written by UniLogic that is used at work here to generate beautiful looking reports and documents. This may be worth getting. I am unaware of any other Mac software that does this. Call LM Software, P.O. Box 93, Belmont, CA. 94002-0093, (415) 594-0627. Tell 'em Fred sent you and to please send me a beta copy. Yeah, right....Oh, please, Dave Winer, please, please let me be a beta tester for MORE, possibly the most useful business software this year. I'll grovel, I'll whine and whimper, PULLLLLLEEEEEEEZ send me a copy!

Products that I Have Bought But Wish I Hadn't

Do yourself a favor and don't buy PowerMath. It's utterly useless. I'm too tired to explain why. Just don't. Okay, I'll try to explain why: it's slow, it only does x-y stuff, not three-dimensional functions like z(x,y), plotting takes agonizingly long, the plot axes aren't labeled, the manual doesn't have enough examples, and it's too expensive. And there are very few supported functions. I tried to see the plot for a Chebyshev polynomial, which is of the form

$$T_N(x) = \cos(n \cos^{-1}(x)) \qquad (-1 < x < 1)$$

Now is that too much to ask, that a mathematics package be able to solve that equation? But, alas, the only supported relevent functions are sine, cosine, tangent, and arctangent. Urggggh. Utterly useless for finding more Seelig numbers. There are such things as Seelig numbers, you know. Dr. Ogers has found a whole class of them. Ah, but I'm rambling again.

And Now For Something Completely Different

What's Hot: WAP Journal, MacUser, Byte, Seelig's Journal for Totally Whacked-Out Engineers.

What's Not: MacWorld. Cancel my order! Barf! Gag!

I Wish We Could Sic Andy Rooney On: Those toads in Advertising that insist on putting the heavy stock paper advertisement three pages in front of the article I really want to read. MacUser and MacWorld are both guilty of this and ought to have serious corporate fines levied against them.

Why Don't They Just Jerk the Ads for: Northeastern Software. The scam's up, guys. Everyone's been complaining about the waits and the service. Money in, nothing out. Yet the trade mags still continue to allow Northeastern to run those glossy foldout ads that show the wonderful prices, but don't show the huge numbers of dissatisfied customers.

Developer's View contd. from pg 57

Which one did Micro Dynamics buy?

We chose the Radius FPD. By the time you read this, many of you will have seen the demo I am scheduled to give at the WAP meeting. Quality, attention to detail and fast delivery helped us make our choice.

The Second Battle in the DeskTop Publishing War has been Won.

If I were the head of the newly formed IBM desktop publishing division, I would not be happy. PageMaker on any of these three screens is much nicer than the best graphics I have seen displayed on our IBM-AT's EGA graphics option. Apple won the first round of the desktop publishing war with the Macintosh LaserWriter combination. These third party vendors have just won the second round. What will happen when Apple introduces its own big screen Mac? The situation keeps getting better and better for those of us who use Macintoshes. Radius Inc. (408) 732-1010; Micrographic Images Corp. (818) 407-0571; E-Machines Inc. (503) 692-6656.

Jim Lanford is the author of MacLabeler and architect of DigiBase, another software product for the Macintosh. He has implemented ground stations for Spartan 1 and other real-time 68000-based testing systems for various satellites. Jim is president of Micro Dynamics, Ltd., a D.C.-based consulting firm specializing in Mac software and training.

Softviews
David Morganstein

This month begins with an important "avoid file crashes" update on MacSpell+. We offer for your enjoyment and edification: a review of InBox a message center package for AppleTalk networks, a look at Comic Works an impressive yet low-cost graphic utility offering most Mac Paint and Mac Draw features combined with a page layout function, and DiskExpress a "must have" utility for hard disk owners.

MacSpell+ Update. First, version 1.10 has a serious bug which can eat your files if you use Microsoft Word! (confirmed by Creighton Development). Get the 1.67 update—unfortunately, I sent for this two weeks ago and it has not arrived as of yet. Second, I uncovered the cause of the problem I mentioned in the previous review. Spell+ seemed to be skipping some words and pasting together parts of others. Upon re-reading the manual I found an important shortcoming of the program. Both margins of your document must appear on the screen at the same time! If you are working on a document wider than six inches, you must reformat it to spell check it so that both the left and right margins are visible. Spell+ can only "see" whithin margins you can visually "see". A serious limitation.

InBox (Think Technologies, Inc.). Last month, we reviewed two programs of interest to Appletalk network users. This month, we add Think Technologies new message center package. IB lets you send and receive memos, phone messages and file enclosures between networked Macs. It provides an option for an RSVP to let the sender know when the receiver has examined the message. You can send the same message to a group of people. One unique aspect of the system is that the mail is sent to and stored on a single Mac. This allows you to send mail to someone whose machine is off. When they boot up at a later time, using a specially modified boot disk, they will be notified that mail is awaiting them.

IB operates as a desk accessory making it easy to use. If you are working in a program which supports DA's, you can send/examine mail without having to quit your current application. When mail is awaiting you, you can be notified by either (or both) a visual or an audible notice.

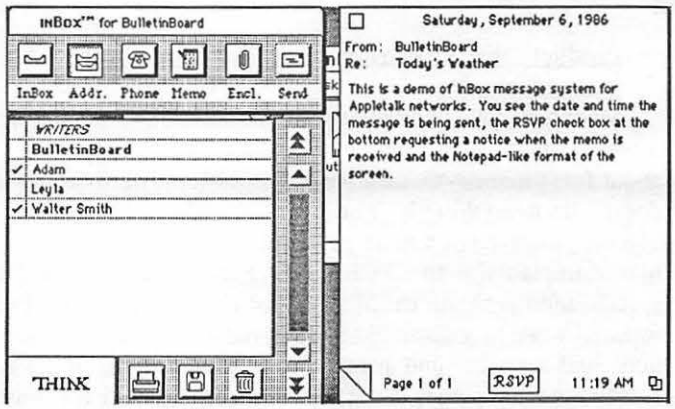
Installation. To install InBox on a network, you must dedicate one Mac as the Message Center. This Mac can not be used for any other purpose. A volume on it (microdiskette or hard disk) will be used to store all messages and to communicate with senders and receivers. A protected disk is used to set up the message center, give it a name, identify the mailboxes and attach passwords to them, if you desire.

A second Mac is used as the Administrator. This station performs routine maintenance such as backing up message files, changing the address list of participants or phone check boxes and compress files to save disk space using a special utility. These function are performed with an "administrator" program whenever the Message Center coordinator desires.

All other stations must have the IB desk accessory installed in their system file in order to be notified of mail and to exchange information with the message center.

What You Get. The package contains an administrator disk for configuring the Message Center station and the administrator's Mac. Three Personal Connection Installer disks are included to allow three other Macs access to the Message Center. Additional Installer disks can be obtained at a list price of $75 each. A 53 page user's guide and an 80 page administrator's manual are included. Each contains a Table of Contents and an index. Both of these are easy to read and to follow. The User's Guide employs a lot of clearly labelled screen shots showing you what to do and what each option means. Short Administrator's Notes includes update to the Administrator's Manual. A 13-page Compatibility Reference manual describes IB use with a Laserwriter equipped network and issues around the MiniFinder and Hard Disk upgrading.

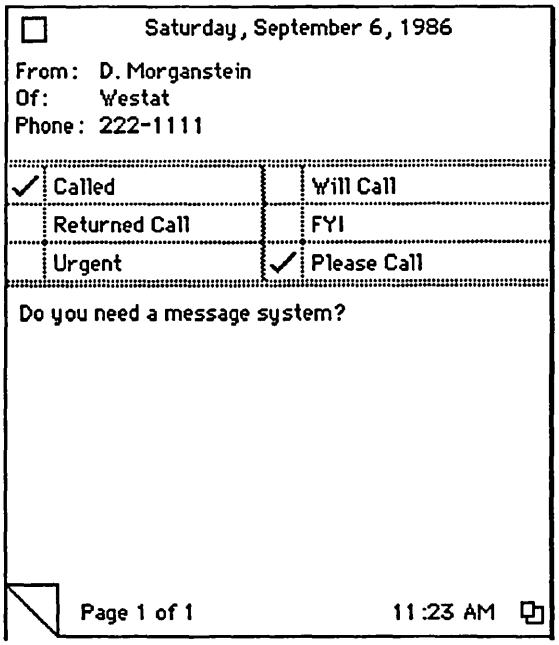
Using InBox. When you select the IB desk accessory, you are greeted with a window that lets you: examine your message list (InBox), select people to receive your messages (Addr.), create a phone message (Phone) or memo (Memo), indicate a file to be enclosed along with the message (Encl.), or send a message (Send). In the screen below, Addr. was selected to list the names and Memo was selected to create a note.



The message list shows mail in chronological order displaying various footnotes such as RSVP, reminders you have sent yourself, or an indicator that an item has not yet been read. As you can see above, the message and address lists use a "realistic" slider and forward/reverse buttons to scroll vertically through the message titles or names. While this may be "cuter" than the usual Mac elevator box, I would have preferred the standard display. Opening a blank or received message, you will see a display similar to the Notepad which indicates who sent it, when it was sent, or if an enclosed file accompanies it. The messages can be quite long. At the bottom left of the screen you see how messages can be trashed, sent to the printer or stored on a disk. These three operations can be performed in individual messages or

contd.

simultaneously on a group of messages designated either by clicking on individual names or on all traffic from a single day. A telephone message form looks like this:



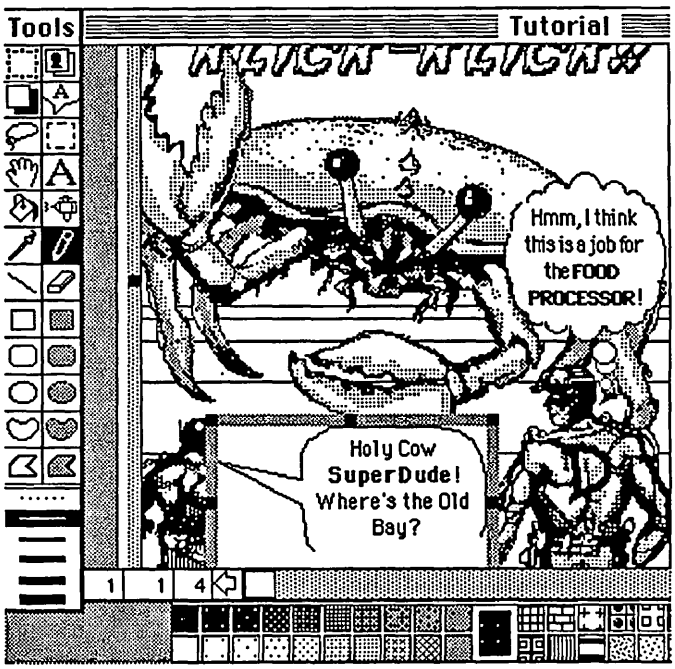
IB offers several advanced features, as well. After reading an incoming item, you can select Reply from the IB menu and issue an immediate response. A received item can be forwarded to another member of the IB network. You can create a Routing List which can be used to send messages to specific collections of people. Your mail can be read from another Mac, so long as you remember your Password!

Summary. IB offers a unique solution to message exchanges among network members. It has the ability to store messages and notify users of their mail even if their equipment is not on at the time the mail was sent. In addition, it can provide feedback to the sender that their mail was received. Files can be sent along with the messages.

The IB Administrator's disk is copy-protected and must be inserted to perform Administrator tasks. Think Technologies offers a technical support phone number but it is not an (800) line.

Before selecting InBox, you should consider IB's requirement of a dedicated Mac as the message center. On the one hand, this approach allows for messages to be sent to people who are not using their Mac at the time, on the other, it makes for an expensive system. As an alternative, the Videx Mail Center sends messages directly from one Mac to another so long as the receiver's Mac is on but has no provision for storing messages sent to people whose computers are turned off. The choice will depend upon the kind of system you wish to establish and the price you are willing to pay for it. Obviously, a nice alternative would be for IB to operate in "the background" allowing someone to use the Mac which is acting as the Message Center. MacServe works in this fashion where a partition of a hard disk hooked up to one Mac can be accessed by other Macs. While this might slow down the Message Center Mac for a while, it would at least permit doing some useful work with it. Think Technologies, Inc., 420 Bedford St., Lexington, MA. 02173.Phone (617) 863-5595. Price $295.

Comic Works (Mindscape). The Mac is the first personal computer used to assemble a comic book. While Comic Works wasn't on the market at that time, it certainly makes the task of creating such a publication surprisingly easy. Although many of its tools will be familiar to MacPaint or MacDraw users, CW adds the page layout feature needed to assemble a finished product, as well as several other creative weapons, to the artist's arsenal. To CW, a document consists of pages, panels within them and easels within panels. In an easel you place graphics and text. Where Paint treats text as a lot of pixels, often resulting in unpleasant looking results when windows are resized, like Draw, CW retains the character form needed to allow text wrap, editing and corrections. You can see several of these new tools in the screen below.

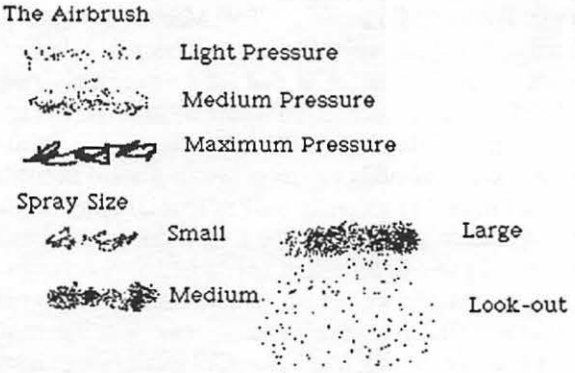


The top two tools are used to create new panels and within them, new easels which can hold graphics or which serve as text balloons. In the display above, the overall cartoon is the panel containing several easels. There are easels for each of the two characters, one for the giant crab and two text balloons, one of which has been selected for editing. You can see the outline around the text and the handles used to move or resize it. Just clicking in the text allows it to be changed using all the standard Mac methods of clicking, dragging, or changing fonts and styles.

Clicking on one of the graphics easels selects it for editing with the familiar MacPaint tools or the newer CW tools like the air brush. In the following display, you see some of the air brush's capabilities. You can change the spray size and pressure required to obtain a wide variety of effects.

CW allows you to edit the paint and air brush patterns. In addition to a Fatbits option to expand the picture, there is a Thinbits alternative to step back away from the window and see what is nearby. These Fat or Thinbits displays appear on the right half of the screen allowing a very complete few of the original in the left half. MacPaint's Grid option appears in a greatly enhanced form. You can set the grid size and see it in the background. Like MacDraw, objects can be aligned to the grid.

contd.



The Package. CW comes on three unprotected disks. One contains the program and the others contain sample comics, including a tutorial keyed to the accompanying manual. If you are familiar with the Mac and with MacPaint, you will learn to use CW very quickly. The 116 page manual begins with a Quickstart to show you what CW can do, goes on to an overview and then moves into a tutorial. About thirty pages are dedicated to an in-depth discussion of all program features and another dozen pages go over important tips and techniqes. The manual ends with a reference section describing each menu option.

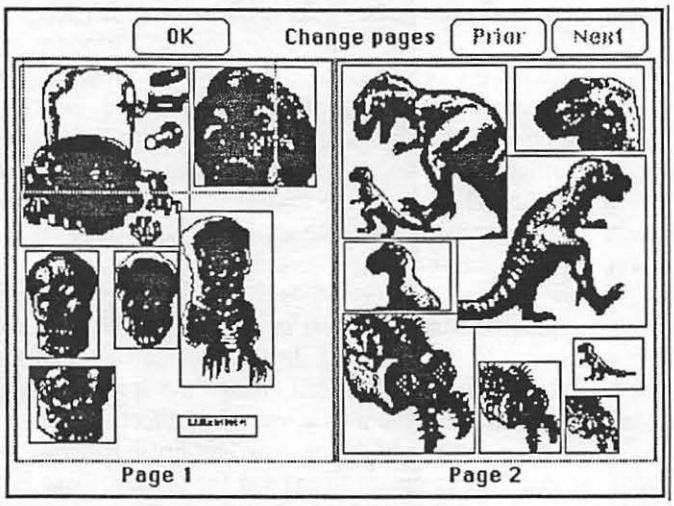
Three intriguing fonts, Comic, Commando and Crypt are also included in the System File (see samples below) as well as the Art Grabber+ Desk Accessory for selecting parts of a MacPaint file for copying and pasting. Mindscape also has included the "Copy to Clipboard" Fkey in the System file.

THIS IS COMIC FONT

THIS IS COMMANDO

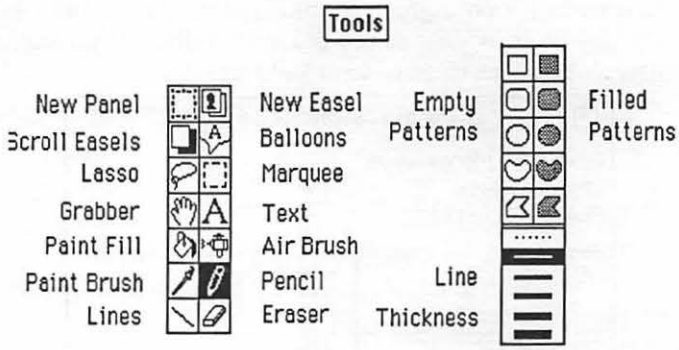
THIS IS CRYPT!

Mindscape includes a utility program called PosterMaker which allows you to scale a page of your Comic up 3200% or down to 1% of the original for special printing.



The Show Page Option

Summary. CW combines many of MacPaint and MacDraw's features within a page composition format. In addition, they have a few "goodies" of their own. The result is an easy to use yet powerful application for the graphic artist (professional or novice). The accompanying manual is clear and well-organized. I should point out that CW can be used to fill a wide variety of graphic needs. It isn't limited to making cartoons! When you consider the price, it's an amazing buy. Mindscape, Inc., 3444 Dundee Rd., Northbrook, IL. 60062. Phone 800-221-9884. Price $49.95



DiskExpress (ALSoft, Inc.) A powerful utility for disk optimization, DE lets you reorganize a fragmented hard disk into contiguous blocks, speeding up file loading. DE does several things. First, it can diagnose the degree of fragmentation on a hard disk or microdiskette. This analysis will give you some idea of the savings you will observe by compacting the disk. In addition, it can scan a disk for bad blocks and alert you of any problems encountered. DE can clean up the desktop, freeing up space on the volume without loss of Get Info data. Over time a hard disk will accumulate the icons of programs which have been trashed. If you look at the size of the invisible desk top file (using a utility like the Disk Info DA) you may see a file over 100K in size. The desk top can be rebuilt by holding down the command and option keys upon boot up or exit from a program but at the price of losing the data in the Get Info text window and sometimes turning interesting icons into plain generic ones. The rebuilding might save dozens of K of space on the disk. DE will do the rebuilding without loss of information.

DE's primary service is to rewrite the files on your disk so that all blocks of a file are contiguous. Such files will load more quickly since the drive head won't have to move all over the disk in the loading process. In addition to doing this rewrite, DE can do this operation moving applications first. Since these files are never re-written during normal operation, their placement in one large contiguous block eliminates the degree of fragmentation that changing data files can undergo. The net effect is to maintain the gains of the file re-building process.

In the following screen shot you see DE's command/ volume information window. The top part allows you to select the function you want. The bottom part is the analysis of a volume (diskette in this case) telling you how much you will save by optimizing it or taking a little more time to "prioritize files", meaning write the applications first.

DE seems to have a problem working with diskettes in the external drive. When I ran any of its functions on the external drive, they always ended with an error message. Since DE is primarily for Hard Disks, this represents no limitation, but it was disconcerting....

DE is easy to use and as far as I know unique at this time. It must be run from a start-up disk other than the one being re-

contd on pg 74

EXCEL'ing ON YOUR MAC: Part 7

by David Morganstein

A Picture is Worth a Thousand Homework Problems (or On The Educational Uses of Excel). When it comes time for your kids to learn about drawing graphs in their math class, try the ease of Excel. Joshua, my 13 year old, was learning about quadratic funtions. He was tirelessly plotting with pencil and paper what you get as you change the coefficients in the function. You remember,

$$Y = aX^2 + bX + c$$

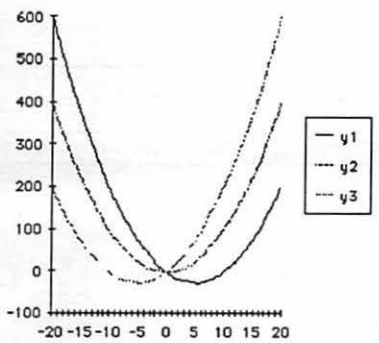
makes a parabola which either opens up or down depending on the sign of a. For each of Joshua'a homework problems, he had to build a little table of X and Y values and plot them, connecting the dots to see what he got. The question was to see what a, b and c do to the shape and position of the curve. (Perfect thing for a computer to do, right Ed?)

In the following spreadsheet, three versions of the quadratic have been defined. Each has a=1 and c=-4 but a different b ranging from -10 to +10. In the accompanying line diagram, Excel has sketched the three parabolas. By changing any of the constants, you can immediately see the effect from the resulting curves. As another aid, we have included the value of the discriminant and the roots of the equation in lines 4, 5 and 6. Hopefully, Joshua will use this tool to help explore the quadratic equation and not just use it to simplify doing his homework!

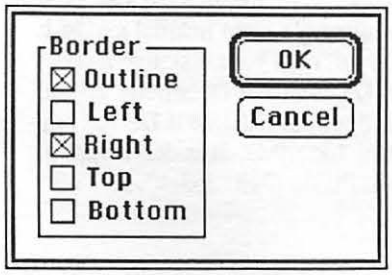
Quadratic

	A	B	C	D
1	a=	1	1	1
2	b=	-10	0	10
3	c=	-4	-4	-4
4	disc=	116	16	116
5		0	-2	-10
6		10	2	0.39
7	x	y1	y2	y3
8	-20	596	396	196
9	-19	547	357	167
10	-18	500	320	140
41	13	35	165	295
42	14	52	192	332
43	15	71	221	371
44	16	92	252	412
45	17	115	285	455
46	18	140	320	500
47	19	167	357	547
48	20	196	396	596
49				

Chart1

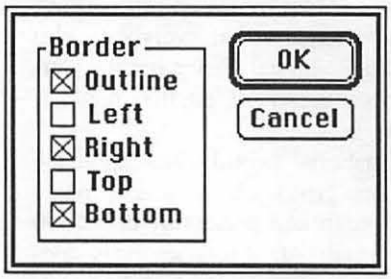


Reader Feedback. Two useful ideas came in this past month. The first was from Bob Mueller. Basically, Bob said the earlier Macro to "box-in" an area of the sheet, while interesting to help learn the Macro language, was totally unnecessary! Through the proper selections from the Border dialog box, you can get a variety of "boxed-in" appearances, as shown below. Thanks for keeping me honest, Bob! In the first example, you can box-in the columns by selecting Outline and Right.



Mi.	Gals.	MPG
174	5.4	32.22
286	9.3	30.75
242	8	30.25
232	7	33.14
226	7.1	31.83
183	6.1	30.00
309	9.1	33.96

In the next example, all the cells are boxed by adding Bottom. to Outline and Right.



Mi.	Gals.	MPG
174	5.4	32.22
286	9.3	30.75
242	8	30.25
232	7	33.14
226	7.1	31.83
183	6.1	30.00
309	9.1	33.96

The second useful suggestion came from Dick and Nancy Byrd. They found that Excel is not too efficient in storing files as the spreadsheet grows. They suggest peiodically selecting all the cells in your sheet, copying them to the clipboard, opening a new worksheet and doing a paste to create a second "copy". This one will usually be much smaller than its twin! I confirmed this and add one more thought. If you can convert formulas to values, you will further reduce the size of your spreadsheet. I use Excel to maintain a Check Register (no I didn't justify buying a Mac just to balance my check book...). The file had grown to 60K with about 300 records. By copying and pasting to a new sheet and by changing most of the records to values only, the file shrunk to 30K!

CIVILIZATION ON THE MACINTOSH
by Robert S. Richmond

English is an awful language to learn, but it's one of the easiest to set in type. Just 26 letters, each with a capital and a lower-case form, and no funny accent marks or extra letters. We writers of English tend to assume that everybody else should do it the way we do, so we blithely leave out the German umlauts and the French accents and tell 'em they're playing ball with the big boys now.

In an increasingly international world, this approach doesn't work very well. French typed without accent marks looks to a native reader of French like somebody in a $300 suit and no shirt. It just isn't civilized. An expensively laid-out publication with the tildes left off the Spanish looks rinky-dink. On the other hand, a plainly typed page with a German name spelled with its umlaut looks like the writer (or the typist) cared about—you might say—a guest in the home.

The insanely great computer comes to the rescue. Just the ordinary Macintosh system fonts come with all the extras you need to write the standard languages of western Europe, and an increasing library of special fonts will handle languages you've probably never heard of.

Let's look at some specific foreign languages. That approach will give you a reference you can turn back to, and it will allow me to introduce the special vocabulary painlessly. I'll start with Spanish, since it's fairly simple and you're likely to have some experience with it already, and I'll squeeze Portuguese in too.

Spanish and Portuguese. Spanish has one *accent mark*, called an *acute accent* (when we come to French, we'll have to deal with two more). It's reached with the option key, where it's found as a *dead key* (a key that doesn't advance the cursor) at option-e. Strike option-e, then any of the five lower case vowels, and you'll get an accented letter á é í ó ú; in capitals only É is available. (You cannot accent any other letter in the system fonts.) Many, though not all, words in Spanish require an accent over one of the vowels: hablé, jabón, así. (Portuguese, in addition to the acute accent, occasionally requires a circumflex accent: favôr, você. Strike option-i, followed by the vowel needed.)

A second mark, called a *tilde*, can go over the n. It's a dead key at option-n (the wavy line on the key at in the upper left hand corner has what looks like a tilde, but it isn't a dead key.) Many personal names require an n with a tilde: Castañeda, Núñez; SEÑOR, piñon. (You can also put a tilde over an ã or an õ; this *til* is needed in Portuguese, but not in Spanish.)

Rarely you'll need a *dieresis* over the letter u. It's at option-u as a dead key, followed by u or U. Vergüenza, GÜERA.

Portuguese, like French, occasionally requires a *cedilla* with the letter c: estação, ouça-lá! Option-c gives you the ç, and option-shift-c gives you the capital Ç.

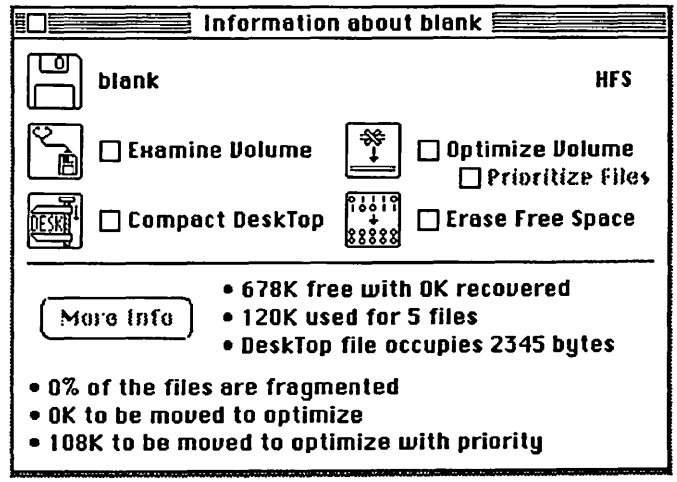
And finally, the famous Spanish inverted question mark and exclamation point. These are right where you'd expect them, at option-cap-? for the question mark, and option-1 for the bang. ¿Quién? ¡Caramba!

Here's the same information in tabular form:

acute accent	está	option-e, vowel
circumflex (Port.)	você	option-i, vowel
tilde	muñeca	option-n, n,a,o
dieresis	güera	option-u, u
cedilla (Port.)	estaçao	option-c
inverted ?	¿porqué?	option-shift-?
inverted !	¡ándale!	option-shift-!

This article is the first of a series that will deal with as many languages as I can find Mac fonts for. I'm always looking for new language fonts. Have you got anything for Chinese? Vietnamese and other southeast Asian languages? Cherokee syllabary or other American Indian languages? Eskimo syllabary? Contact me at 332 Barnard Avenue, Asheville NC 28804, phone 704-354-2750.

Softviews contd. from pg 72



built. Restructuring a hard disk can take a lot of time and any interruption of power in the middle of the process can be a catastrophe. The accompanying single page manual makes it clear that you should never use DE on a hard disk that has not been backed up. I have used DE with the Dataframe 20 and the Apple HD20. The manual does not indicate if DE has any hardware restrictions. ALSoft, Inc., P.O. Box 927, Spring, TX. 77383-0927. Price $29.95 Phone (713) 353-4090.

DISKETERIA DISPATCH
by Jim Little and Martin Milrod

Apple II Notes by Jim Little

Three new disks this month mark the end of Washington summer heat.

Disk 95 is Spreadsheet F - Coin Collecting. Thanks to George Koelsch, this disk contains VisiCalc templates for the inventory and valuation of coin collections. Each denomination and class is a separate file for ease of handling, printing and updating. Both U.S. and Canadian coins are included. Space is provided for condition, date bought, sold or traded. The format may be modified for stamp collections keyed to Scott's index. If you collect coins or whatever, give this one a try.

Disks 501 and **502** are new utilities for die hard DOS 3.3 users among us. Both contain some old stuff, and some exciting new utilities. Most programs are setup so that the exit from the program is to the menu. Good way to have things work, at least until the programs are extracted from the utility disk. **Disk 501 is called Beginner's Choice.** Included are catalog sorter, fast disk copier, comments on double-siding disks (some of which I disagree with), hi-res character generator, appointment calendar, a 'REM' remover, text file lister, etc. **Disk 502 is the Intermediate User's Disk.** It includes an assembler written in Applesoft, an anti-scroll program (22 lines, then it stops), a translation into text file of POKEs (for EXEC'ing), a string finder, memory dump, several forms of disk scanners, a ram disk for the Slot 3 card in either a //e or //c, text file recovery, and more. These two disks are from Music City Apple Club—many thanks.

Does anyone in WAP land have a working copy of the disk set 148 and 149, Adventure. Somehow the library copy was trashed and the data file for the rooms has a few dangling ends (east of the crystal bridge). If you have this and would be willing to copy the second disk (149), the future adventurers of the world would thank you. A phone call, a message on the BBS, or a call to the office would be appreciated. Reward: a disk of your choice from the Apple or Mac Disketeria.

Mac Notes by Martin Milrod

Larry Halff, our industrious Mac Librarian, and I returned from the Mac Expo with some 38 Mac disks, almost all of which were double-sided disks. Obviously, we've got more material than can be reproduced and made available within any one month. This month, we revised two disks and produced five new disks of demonstration software. Please note that the demonstration software is really a marketing device for some companies, but we thought it might be an effective way to let you play with and make determinations about your interests in some rather specialized applications. We recommend that you purchase the demo disks only if you are interested in their subject matter; most of the demo disks neither PRINT nor SAVE, or have some other disabling limitations, so please be aware of these.

Revised Disks:

SigMac Disks 17.3a and 17.2b—Red Ryder 9.4

Red Ryder, arguably the best telecommunications software for the Mac, in its ninth incarnation. Disk 17.3a contains the latest version 9.4 of Red Ryder. Too bad the official, full, real documentation has not been released yet. That is why you have to get Mac Disk 17.2b. It has the 8.0 documentation.

Mac Disk 48.1 Fonts V

(This revised version is dated August 14, 1986 and contains some new point sizes.) Princeton font (version 3.2L) is a marvelous font which allows you to easily do technical equations and all kinds of other neat stuff.

In the LW Princeton Folder:

Princ—This is the LaserWriter driver for Princeton. MUST BE USED WITH VERSION 3.1 OR GREATER OF THE LASERWRITER PRINTER DRIVER!

Princeton Fonts—These are the screen fonts for Princeton. Once installed, the Princeton documents print properly on an Imagewriter printer. These fonts permit pixel-by-pixel alignment of symbols for sharp Imagewriter or Laserwriter output.

show.off—Shows off the features of Princeton.

PF.keys—Documentation for Princeton.

Princ Table—This is a DA to display the option-key combinations for Princeton.

In the Font Display Folder:

Font Display 4.0—Displays the characters in a font, using a number of different styles and sizes, that you can customize.

Font Display.doc—Documentation for Font Display 4.0.

In the Fonts Folder:

Japanese A—Japanese character set!

Giants 18—A headline-type 3-D font.

Milan 24—A sharp looking headline font.

Zodiac—This one displays the signs of the zodiac.

September Demo Disks

Mac Disk 61a and 61b: Statview Demo

These contain the demonstration version of Statview512+, a highly rated statistical analysis program. Disk 61a contains the application and 61b the documentation. If you are interested in this kind of software, we suggest that you purchase the set.

Mac Disk 62: MORE Demo

To those of you who saw the great demo of this application at our recent Pi meeting, this disk is your opportunity to "play around" with Living Video Text's new smasher product which supersedes ThinkTank512, and allows for some great new business productions of visuals, wire-diagrams, outline processing, and so on.

Mac Disk 63: MacAPL Demo

Many of you have asked about APL for the Mac. APL, A Programming Language, is a mathematically-oriented programming language, which is powerful and functional for scientists, analysts, statisticians and mathematicians. The demo disk has some good help files for the rest of us. Really an interesting adaptation of APL to the Mac environment. To our knowledge, this was first unveiled at the August, 1986

contd. on pg 77

CUMBER'S CORNER

by James F. Cumber,Jr.

HyperDrives on Macintosh Plus, Surge Suppressors, Etc.

I really HATE to have to write the first part of this article! I do NOT enjoy throwing brickbats at any product. However, when the problems with a particular piece of hardware or software are TERMINAL, and I have intimate knowledge and experience with the offending items in question, I would be derelict in my duty to Washington Apple π and its members if I did not disclose what I know. So saying, let's get it over with...

HYPERDRIVES

The magazine ad showed the famous Macintosh "watch" icon with the words, "Stare at this for 18.5 seconds...Now you know a good reason to buy a HyperDrive..." The company where I work needed computers and mass-storage devices, so this sounded very good back in March. Being cautious types, we went to one of the largest and best microcomputer dealers in the area and arranged a demonstration-rental of a 512K Fat Mac with HyperDrive 20, among others. It worked like a champ. The only difficulty was that the Excel-based accounting system that was being written could not be run in only 512K of RAM. So the company bought their first Mac Plus in April and decided on phasing in the Mac Plus as our standard machine, most to be equipped with HyperDrives. Along about May, General Computer Company released their V2R1 Revision software for the HyperDrive—and all of a sudden, the internal floppy drive on the 512K shut down! The repair people took it into the shop for two days (erasing the hard disk completely during system tests...so I had to spend another half-day reloading files), and called General Computer. It turns out that V2R1 was originally designed for the Mac Plus, and it does shut down the internal drive on a 512K. Well, considering the changes made in the Plus to improve it, it sounded reasonable, both to me and the technicians. Unfortunately, it also kept the annoying feature of bringing up "Der Bombe" whenever someone accessed the LaserWriter while someone else was already printing...on BOTH systems involved!

June brought the first HyperDrive-equipped Mac Plus. Things seemed to work well for the first several days (about a week and a half) before the Finder 5.3/System 3.2 upgrades came out, and we added them to the system. For two days, the LaserWriter queued us up properly when more than one of us wanted to print! At long last, Shangri La!

Then disaster struck! One day while working in OMNIS 3 (and doing NOTHING with the LaserWriter!), "Der Bombe" returned...with a vengence! ID = 26...reboot..."knocked out Mac" icon with 0F0105 legend.

Shut down and try again from cold: KO Mac again! This nonsense continued for almost half-an-hour with several partial boots ending in "Der Bombe" with ID numbers 26, 16, and 15. Most, however, aborted to the KO Mac and codes 0F0105 or 0F0106. The technicians were swamped at the dealer's—we weren't the only ones to get our noses caught in the revolving door! The techs were making frantic calls to General Computer, whose lines were also swamped—multiply the dealers' problems times the number of GCC dealers! After a week and a half, it finally got sorted out.

The straight scoop, according to some VERY angry and frustrated technicians, is that GCC did NOT follow Apple's very clear and oft repeated instructions on the details of the Plus and the newest System software releases. We had not yet loaded our hard disk to this point, but it seems that GCC did NOT actually implement the HFS filing system in V2R1—they just modified an MFS system to LOOK like HFS, but you were still locked to MFS limits on total number of files on the disk! Finder 5.3 and System 3.2 revision software completely bombs the HyperDrive on both the Plus and the 512K, corrupting both System and Finder (on a Plus, it also deleted the Startup Drawer from the index, but didn't erase it from the Drive) irrevocably. Once this occurs, you must reinitialize the entire HyperDrive from diskette and reload all software—but be sure to use only Finder 5.2 and System 3.1.1 or earlier, or you are back in the same stew all over again! This also means that the LaserWriter will not operate as it is supposed to, and you'll get "Der Bombe" if more than one machine tries to access it at a time, or if one Mac tries to print before another has finished. There is also some question that the System software supplied by GCC for loading onto their HyperDrive may NOT be exactly the same as it came from Apple—that they may have modified it specifically to work within the constraints of their HyperDrive software—but this is unconfirmed.

The bottom line is that General Computer Company blew it BIG TIME on the Mac Plus and their V2R1 package—and did NOT inform either the dealers or the customers sufficiently as to the possible problems. As a result, many reputable dealers (who, let's face it, do NOT have, and cannot support, enough technical staff to exhaustively test every piece of equipment that comes in from all sources—particularly from previously reliable companies) got hung out to dry because of GCC's sloppiness and corner-cutting. Many customers of these dealers lost systems, time, and money (some as much as $3,500 per day!) from the fiasco. Dealers are dropping HyperDrive and GCC like the proverbial hot potato, after having to absorb many returned "Hyperized" Plus machines from irate customers. It would not surprise me at all if many lawsuits resulted from this and General Computer went belly up because of it all.

Word is also out on the HyperDrive 2000: it does NOT use the 68881 as a TRUE math co-processor, and there are lingering reliability questions as to how they can package a 20 Meg hard disk, 1.5 Meg of added RAM and the 68881 co-processor at the advertised price—what corners were cut THIS

contd.

time and what unpleasant surprises await the unwary.

Mac Plus users should steer clear of the HyperDrive. Fat Mac users with a LaserWriter should also look elsewhere, although V2R1 (WITHOUT Finder 5.3/System 3.2) SEEMS to work well with ImageWriter ONLY configurations. Our company has dropped back to the simpler and more reliable "plain vanilla" Mac Plus with 800K external drive...which works just fine with the Finder 5.3/System 3.2 revisions and the LaserWriter, thank you!

As to the famous ad, my experience indicates that a better (more accurate) version would show the "Knocked Out" Mac icon with the caption, "Stare at this for 18.5 HOURS...Now you know a good reason NOT to buy a HyperDrive!"

SURGE SUPPRESSORS: The EFI

Now something much more pleasant! During all the above hassle with the HyperDrives we also had, for a short time, a totally unrelated problem of power surge and other electrical irregularities—which included the question of lightning strike protection. Even our first "plain vanilla" Mac Plus (delivered in April) was getting more appearances of "Der Bombe" than expected from an Apple-quality machine. Competent studies by such industry giants as "Big Blue" itself have shown that over 80% of all system bombs in microcomputers are caused by power surges, spikes, transients and other electrical irregularities. It seemed a good bet that some form of power conditioner would go far toward solving this problem. The head of our company insisted that we find a quality device, and was willing to be liberal as to price—even a tenth the cost of a $2,500 machine ($250) is better to pay than the cost of a new machine—and if it could reduce system bombs, it could conceivably pay for itself in "down" time saved. In the process of researching surge protectors and power conditioners, I came across the EFI products out of Salt Lake City. These are expensive: $129 list price for a six-outlet power bar. HOWEVER, they offer features not found elsewhere.

Most surge suppressors use Metal-Oxide Varistors (MOV) or cascading diodes to kill spikes and surges. Some of the better ones use both technologies, linked by a switching arrangement; but the time delay caused by the switching sometimes allows the "gremlins" to slip past the protection system and into the computer, switching bits in RAM and sometimes, the processor itself—causing a system bomb. Even more importantly, in the case of lightning strikes, most of your more popular surge suppressors suffer catastrophic damage, and may (or may NOT) protect (by their demise) the connected computer equipment from the stroke.

The EFI gear is designed by top-flight electrical engineers, and integrates, on one circuit board, both MOV and cascading diode devices, along with several other, newer power clamping and conditioning technologies—and makes them all work together! As a result, this device has passed several IEEE standard tests for both disruptive and destructive surges. Their Turbo series (the top of the line for home/office use) was tested by the U.S. Air Force at Hill A.F.B., Ogden, Utah (where they are a main logistics base for MANY Air Force systems!), and had a response time too short for their nanosecond instrumentation to measure (such a short response time is normally found only in military equipment designed to protect against the Electomagnetic Pulse—EMP—of nuclear weapons). The EFI Turbo series was awarded a patent in July of 1986, and is said to be some year-and-a-half in advance of anything on the market! The highest levels that EFI (or most civilian test equipment) can generate and measure is 6,500 volts at 3,000 amps (equivalent to 19,500,000 watts), simultaneously; and the Turbo series will absorb surges at these levels and simply reset themselves—and do it time after time after time while completely protecting the equipment hooked to them. While protecting against such catastrophic surges, it also works as a power conditioner or "smoother" that delivers "clean" power to the recipient device—rather like pulling a rope through a wedding ring: all the trash and loose strands stay on one side of the ring, while the rope comes out neat and clean on the other.

Since we installed EFI Turbo series power bars on all our equipment, appearances of "Der Bombe" have dropped precipitately (to less than 10% of pre-EFI levels), productivity has increased, and computer frustration has eased. Then came the big lightning storm in mid-July: I don't know if any of those strokes that wiped out electrical power in the area were very close to our office, but I do know that we had no computer or EFI suppressor losses therefrom; everything was working properly and the operating light on the EFIs was still burning merrily. EFI Corporation, 534 Lawndale Drive, P.O. Box 15358, Salt Lake City, UT 15358. 1-800-221-1174.

Help Wanted

Since our company is now out looking for mass storage devices (again!), I would be interested in seeing Journal contributions (even short ones) from those with experiences with various such devices. I am particularly interested in reports on the Bernoulli Box (particularly the 20+20), the OverDrive, LowDown (large sizes), Keeper, and Apple HD 20.

Disketeria Dispatch contd. from pg 75

Mac Expo in Boston where we picked it up.

Mac Disk 64: Spellswell and General Ledger Demos

This disk contains two demos. Spellswell 1.2c is, arguably, the best stand-alone spelling checker now available for the Mac. (Version 1.2d is now available for purchase.) (We also think that MacLightning 2.0 may be the best "within-an-application" spelling checker for the Mac.) This is your opportunity to judge this program for yourself. General Ledger is an accounting application of solid reputation, and one of many accounting packages currently available for the Mac.

Given the enormous workload ahead of us to release new disks each month, we are seeking several steady, reliable volunteers to serve as one of, as I respectfully call them "Weikert's Wickeds," Dave Weikert's marvelous, dedicated crew of volunteer duplicators, who reproduce a hundred or so copied version of a disk per month. Dave is one of our most dedicated, valuable volunteers and—as many others can attest to, is a warm, charming fellow with whom to work. You'll enjoy meeting an important need of the Pi in your own home, and working with Dave. If you are interested, please call Dave Weikert at his home (926-4461) after normal working hours. We need your help, so please volunteer.

We are negotiating with Apple for the Pi to become licensed to be a distribution source for Apple releases. If we get these licenses, we'll let you know how you'll be able to get the latest Apple products from WAP.

HOW TO MAKE A BACKPACK

by Jo Ann Goldberg

What is an article on backpacks doing in a computer journal? What, indeed, do backpacks and computers have in common? Is it really true that computer hackers secretly dream of woodsy hikes? Do hikers scale mountains only to recite assembly language by an alpine stream? Maybe not. But, while backpacks and computers have no natural affinity, you might have fun with McDraw creating this pattern.

Here is how I designed and printed a full scale backpack pattern using MacDraw. You can print it out and use the pattern. I did. Try it! Its fun and really quite simple. Even if you are not the outdoor type, you might find it to be a useful exercise in creating large scale designs and in increasing your agility with McDraw.

By the way, if you are interested only in making a backpack, you might be better off creating the pattern with pencil and paper. You should be able to draw a pattern in a matter of minutes. On the other hand, a paper and pencil sketch will not help you to learn more about McDraw. If you follow the simple steps below, you might learn a useful approach in constructing designs, diagrams, and patterns.

The dimensions for this backpack are especially suitable for the long distance jogger. It is small and compact—large enough to hold a change of clothes at trails end, a peanut butter sandwich or two, a paperback book, and small change. It is narrower than the standard backpack, permitting you to swing your arms freely in all directions. The pattern is simple—designed to be cut from a single piece of fabric. It should take about 2 hours to create your own pattern following the instructions below. In another 2 hours, you could cut out the pattern and sew your own urban utility pack.

STEP 1 Begin by making a pencil and paper sketch if you are creating your own design from scratch. It is especially important to begin with a drawing if your design is larger than a single screen. A sketch always helps one to identify beforehand the screen size and all of the shapes (square, polygon, line, arrow, etc.) that will be needed. In our exercise, the backpack basic design, measurements, and shapes are already identified. (Figure 1.) We need only to apply the tools.

STEP 2 Open MacDraw. Here is a list of the shapes (or tools) that we will be using: 1. Two rectangles, 2. Two polygons, 3 Two lines, 4. Eleven doublesided arrows (plus inch markers), and 5. Four labels (Front, Bottom, Back, and Top Flap).

STEP 3 Since the outside dimensions of the design are 20" x 46.5", we begin by preparing an appropriately sized work area on our screen. To do this, go to File--Page Set up, select legal size paper. Then go to Layout--Drawing Size, select 24" x 48"

STEP 4 Now the work screen is the right size. We will start with the largest shapes, and follow by putting in place progressively smaller components. We shall move from large to small, from main idea to detail.

Here is a convienent trick. Select Layout--Reduce to Fit to draw the largest shapes, two rectangles, in the reduced screen area. The first rectangle will be 20"x 17". The second rectangle will be 29.5" x 13". The reduced size format easily enables you to lay out the basic components. You can then return to Layout--Normal Size to refine the pieces. Join the rectangles as shown and select Arrange--Group to form a single solid unit. You should now have a bulky "T" Shape.

(See Fig. 2)

You will have a horizontal line where the two rectangles meet. I concealed the line in the drawing in Figure 1 by covering it with a second rectangle, selecting Fill-- White and Lines-- " - - - "

Step 5 The broken line tracing the interior of the rectangles represents the seam or sewing line. I constructed it out of the polygon. There are a variety of ways to lay out the line using the polygon; I selected a diagonal design under pen and used it to draw a small 8 cornered polygon. I began the 8 sided figure in Layout--Reduce Size and then refined the shape under Layout--Normal Size. I then selected Edit--Reshape Polygon to stretch the figure into position.

(See Fig. 3)

STEP 6 The solid line segments in Figure 4 represent the fold lines. The U shaped figure, also representing fold lines, was easily created by drawing a two cornered polygon. The two straight lines were drawn and then dragged into position.

(See Fig. 4)

The heavy black lines of Figure 5 represent the straps. The perpendicular straps at the bottom are 12" in length. The horizontal straps are 16" in length. You can purchase the appropriate types of buckles at any camping store such as Hudson Bay Outfitters.

(See Fig. 5)

STEP 7 The double arrows stretched to the edges of their designated areas are not really necessary for the pattern (Figure 1). And unless they are placed inside the pattern, they will be discarded when you cut the shape But, I like them anyhow. My own pattern hangs on the wall. The arrows satisfy my own feeling that proper technical diagrams require arrows. Add as many arrows to your drawing as you like. It's a matter of taste. It makes the diagram look right.

STEP 8 The words Front, Bottom, Back, and Top Flap are each unattached typed word segments in 24 point Chicago Font. Each label is placed to meet the intersections of horizontal and vertical lines that could be drawn from the values placed on the arrows. Notice, for example, that "Front" meets the perpendicular of a line dropped from the 11" and the horizontal of a line through the 17 and 15".

STEP 9 It's time to print. Select File--Page Set Up--US Legal, No Gaps Between Pages, and Tall Adjusted. My pattern printed out on 12 legal size pages. I pasted them together, cut, sewed, attached velcroe strips to the front and top flap, and took a hike.

contd.

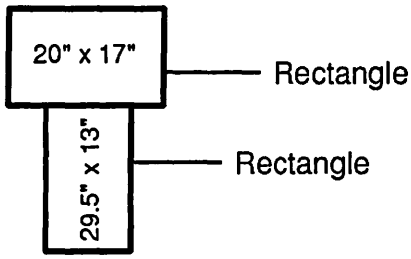


Fig. 2

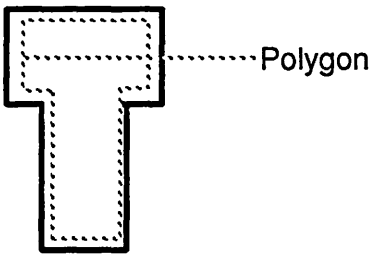


Fig. 3

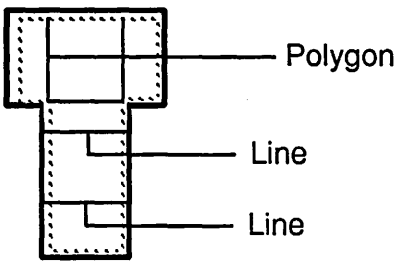


Fig. 4

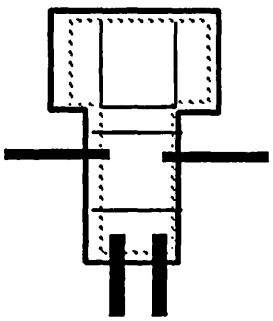


Fig.5

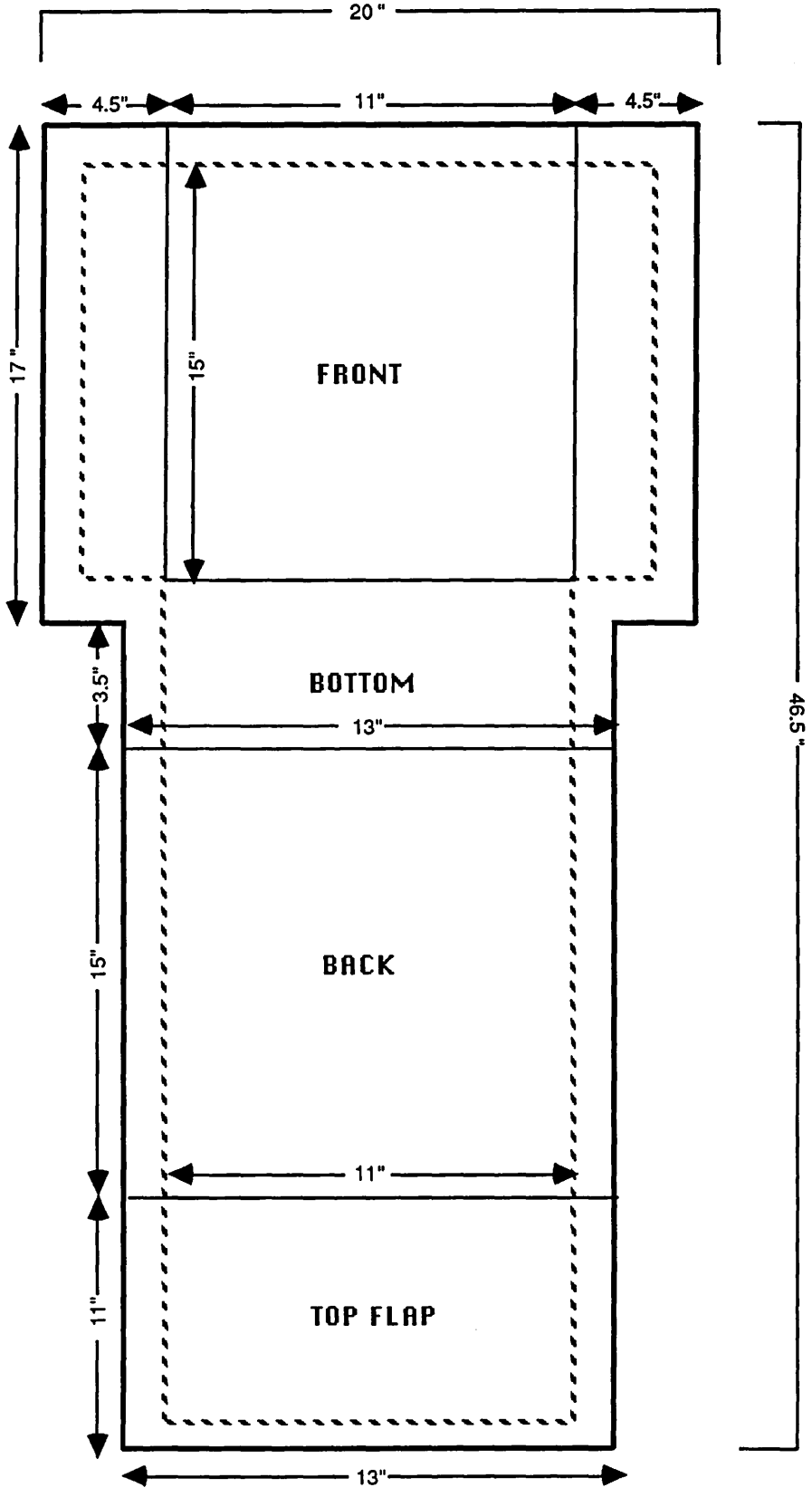
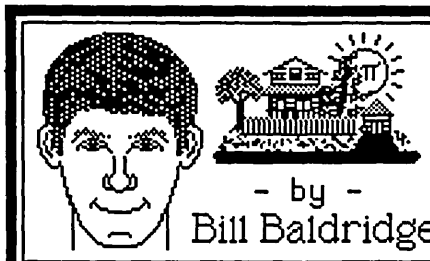


Figure 1



- by -
Bill Baldridge

Bill'l build it!

- a D.I.Y.* project for the Macintosh™ -

Cool Hand Mac

*Do it yourself

I'm sure there are many of you out there who have wondered, at some time or another, whilst toasting marshmallows over the top of your Mac, about the possibility of a MacMeltdown. For those of you who have owned your Macs for over a year, try running a straightedge up the left side of your beloved computer and you will find it is getting fat towards the top; i.e., bulging at the seams—you always wanted a Fat(ter) Mac, didn't you? This is the result of an exces- sive amount of heat buildup (or maybe you need an exorcist). Now this wasn't meant to alarm you. I'm sure the folks at Apple still consider the modest 140-150° (when was the last time you stuck your head inside a toaster oven?) to be "within operating parameters" for the Macintosh, and will point out that the warmest area is near the top of the case (or "cabinet" as the boys in blue call it), well away from the logic board. And this is true (all hail the great Apple!). However, since I, for one, intend to keep my Mac for a few more years, I went shopping the pulps for a suitable gadget to put the freeze on my slowly expanding friend.

Checking all the mail-order houses produced a list of several alternatives ranging in price from $80-100. "BANDITS!"—I cried. "Blackhearts and thieves! Why there can't be more than $20 worth of hi-tech hogwash packed into those piddling parcels of parts!!" So, with pencil in hand, I set about doing the "Baldy Bamboozle", determined not to give in to these erstwhile rip-off artists, and built my own better box from a $14 muffin fan, scrap piece of aluminum siding, a 99¢ power cord, a couple of "A-HA's!" from the old junk box, and a half-dozen pop rivets. Total investment around $16, and about 8 hours of my time. The results were mixed. I now had a Cool Mac, but I had also invited a noisy friend into my house. Still, better a noisy friend than a dead friend—he rationalized.

My friends marveled at my ingenuity. "How clever!", they said. "Ingenious!"—my favorite word. But they weren't there when I had to shut down the "B-29" (as I came to call it) whenever someone phoned, or when I had to stick my head out the computer room door to make sure the doorbell wasn't ringing. I even came to enjoy my breaks to get a bite to eat, just to get away from the little beastie. Games with sound? What's that? Did you ever play "Airborne!" at sound level 7? Good thing, because you'd now have a hole in the side of your Mac where the speaker cone came flying out... O.K., so I exaggerate. Anyway, I'm not writing a book here, so let's get on with things.

Due to an expressed interest by several fellow WAP-pers (I won't get any letters over this, will I?), I promised to do a how-to article for the Journal, and from the nether regions of my 'cognito ergo sum' came the term "Cool Hand Mac"—I guess from "cool to the touch," touch being a function of the hand...all right, all right.

Table 1 • Parts List • Table 1

Qty.	Description	Part No.†
☐ 1	Experimenter's Box	270-232
☐ 1	SPST Rocker Switch	275-690
☐ 1	3" Cooling Fan	273-242
☐ 1	6 ft. Line cord	278-1255
☐ 1	Rubber grommet or strain relief	
☐ 4	Machine screws (6-32 x 5/8") (countersunk suggested)	
☐ 4	Nuts & lock washers for above	
☐ 1	4x4" piece of screen wire mesh (see Text for further suggestions)	
☐ 1	4" of 3M outdoor weather strip - #2104 (see Text for further suggestions)	

† if any - Radio Shack part number.

Table 2 • Tools List • Table 2

- ☐ Electric or hand (hard to find!) drill
- ☐ Set of drill bits (el cheapo 99¢ kind O.K.)
- ☐ 25 watt soldering iron
- ☐ Hobby or needlenose pliers
- ☐ Coping saw with fine blade*
- ☐ X-acto knife or Single-edge razor blade†
- ☐ set of Hobby files*
- ☐ small flat-blade screwdriver
- ☐ small phillips screwdriver
- ☐ compasses (for drawing circles)
- ☐ Protractor (for measuring angles - opt.)
- ☐ Countersinking bit (optional)
- ☐ 12 in. ruler (preferably NOT wooden)
- ☐ Wet/Dry sandpaper (240 grit or finer)
- ☐ Electrician's tape or heatshrink tubing
- ☐ Masking tape ☐ Rosin core solder

* NOT jeweler's type † Watch the fingers!

Table 3 • Suppliers • Table 3

Radio Shack - "see your Yellow Pages for the store nearest you..." (General Parts)

Electronics Plus - 9600 Baltimore Ave. College Park, MD (301) 441-9009 (The source for bits & pieces - check it out!)

Hobbies & Arts, Ltd. - Wheaton Plaza Wheaton, MD (301) 949-3539 (X-acto, castings, general)

Track Auto - ditto the Radio Shack entry. (Dupli-Color, rubber hose, tools)

Your local Hardware store - Anytown, U.S.A. (Screen, tools, misc.)

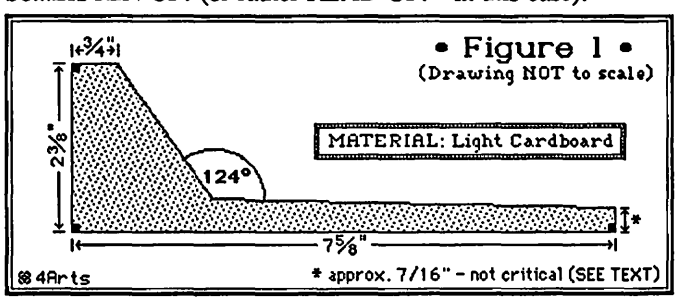
contd.

The first step was to "muffle the muffin." I ordered a cheapo 3" muffin fan from a New Jersey "computer junk" broker (we don't need lawsuits, so they will remain nameless), figuring more people would be turned on by an under $10 device. Well, do the terms "caveat emptor," and "you get what you pay for" ring any bells? The B-29 had now become a B-52—an upgrade, but who needs it? So the $10 device went out the window, and you end up with a "Cool Hand Mac" which will cost you (fingers crossed) under $30.

The fan which won the "quiet" test ended up being available where the majority of the parts for the project came from—your friendly, neighborhood Radio Shack store (I have fun making up new names and addresses to give them every time I buy something there). By the way, I define "neighborhood" as anywhere within a 30-minute drive, so no gripes about the nearest Radio Shack being across town, O.K.? This fan claims a 38db sound level, which I dispute, but it's still pretty quiet. I tried to think of an analogy to use to give you an idea of just how quiet, but the best I could come up with was "quieter than your 400K external drive". Yeah, I know—weak. Well, YOU try coming up with an analog for QUIET that everyone can relate to without getting corny, obscene, or quoting Wordsworth or Emerson... All I know is I can keep the sound at level 1 without disturbance from this fan. So, assuming you're still interested (and assuming this hasn't been edited) - ON WITH THE SHOE!

The neophyte project builder might well be advised that this is not an EASY project. However, it's not beyond the scope of anyone with a modicum of manual moxie and a plenitude of patience. The majority of the tools required should be in the average hardware hacker's arsenal (Baldy's axiom: The difficulty of ANY project is in inverse proportion to the availability of the proper tools to do the job). Many of the parts, aside from the fan and box, could be replaced with suitable equipment from a "junk box". Theoretically, I guess, one could get away with under $20 on this project. I just consider $30 to be a more reasonable estimate, for reasons which will become evident as we progress (we ARE progressing aren't we?—Left turn, Clyde!).

If there is one part of this project I consider CRITICAL, it is the making of the template in Figure 1. This template, and its subsequent use, will determine whether your project is a "go" or "no-go"—as they say in the rocketry biz. So...LISTEN UP! (or rather READ UP! - in this case).



The angle of 124° happens to be the angle between the top and the sloping back corner of the Mac's case. If you don't have a protractor, you can forego this convenience by taking a 3x6" rectangular piece of the same cardboard (like that found on the back of a pad of paper or from a shoe box) you will use to make the template and, holding it up against the left (or right) inside of the "handle area" (just what IS that called? Cut-out? Divot?) on top of the Mac, trace along the top and down the slope with a pencil (do people still use these things?). This will give you a good, and maybe your BEST approximation of the required 124°. Be sure to keep the pencil (or whatever) at the same angle relative to the top and slope as you trace. Once you have two straight lines, then just extend them with a straight- edge or ruler to the edges of the piece of cardboard. Then, using the straightedge and cutting implement (X-acto knife recommended) cut away the portion inside the 124° angle (I assume you're doing all this on a suitable workbench or similar surface and NOT your wife's/mother's antique desk!). Congratulations! You have just made yourself a guage—a 124° protractor!

Now that everyone has a protractor, cut a piece of light cardboard to a size of 2 3/8 x 7 5/8 inches, making sure all corners are square (i.e., 90°). Make a mark 3/4" from one corner along a long side. Near the same end and measuring from the opposite length, find a point 19/32" (that's half-way between the 5/8 and 9/16 inch marks for those of you with lesser measuring implements) from the long side, and 1 27/32" from the short side. Lay the gauge on top of the "template to be" with the short side of the 124° gauge lined up with the first mark, and the "crotch" (apologies to the ladies) of the gauge centered on the second mark. Trace the angle onto the template. I hope you're following all this. Believe it or not, this was the simpler alternative!

Extending the lines on the template should produce a "narrow point" (at the tip of the template) of close to 7/16" - I wouldn't worry if it's within 1/16".

As an aside, the 7/16" was chosen to give the project a "low-profile" look. I had originally intended to put the switch on the front, but this would have resulted in an ugly duck—even putting it on the top would have been ugly, so on the back it went! So, now when you reach around to switch on the Mac, or rather BEFORE (just to be safe) just switch on the fan—it's always good practice to switch on your Mac last to prevent any problems from voltage spikes created by switching on peripherals.

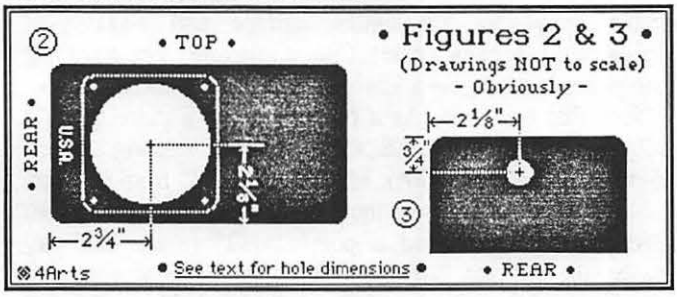
Cutting away the inside of the 124° angle finishes your template. We can now proceed to mark up the box, getting it ready to do the hard stuff. Before we start major surgery, from here on let's refer to the end where the "USA" is raised on the box as the "back end" or "back" of the box.

Go ahead and remove the bottom cover of the experimenter's box and set it aside for later use. Lay the box on a flat surface with the opening up, and place the template against one side, long side down, making SURE the fat end is perfectly flush with the back end—use a ruler held flat against the back of the box to make sure. Trace the template outline onto the box using a pencil—it'll be hard to see these markings, but it's the best option, unless you want to spray paint the box white before you start—not recommended. A well lighted work area is assumed.

Flipping the template and repeating the procedure on the opposite side completes probably the most important step—the ACCURATE layout of the final profile of your "Cool Hand Mac". Connecting the two ends of the lines you have just drawn across the narrow end of the box finishes this important layout work.

contd.

The accurate positioning of the fan is not that critical, but for aesthetic reasons it should at least be centered and square to the sides and back (see Figure 2). So, with the opening facing down, make two marks along the length 1 1/4" from either back corner, and draw a line between them; this will form a "base line" for centering the fan. Mark the center of this line, which should be about 2 1/8" from either side. Then draw a line perpendicular to (90° from) the base line using your protractor (or reasonable facsimile - index card, postcard, dollar bill, kitchen sink). Extend the line about 6" or until you run out of box, whichever comes first.



Now...take your fan out of the box, styrofoam (any of you other hackers get an idea about using this styrofoam for an enclosure?—Gaudy, but functional...), and plastic wrapper it came in. Point the back of the experimenter's box towards you, and align one side of the fan with the "base line", and at the same time center it using the perpendicular line you drew as a reference—the opening where the wires come out is a good point of reference for this. Once everything is lined up, draw an outline of the fan on the box. If your pencil is small enough (like those little red ones that come with junk mail sometimes—you mean you threw it out?!) or piece of lead long enough you can save a lot of hassle by running it around the mounting holes of the fan while you have it all lined up; otherwise, you'll have to measure them out using the dimensions given on the back of the box the fan came in. I'd suggest you FIND a small pencil...or use a piece of lead from a mechanical pencil.

Once you have the outline and holes marked, draw diagonal lines between the corner mounting hole markers; this should give you a center-point for the fan (the lines should cross within the general neighborhood [and NOT "within a 30 minute drive"] of the perpendicular line—if not, go have your eyes examined...). Using the compasses, draw a 1 1/2" radius circle from this center-point. These markings should look similar to Figure 2 without the holes cut and drilled, of course.

The last hole is for the switch (see Figure 3). It should be drawn on the back, 3/4" down from the soon-to-be top and centered (2 1/8" from either side). Once this point is found, draw a 5/8" (5/16" radius) circle there. NOW!—on to the FUN part...

There are several options for chopping up the box: 1) Machete—NOT recommended! 2) Heat knife—BEST, but who has one or wants to buy one just for this. 3) Coping saw with fine blade—probably the best (i.e., cheapest) alternative for the novice hacker. 4) The "Baldy method". I will take each in turn...

1) Machete (or .44 magnum—alternate weapon): Last ditch tool. Use ONLY in case of extreme frustration or terminal anxiety.

2) Heat knife: This is the ideal tool for this job. If you are blessed with one of these, this project should be a piece of cake. For those of you wishing to fork out the bucks for a heat knife, I suggest you contact your "neighborhood" hobby shop (or see Table 3 for suggested suppliers).

3) Coping saw: While not the friendliest of tools, the coping saw should do the job. The only problem I have with coping saws, or any saw without the prefix "jig" or "band" is the jaggies, and you ALL know what the jaggies are...

4) The "Baldy method": The next best thing to a **heat** knife is a **hot** knife—he reasoned. So, I took an X-acto knife blade and hooked it up to my 25W soldering iron, wrapping some 18 gauge bare copper wire around the blade and tip to hold it in place. This can be a bit dicey, but it works. I f you don't have a soldering iron, there are plenty of under $5 varieties out there (you're going to need one to solder the connections anyway). But I <u>really</u> only recommend this for the experienced hacker. ANY tool used for purposes for which it WAS NOT designed can be dangerous. I only mention it here for the sake of those experienced with these types of kludges (and possible dangers thereof). 'NUF SAID!

An implement I've never owned, but might work, is a "nibbler". These are usually meant for metal, but I've seen ones which suggest use on plastic (try Trak Auto - see Table 3). I'd try it on a piece of scrap plastic before trying it on the project box, and even if it works I'd be careful when using it on the box, as even ABS plastic can be unpredictable under stress—"Oh, <u>that</u> crack? That was when I tried using a nibbler to cut the plastic." Another possibility is a saber saw—there seem to be a lot of these floating around out there, as they make good Christmas/birthday presents...

Once you have a suitable cutting implement, proceed to cut the profile of the box along the lines made earlier with the template. Take your time! Patience here will pay off with less work later, and a nice looking finished product.

The profile done, we move on to the holes. You can drill the holes for mounting the fan before cutting the 3" bigger one - use a 1/8" drill bit. You can "center punch" these holes first by lightly sticking the point of the X-acto knife at the center point of the hole and twirling it a few times.

The 3" hole (Figure 2) will require a starting hole for those using a coping saw - drill a 1/4" hole somewhere around the inside of the circle, and then remove one end of the blade of the coping saw and feed it through the hole. Re-attach the blade and saw out the hole, following the circle. If you MUST rush, try to at least stay inside the circle, so you can clean up the "slop factor" later.

The hole for the switch (Figure 3) might be an ideal candidate for the .44 Magnum mentioned earlier, but we'll take the conservative approach.... If you don't have a 5/8" wood bit or hole saw, either the coping saw, heat knife (of either variety), or the "manual method" would be appropriate. The "manual method" involves drilling as large a hole as possible in the center and filing away anything that isn't the right size hole, or until the switch fits, whichever comes first - preferably the latter. The coping saw would probably do the best job.

SO! Now you should have the makings of a <u>REAL</u> "Cool Hand Mac"! Congratulations!! Go ahead and see how closely it

contd.

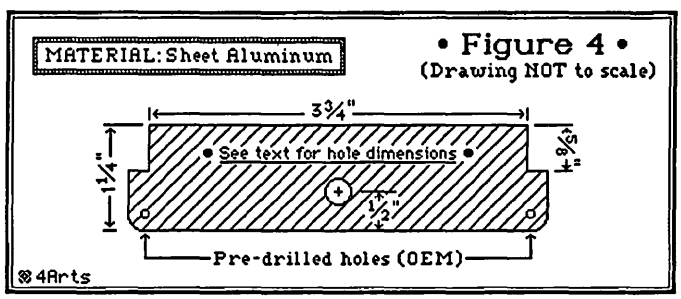
fits... Oh well, don't worry it will fit better when you've finished sanding out the jaggies. If it's any consolation, there is a certain amount of "slop" allowed in this project, though the less the better.

The next stage is to file and "wet" sand the box to smooth and straighten all the edges and holes. I recommend 240 grade or finer "wet/dry" sandpaper—used in the "wet" mode. This is best accomplished by filling either a sink or bucket with water, and immersing both the box and sandpaper while you sand. The reason for all this is due to the amount of "black junk" created by dry sanding this plastic. Wet sanding avoids a lot of this—it still makes a mess, but at least it's a contained mess. Try adding a bit of dish washing detergent to the water...don't ask why, just trust me—we're trying to keep this to the novella size.

For the long straight edges I suggest you either use a cheap sanding block or a small piece of wood with FLAT edges—actually, anything small, flat, square, and water-resistant might suffice, as long as it doesn't object to water (NO! Not your Dad's Rolex!). For the holes, just rolling the sandpaper into a tube should do the job. Try to taper the large hole outward, or "radius" the hole, as the pros say; this is one of those "finishing touches" that makes you proud of the work you've done, and garners those compliments later. As an additional touch, I really suggest you try to find countersunk screws (Electronics Plus has tons—see Table 3) to mount the fan. This, of course, requires countersinking the four mounting holes. And the only real way to properly countersink the holes is with...you guessed it, a countersinking bit. Of course, you could use a large bit, like a 3/8" or larger, but if you don't already own one the countersinking bit is cheaper.

Now you must decide whether you want to paint your box or not, because from now on we will mainly be ASSEMBLING! If you do decide to paint, I've found that Dupli-color GM-293 or FM-247 are the closest match to the Mac's case, and they aren't really THAT close a match—wonder how much Maaco would charge...

The NEXT most critical piece is the centering plate (see Figure 4), which is made from the cover of the box which you removed earlier. This is pretty straight forward, but again, the more attention to detail, the better the results.



Take the cover you set aside earlier and cut off 1 1/4" of one end—either one, using your implement of choice—metal shears or nibbler are suggested, but the coping saw should do the job. If you used the shears, you will have to flatten the piece out—use a small hammer or plastic mallet, and lightly hammer it flat on a flat surface (the flatter the better).

Find the midpoint between the two OEM (Original Equipment Manufacturer) holes and draw a line perpendicular to one of the long sides (preferably NOT the side YOU cut—sorry) through this point. This line serves two purposes, so make sure it's accurate.

Using this line as a guide, mark a point 1 7/8" to either side of the line on the side YOU cut (feel better?). Then mark two points 5/8" down the width from the corners of the side you cut. Draw lines perpendicular to these points, forming rectangles in each corner, and then cut out these rectangles. Flatten as required. This will form a "lip" which will center the finished project on the top of the Mac.

We now need a hole for the power cord, so make a mark 1/2" up along the original centerline from the OEM side. The size hole you drill here is variable depending on whether you use a strain relief or rubber grommet (I imagine you could do without either, but I suggest at least using a grommet—10¢ was never better spent for peace of mind—Electronics Plus sells them individually [see Table 3]). A small grommet takes a 3/8" hole.

The final touch on this plate is to file off any burrs and sand all the edges with 240 grit, or finer, sandpaper. OK! So now on to putting it all together...

Before we start, though, a word about the piece of screen or mesh in the Parts List. If you went to Hechinger's, all you would find are rolls of screen. I wanted to use that fancy stamped aluminum sheet you can also buy there, but that's $10, and I couldn't justify that for a 4x4" piece of a 2x3' item. You CAN get a small roll of screen at Hechinger's, but who needs 10' of screen? Hopefully, most of you can come up with a scrap piece laying around the house. Note I said "laying" and not "in a window!" Seriously though, your best bet is a small hardware store (a dying breed), which will usually sell you a foot for under a dollar.

I was told screening is not ideal for this purpose, as it will be prone to clogging with dust. If your computer room is THAT dusty, then you better move your computer... However, seeing as this device is "removable", it shouldn't be that big a problem to blow out the screen every once in a while. By the way, don't get any bright ideas about reversing the fan and blowing air INTO the Mac, it will be about 10% as effective as sucking the hot air out!

Take the 4x4" piece of screen and tape it in place (inside) over the 3" hole you cut earlier. The four holes for the mounting screws will have to be cut out. The X-acto knife will cut the wires in the screen (one by one!) by simply pressing the blade against each wire and case—cut a small square of screen out around each hole.

Locate the fan under all the debris and cut about 3 1/2" off the end of each wire (be careful here—I am assuming each fan is supplied with the same length leads—there should be just enough wire to wrap around to the opposite side of the fan with about an inch of "slop" left over). Strip about 1/2" of insulation from the end of each lead and tin with rosin core solder (I assume soldering is a skill we are all BORN with...like walking or eating. If these terms are alien to you, there are plenty of good how-to books in your local library!).

Hunt down the rocker switch ("Now where'd I leave that little beggar?!") and install it in the hole in the back, if you haven't already. You might note the "key" (that little what's-it at the bottom of the threads) in the switch—you probably already did when you were making the hole (and thought it was a defect). This is to prevent the switch from rotating. I

cont'd.

don't think we have to worry too much about this, but if you filed or cut a notch in the hole to accommodate the key, good for you!

If the leads of the power cord are not already stripped, strip about 1/2" of insulation off and tin with solder. Thread the power cord through the centering plate (and grommet) and tie a knot about 1 1/2" from the end (this to prevent the cord pulling out).

If you have some 3/16" shrinkwrap, cut about a 1" piece and slip it over one of the leads from the fan. Then twist this lead and one of the power leads together (end-to-end, not a pigtail splice) and solder them together. Slide the shrinkwrap over both and shrink it in place with a match. If you don't have shrinkwrap, then just tape it with electrician's tape (not elegant, but you're not sending it to me for a grade, are you?).

Using hobby or needlenose pliers, bend a loop in the other lead from the fan and crimp it to or loop it through (if you did a good job of tinning the lead) one of the posts of the switch—either one (flip a coin—I don't want to get involved). Solder it in place.

Now the tough one... If you bend a TIGHT loop in the other lead from the power cord you'll be able to crimp it over the other post on the switch. Solder this lead in place. Make SURE there are no "solder hairs" between the two posts of the switch or you'll fail the "smoke test", big time, when you power it up! Time to bolt it all together!! We're almost home.

Turning the fan so the leads coming out of it point towards the front (away from the switch), position it over the holes and bolt it in place using four 5/8" 6-32 machine screws (back to the library!), split lock washers and nuts—or use the nuts and bolts of your choice, as long as they fit, and do the job. I imagine even 3/16" pop rivets would work, but have fun if you ever have to replace the fan.

Lastly, slide the centering plate down the power cord to the knot and position it over the mounting post holes, then screw it in place with the OEM screws.

TA DA! You're done!! Well...almost. Before you go trying it out on your precious Mac, you should test it by plugging it into a wall outlet and powering 'er up (you might want to let someone else do this step if this is your first project—that way, they sue YOU and not me if it blows up!). If this part goes well (and I have no doubt that if you followed directions it will), there follow some final detailing instructions. Unplug it from the wall first, though.

Place your "Cool Hand Mac" in position on top of the Mac—you will find there is a small gap between the centering plate and the bottom of the recess in the handle. Also, if your sawing, cutting, nibbling or other methodology of cutting the profile of your "Cool Hand Mac" was less than ideal, you will find gaps between it and the top of the Macintosh. To remedy this, and as a cosmetic touch also (something that doesn't appear in the photos which accompany this article, but was a later innovation) I recommend you get a roll of 3M outdoor weather strip (#2104—this should be available at most hardware stores which carry 3M products—"Let your fingers do your walking..."). A 3 3/4" piece across the "lip" of the centering plate will seal the gap in the handle area (and provide a "vibration damper" as well). The latter innovation was to run this same weather strip along the edges of the box, where you did your possibly less than ideal chopping, overlapping the edge just a bit (about 1/16" or less). Don't try "bending" it around the 124° diagonal, but just run it straight past about a half inch and then cut it on the same angle (124°) as the diagonal about 1/32" short of it on each side, and THEN run strips down each diagonal with the same overlap(i.e., 1/16" or less). Trimming these parallel with the top strip and the bottom lip (Hey! Poet and don't know it) should produce a nice border, which seals tightly against the top of the Macintosh.

Voila! You now have a slick little device which should add years to the longevity of your Macintosh. I feel the two main components, the switch and fan, are of excellent quality and should hold up very well to daily use. I have been using mine heavily while writing this article, sometimes 12+ hours a day, and neither the fan nor the Mac got hot under the covers (Cool it, Baldridge).

As a final embellishment, seeing as you have all that open expanse on the front "lip" of your "Cool Hand Mac", you might pick yourself up a small cast Gothic figure from Saxon Mfg. (available at Hobbies & Arts, Ltd.—see Table 3) to serve as a sort of hood ornament (or Badge of Courage!). They cost around $1-3, and when posed on a circle of self-adhesive felt will really add a nice touch!

In conclusion, we have built a device which, if you had to go out and buy ALL the tools and parts listed in Tables 1&2, would probably end up costing you around $50. But the majority of this would be for tools and other items which can be used again (for the NEXT "Bill'l Build It!"), so I consider these items more of an "investment", rather than a part of the overall cost. It additionally should pay off in lower maintenance costs for your Mac by increasing reliability and stability of the components. I hope you've enjoyed building it as much as I've enjoyed showing you how to do it...Bye!

Bill is presently a technical writer for the U.S. Air Force, writing documentation and working aids on and for UNIX-based systems. He has been hacking micros since 1978, when he was introduced to the "Joys of Microcomputing" by a friend with a Commodore PET. Bill has previously worked as a machinist and watchmaker(!), and in his spare time operates a Macintosh-based computer graphics workshop called "4-Arts".

WAP FALL TUTORIALS

by Robert C. Platt

WAP's tutorial program provides a chance for members of varying levels of expertise to gain "hands on" instruction on the Apple or Macintosh. Our tutorial program has two parts: regular tutorials which repeat each month and tutorials on specific languages or applications that are offered as necessary. The continuing popularity of these programs attests to the amount of time that instructors spend in preparing for class and the useful training that participants gain from them. Because space is limited, we request that you reserve a spot by calling the office or using the mail order form in the back of the **Journal.** A nominal fee is charged to assure your interest and to defray club expenses. Please let me know if there are any topics you would like to see added to our offerings.

Regular Apple // tutorials

These tutorials are offered on the first, second and third Tuesday of each month at the office from 7:30 to 9:30 pm. If you bring your computer, please arrive 15 minutes early to allow for setup. The cost is $10 if you bring your computer, $15 without. (WAP can supply a monitor, please call the office.)

The first tutorial is designed to familiarize you with common computer terms and help you feel comfortable with your Apple. Session 2 will help you explore the utility programs that came with your computer. If you bring your computer, please bring the Master diskette that came with it (or a copy of it) and a blank disk. (Recent purchasers will have received a ProDOS Utilities Disk, earlier purchasers will have a DOS 3.3 System Master Disk.) Session 3 will demonstrate AppleWorks as a example of word processing, data bases and spreadsheets. If you have a copy of AppleWorks, please bring it. However, Session 3 is useful for anyone contemplating using any brand of word processor, data base or spreadsheet.

Session #1: Welcome to the World of Apple

A. Overview of a computer
   CPU, memory, input and output
   Differences between //e, //c and //gs
B. Using floppy disks - care and handling
C. Running an Application program
   Booting a disk, Ctrl-Open Apple-Reset
D. CATALOG - what's on the disk
E. Other important DOS commands: LOAD, RUN, LOCK, UNLOCK, DELETE and BRUN.
F. Making copies of disks
   - Using the ProDOS formatter, DOS COPYA
   - What are copy-protected disks

Session #2: How to use your Apple Software

A. Initializing a disk - what it does
   - 143K (5.25") or 800K (3.5") of information
   - Different operating systems: ProDOS 8, ProDOS 16, DOS 3.2, DOS 3.3, CP/M, p-System
B. Introduction to ProDOS
   - pathnames, - (smart run), CONVERT
C. Using ProDOS Filer and DOS FID to copy files
D. Disk recovery programs
E. Selected programs from the New Member Disk

Session #3: AppleWorks

A. Word Processing
   - Entering and correcting text
   - Search and replace
   - Special printer features - underline, boldface, etc.
   - Spelling checkers
B. Spreadsheets
   - Entering numbers, text and formulas
   - A simple example
C. Database management
   - Setting up a mailing list

Introductory Macintosh Tutorials

These tutorials repeat each month on the third and fourth Mondays. Please bring your Mac, four blank disks and system disk.

Session #1:

- Checking your software for latest versions,
- The hardware found on the different types of Macs,
- The system folder.
- Disk files and formats.
- Using the finder... copying disks and files, get info, locking files.
- Using software... command keys
- Tools: control panel, set start-up and minifinder.
- Care and cleaning of Mac hardware.

Session #2:

- DA/Font Mover... loading fonts and desk accessories.
- Speeding up the Mac... switcher, RAM disks, TurboCharger, and hard disks.
- Using the desktop.
- Available software and applications.
- Getting the most out of user groups, magazines and books.

One-Time Special Tutorials (these tutorials are not repeated each month)

Introduction to Microsoft Word (Mac)

Saturday, Nov. 15, 1-3 p.m. at USUS

From editing and formatting to more complex functions (divisions, footnotes, etc.) Demos with letter quality and LaserWriter printers. Bring your own Mac and Microsoft Word Mster copy. Rochelle Long has experience typing her doctoral dissertation using Word.

Introduction to Pascal (Apple // or Mac)

Four Saturdays, Nov. 8, 22, Dec 6 and 13, 9-noon.

WAP's Pascal Interest Group is offering its third not-so-annual introductory course in Pascal. It is designed for people with no previous programming background.

Why learn Pascal? After BASIC, Pascal is the most widely used language for programming micros. (For example, *Inside Macintosh* 's programming examples are all in Pascal.

contd.

Wizardry for both the // and the Mac was written in Pascal.) The College Boards have selected Pascal as the language that high school students must learn to prepare for the Computer Science Advanced Placement Tests. Because of Pascal's structure, it is easier to read and write Pascal programs than BASIC programs. Finally, Pascal is more standardized than BASIC, with the result that a Pascal program cna be converted to run on other computers much more easily that programs written in languages such as BASIC. This year, the course will feature Instant Pascal on the Apple // and MacPascal on the Macintosh. Bring your copy of Pascal and a formatted disk to the last three sessions. If you want to be a part of the "structured programming revolution," fill out the registration form in the back of the **Journal.**

Session #1 (Do not bring your machine to the first session.)

I. Introduction to the Pascal language
  A. Characteristics of Pascal
    Data structures
    Program structure and procedures
  B. Comparison to BASIC
II. Declaring Data
  A. Concept of Data Type
    Permissible values
    Permissible operators
    Strong data typing
  B. Constants and variables
  C. Declaring Constants - examples & syntax
  D. Declaring Variables - examples & syntax
III. The Assignment Statement
  A. Expressions
  B. Order of operations
IV. Data Types - Integers
  A. Permissible values
  B. Operators DIV and MOD
  C. Examples
  D. Built-in integer functions

Session #2: (bring your computer to this and remaining sessions. You will write and debug programs in class.)

I. Syntax of a Pascal program.
  A. PROGRAM
  B. BEGIN ... END
II. Elementary Input/Output
  A. Read and readln
  B. Write and writeln
  C. Input -> Acton -> Output
  D. Sample programs using integers
III. Data Type Boolean
  A. Premissible values
  B. Permissible operators: AND OR
  C. Conditionals and Boolean data
  D. Boolean expressions
IV. Character data type
  A. Type CHAR
  B. The ASCII character set
  C. ORD and CHR
V. Strings
  A. Type STRING
  B. The length can change
  C. Built-in functions and procedures: delete, insert, pos, length, copy
  D. Strings vs. characters
VI. Programming examples

Session #4:

I. Procedure Parameters
II. Programming Examples
III. More About Procedures
  A. Syntax of procedure Declarations
  B. Scope
  C. Problem refinement
  D. Divide and conquer
  E. Procedures and Black Boxes: hiding data and action
  F. Concepts
    • Top down development
    • Stepwise refinement
    • Nesting and levels of tasks
    • Scope of identifiers
IV. Records and Files
  A. Declaring records
  B. GET and PUT
V. Where to go from here
  A. Suggested Texts
  B. Modula-2

Postscript for Users (Mac) by Ron Moore
Wednesday, October 22, 7:30 p.m. - 9:30 p.m.

A. Communication with a Postscript device
B. *Inside LaserWriter* examples
C. Outside LaserWriter examples
D. Postscript font and AFM
E. Text processing
F. Graphics
G. Imaging
H. Applications
I. The Postscript language
J. Adobe Corporation

Postscript for Programmers (Mac - the Postscript Tutorial and Reference Manual are highly recommended for this course.)

A. Manuals
B. Forth/ not Forth
C. Devices
D. The language
E. Everthing Graphic
F. Fonts and AFM
G. Dictionaries
H. Operating Systems: Apple/Aldus
I. *Inside LaserWriter*
J. Beyond...

Postscript Implementations on the Macintosh

A. The Apple Dictionary
B. The command-F file
C. Text munging
D. Graphics
E. Image/bits
F. Mac Vec Fonts
G. Adobe/LaserWriter Plus
H. Aldus/Pagemaker
I. Problems, Solutions, Versions
J. Postscript communications

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 I'Hote
( ) 49 I'Hote Story
( ) 50 I'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 ***
( ) 131 Personal/Educ. 2
( ) 132 IAC 19-Utilities F
( ) 133 IAC 20-Pascal&DOS 3.3
( ) 134 New Members Disk
( ) 135 WAPABBS1.1Disk1**

DOS 3.3 contd.

( ) 136 WAPABBS1.1 Disk 2**
( ) 137 IAC 21 Spreadsheet A
( ) 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
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( ) 168 IAC 41&47-AW Util.
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Apple //: The following three WAP tutorials are being offered to **Apple //** owners on the first three Tuesday evenings of the month 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 yo 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" a... will be repeated monthly. A revised outline of the tutorials is given elsewhere in this issue.

( ) October 7 - **WELCOME TO THE WORLD OF APPLE** - ( ) November 4
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The fee for each tutorial is $10.00. You are urged to bring an Apple, monitor and disk drive. (Monitors are available for the 1st 5 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 to 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 fee for two tutorials is $30.00. You are strongly urged to bring your Macintosh. These tutorials fill up quickly - call the office to verify space before mailing in your registration.

( ) Monday, October 20 and 27
( ) Monday, November 17 and 24

.....

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 elsewhere in this issue. The fee for these tutorials is $15 for each session within each tutorial.

( ) **dBase II - Lee Raesly - Saturday October 18 and November 1. 9 - 12 Noon.** Total fee $30 ($15 per session).
Learn to use Ashton Tate's full powered data base for Apple II's that run CP/M. dBase II allows the user to program special inquiries so as to produce ready-to-run applications.

( ) **Postcript for Users - Ron Moore - Wednesday, October 22. 7:30 - 9:30 PM.** Fee $15.

( ) **Postscript for Programmers - Ron Moore - Wednesday, November 5. 7:30 - 9:30 PM.** Fee $15.

( ) **Postscript Implementations on Macintosh - Wednesday, November 19. 7:30 - 9:30 PM.** Fee $15.

( ) **Pascal Programming - Saturdays, November 8, 22, December 6, 13. 9 - 12 Noon.** Fee $60 ($15 per session).
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( ) **Wordstar - Lee Raesly - Saturday, January 10, 1987. 9 - 12 Noon.** Fee $15.
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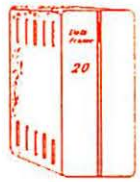

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