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Washington Apple Pi



The Journal of Washington Apple Pi, Ltd.

Volume 9

August 1987

Number 8

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- MS-DOS on the Apple II (Apple II News and Notes)
- I Love Apple Music: Part 3
- T * R * A * S * H
- Sci. & Tech. Writing on the Mac (pages 58-62)
- Quark XPress: A Review
- Softviews: APL*Plus

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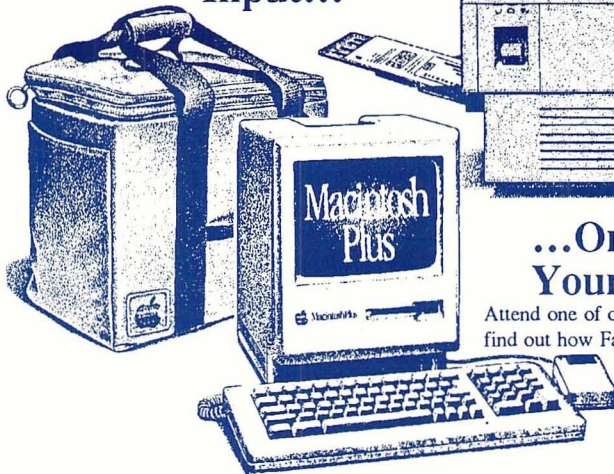
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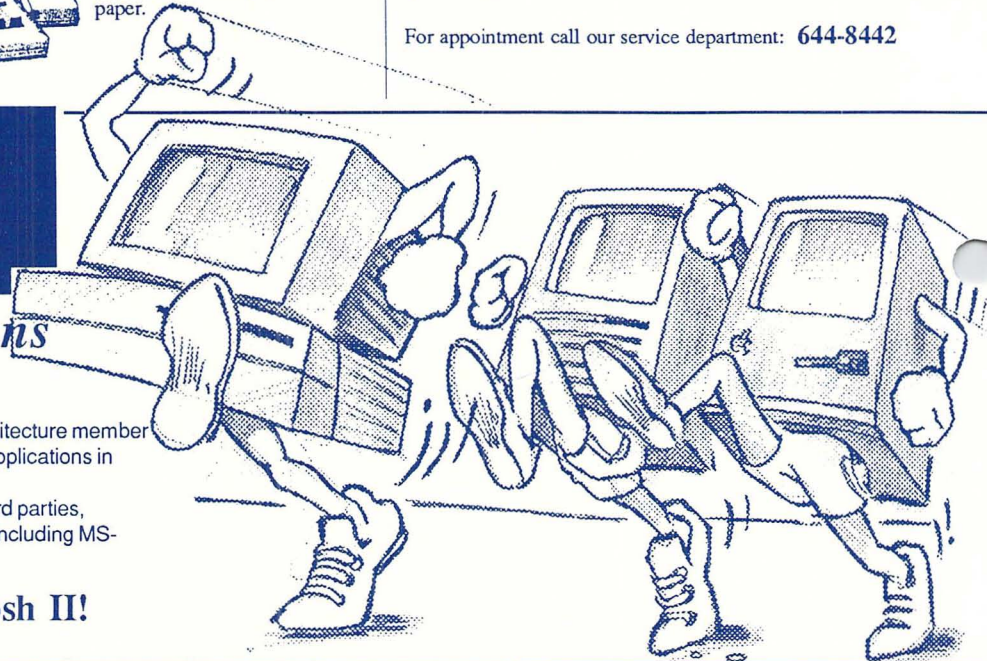
For appointment call our service department: 644-8442

The New Macintosh II Joins the Race...

...And This One Means Business!

The Macintosh II is the new high performance, open architecture member of the Macintosh family. And is designed for advanced applications in business, desktop publishing, science, and engineering. Using hardware and software options from Apple and third parties, Macintosh II can support other operating environments, including MS-DOS and AT&T UNIX.

Come in and See the Macintosh II!

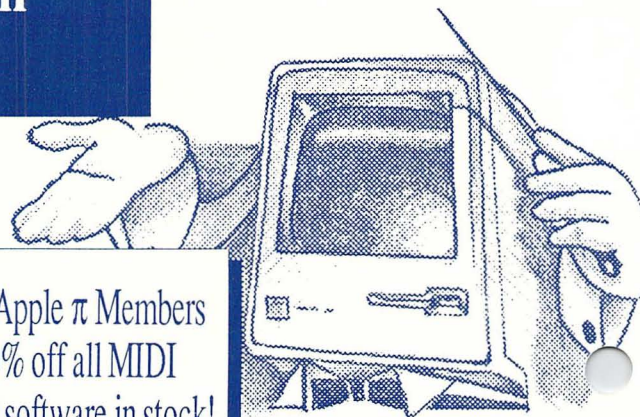


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Opcode MIDI interfaces connect the Macintosh computer to any music synthesizer with MIDI (Musical Instrument Digital Interface). From the time music and computers began to mix, musicians have dreamed of a music production system with the power, graphics and user-friendly interface that the Macintosh delivers. Opcode makes it a reality with hardware and software. As authorized resellers of Opcode peripherals we carry:

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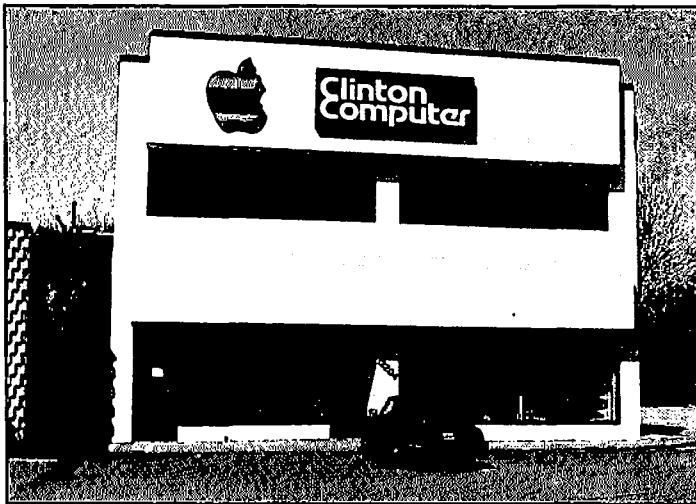
Clinton Computer -- A Full-Service Dealership!

Five Stores Cover Metro Area

Clinton Opens Fifth Store -- in Rockville

Clinton Computer, the Metro area's largest independent retail computer dealer, now has five stores -- in Clinton, Rockville and Laurel, MD, and in Vienna and Alexandria, VA. We are authorized dealers for Apple™ microcomputers at all five locations.

In addition, our Clinton and Alexandria stores are authorized IBM™ Personal Computer dealerships. We also sell printers, monitors, software, supplies, and service.



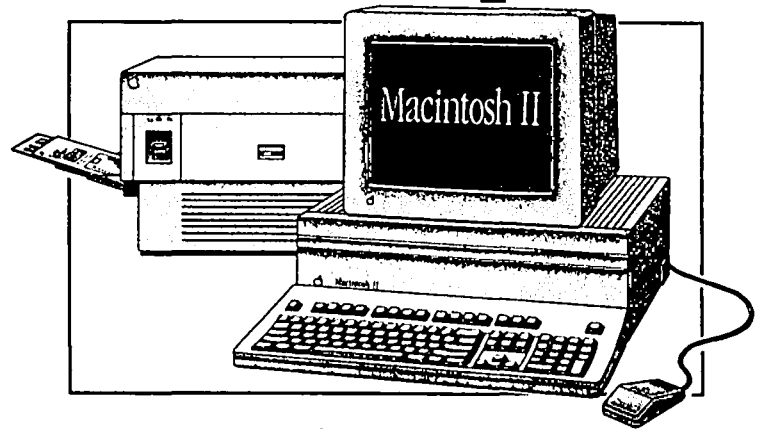
Clinton Computer's New Store at 12204 Rockville Pike

The company also operates a huge 3600-square-foot service and repair facility in Clinton, with satellite repair shops at the Laurel, Vienna, Rockville and Alexandria stores.

Clinton Computer was founded in 1978 by co-owners Art Lundquist and Chuck Perilli. It began as a two-man consulting firm on the fourth floor of an office building and has grown into a multi-million-dollar retail business.

DISCOUNT POLICY FOR WASHINGTON APPLE PI MEMBERS

CLINTON COMPUTER offers Washington Apple Pi members a 25% DISCOUNT OFF THE LIST PRICE on all non-allocated Apple brand peripherals (no CPUs), software and AppleCare. For upgrades, the 25% discount applies to both the parts and normal labor rate. Discount is available to persons who have been Pi members for at least 3 months. Discount cannot be applied retroactively. Pi members need to present their cards up-front. No phone or mail orders, please. Discount cannot be used in combination with other promotions. Products on allocation from Apple are excluded from this offer. Clinton Computer reserves the right to change this policy at any time.



Look into the New Macintosh II

The new Macintosh™ II. There's a lot to look into. And it's easy. Just lift off the cover, and you're inside a whole new world. A world that makes it simple for you to adapt, expand, upgrade, and configure the Macintosh II to meet your needs. And with color, too!

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Come in and take a close look at the new Macintosh II. There's a lot more to it than meets the eye -- inside and out!

Training Available

Clinton Computer offers a comprehensive training program on both Apple™ and IBM™ microcomputers. Classes, currently scheduled through October, include New Owners' Workshops, Mac Graphics, AppleSoft BASIC, AppleWorks, Lotus 1-2-3, Microsoft Works and more!

For registration information, contact Paula Majerowicz at our Laurel location -- 953-1110.

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THE NATIONAL APPLEWORKS USERS GROUP
presents

Two great ways to expand your AppleWorks horizons...

Attend an AppleWorks seminar...

AppleWorks: Beyond the Basics

Featuring Dr. Warren Williams

Saturday, August 29, 1987 10 am - 3 pm
Tyson Westpark Hotel
8401 Westpark Drive
McLean, Virginia 22102

Dr. Warren Williams, a nationally recognized AppleWorks authority, offers tips and techniques that benefit all AppleWorks users. He describes short-cuts, examples, and uses for this powerful program. This half-day seminar provides an opportunity for you to get answers to your questions from an AppleWorks expert. Attendees receive a written summary of the ideas presented in this informative meeting.

Seminar Program...

9:30 - 10:00	On-site Registration
10:00 - 11:00	General Problems, Disk and Space Management
11:00 - 12:00	Word Processing: Tips, techniques, and suggestions
12:00 - 1:00	Break
1:00 - 2:00	Data Base: Tips, techniques, and suggestions
2:00 - 3:00	Spreadsheets: Tips, techniques, and suggestions

Fee...

	thru August 14	after August 14
NAUG Members	\$55	\$65
Non-members	\$70	\$80
Registration and Membership	\$79	\$89

About the speaker...

Dr. Williams' recent presentations include:

"Advanced AppleWorks: Tricks and Techniques" Michigan Association of Computer User's in Learning - Kalamazoo, MI, March, 1986.

"AppleWorks: Doing What the Program Can't Do." Association of Educational Data Systems - New Orleans, LA, April 1986.

"AppleWorks: Undocumented Features." National Educational Computer Conference - San Diego, CA, June, 1986.

Dr. Williams has presented AppleWorks seminars in Chicago, Denver, Detroit, St. Louis, Philadelphia, and other major cities.

Comments from previous seminars...

"Excellent! Gave the information I need!"
Ron Groter, St. Louis, Mo.

"Learned a lot of tips to speed up operations."
W. Bayer, Detroit, MI

"I am just a beginner, but now I know what [AppleWorks] can do."
Donna Ziegler, Aurora, Co

"The presentation was easy to follow and the printed examples were good aids."
P.N.C., Ann Arbor, MI

"Very helpful advice, pleasantly presented."
S. Crane, Westminster, Co

Read an AppleWorks newsletter...

The AppleWorks Forum

This 20+ page monthly newsletter is one of the many benefits of your membership in the National AppleWorks Users Group.

Here are some of the articles that appeared in our 24 page June issue:

- Printer codes for over 60 popular printers.
- How to print three line headers at the top of each page.
- A review of SchoolWorks.
- How to use the protection feature in spreadsheets.
- How to improve your spreadsheets with the @IF function.
- Three ways to enter repeated data into the data base.
- There's a bug in ProDOS 8 version 1.3.
- An update on the Pinpoint desk accessories.

NAUG maintains a library of public domain disks and members share an electronic bulletin board. A one-year membership costs \$24 for twelve months of the *AppleWorks Forum*.

Special Savings

Members of the National AppleWorks Users Group receive a \$15 discount on the seminar registration fee.

Make checks payable to:

National AppleWorks Users Group
Box 87453, Canton, Michigan 48187
(313) 397-1594

Registration /Membership Form

Name _____

Address _____

City _____ State _____ Zip _____

Phone () _____

NAUG membership (\$24)

Seminar registration \$ _____

Names of other attendees:

_____ NAUG member? _____

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Amount enclosed _____

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Satisfaction guaranteed or your money back!

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EDITORIAL

** IN MEMORIAM **

As we go to press we have just learned of the untimely death of fellow Pi member Richard Rowell. Richard has been a long-time active volunteer in the AppleWorks SIG, the TCS, an instructor in the tutorial program, and a Journal author. He was recently elected to the Board of Directors. We are stunned and bereaved by this loss. Our thoughts go out to his family and friends.

Goodbye, Richard, we will miss you.



PRESIDENT'S CORNER

by Tom Warrick

This month we want to recognize the people you elected to the Washington Apple Pi Board of Directors for the coming year. Last month I mentioned the officers— myself, *Ray Hobbs* (VP-Apple II), *Bob Platt* (VP-Macintosh), *Peter Combes* (Secretary) and *Ed Myerson* (Treasurer), all of whom ran unopposed. To no one's

surprise, we were all re-elected, although *Lee Raesly* came in a "close" second for Vice President for Macintosh—receiving one write-in vote!

The seven Directors-at-Large you have elected are *Bruce Field*, who has previously served the Pi as Vice President for Apple II and Vice President for Special Interest Groups ("SIGs"); *Priscilla Myerson*, who has served as assistant treasurer for many years and who was elected a Director-at-Large by the Board last term to fill a seat left vacant on the Board when *Mike Ungerman* was transferred to Florida by the United States Navy; *Lee Raesly*, the Telecommunications System ("TCS") Operator, a Director-at-Large for the last several years and one of WAP's most familiar faces (also one of WAP's familiar hats); *Eric Rall*, a newcomer to the Board and one of the ace programmers on the Telecommunications System; *Richard Rowell*, who has been very active in the AppleWorks SIG and the TCS; *Jay Thal*, a long-time Director and, for many years, chair of the Disabled SIG; and *Lynn Trusal*, a newcomer to the Board but no newcomer to the many who have enjoyed Lynn's monthly column in the Journal.

In addition to these officers and directors, there are also three *ex officio* members of the Board of Directors who deserve recognition: *Jim Little*, Head Disk Librarian; *David Morganstein*, our Past President; and *Bernie Urban*, our Journal Editor.

This also gives me the opportunity to reiterate an important part of Pi philosophy: every Pi member, not just those who are formally a part of the Board, is welcome to come to all Board meetings and participate fully in the discussions. Indeed, virtually all votes are taken with the participation of everyone present, not just formal Board members. WAP Board of Directors meetings are usually held at 7:30 p.m. on the second Wednesday of each month (except the third Wednesday in August inasmuch as MacWorld Expo is being held in Boston the week of the second Wednesday) at the Washington Apple Pi office in Bethesda.

We want to thank our Elections Committee, headed by *Paul Schlosser*, with the able assistance of *Dale* and *Kelly Smith*. These generous people devoted a beautiful Saturday in June to counting the 1,150 ballots cast in this election. Also, we should thank *Richard Rowell*, who wrote a macro routine to enable the

committee to use AppleWorks to count the ballots quickly.

There were a number of interesting comments on some of the ballots. Many had kind words for the Pi and the people who help run it, for which we thank you. Some half-a-dozen people commented that there weren't enough women running. As has been observed in the past, this is entirely a function of who runs for office, since any Pi member is eligible (and encouraged) to run. I, for one, would like to see more women (and other non-white males!) run for Pi office—as is apparent at meetings, Washington Apple Pi's membership is predominantly white and male (this is true of virtually every other computer user group, incidentally, and does not reflect anything about the Pi specifically). Diversity of backgrounds and views on the Board is an important way to overcome this limitation. I observe that this year every single woman who ran was elected—a statement you cannot make about the men who ran! Interestingly, many of the people who made these comments on their ballots also voted for *Lynn Trusal*.

A final note: the *GameSIG* is planning its annual games extravaganza for the August Pi meeting on August 22. Always one of our most popular meetings, this GameSIG program promises to be another great show. We may even get to see GameSIG Chairman Emeritus *Ron Wartow!* ☺

GENERAL INFORMATION

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

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

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

Current office hours are:

Monday - Friday	- 10 AM to 2:30 PM
Thursday	- 7 PM to 9:00 PM
Saturday	- 12 Noon to 3:00 PM

Please note that the office is closed on all U.S. Government holidays. Members are asked to place phone calls to the office during the day hours Monday - Friday whenever possible, since only one person staffs the office during evening hours and on Saturday.

* The office will be closed on Tuesday evening during July and August.

APPLE TEAS

It's easy to HOST AN APPLE TEA! Would you like to gather some Apple users from near and far to discuss a topic you're interested in, or one that you'd like to know more about? Apple Teas are opportunities for Apple users to get together in small groups (from 3 to 12) to learn more about a specific area of Apple computing, expand each other's knowledge, ask questions and share tips.

To host an Apple Tea...

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

2. Obtain a resource person, if you like. The WAP Hotline is a good place to start searching for a knowledgeable and helpful person.

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, e.g. school or church.

5. Any questions, call Amy Billingsley at 622-2203, or George Sall at 768-0212. If your mind is made up, be prepared to give 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 teas are scheduled for April:

Washington Apple Pi

Bethesda Apple Tea

Saturday, September 26, 1:30 - 3:30 PM

(After the USUHS WAP and AppleWorks SIG)

AppleWorks and its RAM-ifications:

Uses of the Ram Disk, Revisited

with Resources Ken DeVito and George Sall

Stone Ridge/Country Day School

9101 Rockville Pike, Bethesda MD 20852

(Next to Navy Medical Center)

Refreshments. Bring computer if convenient.

RSVP to Sister Laurine Haley, (O) 657-4322, (H) 897-5666.

Directions from USUHS: Turn right on Jones Bridge Road and right again on Rockville Pike (Wisconsin Avenue extended). Turn right on Cedar Lane and right again at 2nd driveway by the tennis courts. Come to first circle on right. Park on circle. Look for WAP signs on door and up the stairs to Lower School Library, 1st level.

Calling All Scientists!

Mark Your October Calendar (Plan Ahead)

Scientific Applications for the Macintosh

Saturday, October 10th, 2:00 - 4:00 PM

The Seelig Labs

1405 De Sale Street, Vienna VA 22180

RSVP Fred Seelig (703) 849-9408. Bring your Mac and extension cord, and a demo program you think might be of interest to fellow engineers or scientists. Let's discuss the usefulness of the Macintosh in a scientific environment as well as the impact of the Macintosh II workstation on science and engineering. See next month's Journal for directions. ☺

VOLUNTEERS NEEDED

IIGS Disk Copying. We have had several people step forward but a few more are needed. Let us know if you have a GS and can help make disk copies.

Take Meeting Minutes. In the past we have had someone who attended the meetings regularly who was willing to write up a brief description of events for publication in the journal. This helps all those who were not able to attend. If you come regularly and would be willing to take a few hours a month to prepare a summary, please offer your help.

HOT LINE Volunteers. With all the new products that have begun appearing, we can use some new volunteers. How about folks who can answer questions about:

Mac II

GS Paint programs

Macintosh Programmers Workshop

Apple Programmers Workshop

Trapeze

InBox

Intermail

Appleshare

Apple Teas. If you would like to host an Apple Tea, call Amy Billingsley or the office. Teas are small informal get togethers, usually with a theme such as desktop publishing or discussing a particular program, like Appleworks. You need not be able to lead a discussion. We can supply the "experts" for that. Just serve as host or hostess for one evening.

SYSOPs. The TCS can always use more Sysops to host a board. Leave a message on the TCS or call Lee Raesely. ☺

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:

August 22

- GameSIG Extravaganza

September 26

- TBA

The Executive Board of Washington Apple Pi meets on the second Wednesday of each month at 7:30 PM at the office. However, in August the date is the 19th, the third Wednesday.

Please note that we have an early, early deadline for articles for the September Journal—July 31. Your editors would like to attend the MacWorld Expo in Boston on August 11-13 and hopefully have a few days vacation afterwards.

JOB MART

Help Wanted

Sales Help Wanted. Enthusiastic salesperson to work full time at a fast-growing Mac retail store in Crystal City. Must have strong Mac background, including desktop publishing and database programs. Send resume to MacSource, 2121 Crystal Drive, Arlington VA 22202.

Institute seeking individuals with expertise in using desktop publishing software on a Macintosh SE to produce a variety of publications from simple brochures to book length manuscripts. Production activities include: editing proofreading, in-putting copy, page layout, cover design, and producing camera-ready copy on the Macintosh using an Apple LaserWriter Plus. If interested please send resume to NCEMCH, 38th and R Streets NW, Washington DC 20057.

Office Manager for small aviation association needs your Mac talent! Professional, well organized and efficient individual with excellent oral and written skills should apply. This job will keep you challenged with its great variety of tasks. Competitive salary and benefits. Send resume to Robert T. Warner, EVP, NASAO, 777 - 14th Street NW, Suite 717, Washington DC 20005.

Gaithersburg print shop looking for desktop publishing person with PageMaker/Word/Paint skills to assist in preparation of flyers, newsletters, business cards, etc. Candidates must have Macintosh expertise, design, layout and paste-up experience. Part time—flexible hours. Resumes to: Strokes & Strategies, Inc., P.O. Box 5113, Laytonsville, MD 20879. ☎

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.

MINUTES

Executive Board Meeting - June 10, 1987

Bernie Urban and Lynn Trusal volunteered to collaborate with the National Computer Graphics Association in planning a conference on PC graphics in November. WAP will have a booth at the MacWorld Expo on August 11-13; additional vendors will not be allowed within the booth. Ed Myerson presented the FY88 Expense and Revenue budget to the Board. Suggested capital budget items included a IIGS for the office, upgrading the //e's, TCS equipment, a replacement video projector, books for the library, a bed scanner, a digitizing camera, a CD WORM drive. The Expense and Revenue Budget was approved. The dealer reception went well. WAP is being invited to participate in the Capitol Microcomputer Trade Show being held in the fall.

Executive Board Meeting - July 8, 1987

Tom Warrick greeted the new directors and reviewed their

CLASSIFIEDS

NOTICE: During the last garage sale, I sold someone a "WILDCARD" copy card for an Apple II. I realized after I returned home that I forgot to give him the software that went with it. Please call or write Bob Martz, 7070 MacBeth Way, Sykesville, MD 21784. (301) 795-5689.

WANTED: Apple 300/1200 Modem Users Manual Part Two for Mac Owners. I bought this modem at the garage sale and the manual that came with it was Part Two for Apple II Owners. Would anyone let me copy their Mac Owners Part Two? Call Susan Mechan at 234-5151 evenings.

FOR SALE: Macintosh Plus, DataFrame 40XP, Mac 512E, Apple HD20. All equipment in excellent condition. Hardly used by a little old ... (you'll never believe that one). Call David (301) 972-4263.

FOR SALE: New "Simply Perfect" for Apple II. 5 1/4" disk. High powered word processing, spell check, database, mail merge (highly recommended by Lee Raesly). \$50 (selling at \$100 by mail houses). Call Amy Billingsley 622-2203.

FOR SALE: SIDER 10MG hard disk, will format and assist with the installation of your software. \$450. **WANTED:** Used Apple //c green monitor and stand. Call Tom evenings only 935-5520.

FOR SALE: CADD-PenPlotter Houston Instrument DMP52MP, 14 pen 'D' size plotter. Call for price (301) 424-3942.

FOR SALE: Imagewriter 15-inch carriage. Call for price (301) 424-3942.

FOR SALE: 400K External disk drive for Macintosh. \$100 or best offer. Call Ed, 703-548-7443.

FOR SALE: Applied Engineering Apple //c External Clock. Purchased Sept. 1986; mint condition with original box, extra software. Asking \$60. Call Howard at (301) 460-5796, evenings. ☎

responsibilities. Lee Raesly was unanimously reappointed as TCS director. James Burger will be resigning as General Counsel to WAP, prior to taking a position with Apple, Inc. The Board expressed its appreciation of his service to WAP. The August Board meeting will be held on August 19. Lee Raesly reported on the work of the TCS. Public school membership in WAP was discussed. Rhoda Zion, Executive Director of "Say Thanks America" asked for the help of WAP in using the two Macs and the LaserWriter which Apple has donated to them. The WAP operating budget was approved. Methods of reducing the Journal printing costs were discussed. The capital budget was modified to include a IIGS, //e enhancement, a video projector, and library material. The next Directors' Retreat may be held in September. A design for WAP pins was approved. ☎

*** August 1987 ***

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	The early, early deadline for September Journal articles is July 31.					1 Making Music With Your Mac Tutorial - Office 10-12 Noon
2	3 PI SIG 7:30 PM Office	4	5 Mac Progrms. 7:30 PM Office; dPub SIG 7:30 PM PEPCO	6 GameSIG 7:30 PM Office	7 Sat. Aug 8 --> Frederick Slice; Annapolis Slice; Music SIG -->	8 WordPerfect Office 9-12 AM; Disk Drive II Office 1-4 PM
9	10 Introduction to Macintosh Tutorial - Office 7:30 - 9:30 PM	11	12 Note change in Executive Board to 3rd Wed.	13 Stock SIG 8:00 PM Office	14	15
16	17 Intermediate Mac Skills Tutorial - Office 7:30 - 9:30 PM	18	19 Executive Board-7:30 PM; FedSIG-7:30 PM Apple Reston	20 Pascal SIG 8:00 PM Office	21	22 WAP Meeting USUHS - 9 AM GameSIG
23	24 Becoming a Mac Power User Tutorial - Office 7:30 - 9:30 PM	25 Mutual Fund Sub-Group (Stock SIG) 8:00 PM Office	26 No Apple /// Meeting in August	27 No EDSIG Meeting in August	28	29
30	31					

*** September 1987 ***

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1 Apple II Beginning Tutorial #1 7:30-9PM Office	2 Mac Progrms. 7:30 PM Office; dPub SIG 7:30 PM PEPCO	3 GameSIG 7:30 PM Office	4	5
6 Deadline for Journal Articles is Sept. 8 -->	7 Labor Day Federal Holiday Office Closed	8 Apple II Beginning Tutorial #2 7:30-9PM Office	9 Executive Board 7:30 PM Office	10 Stock SIG 8:00 PM Office	11	12 Frederick Slice; Annapolis Slice; Music SIG
13	14 Introduction to Macintosh Tutorial - Office 7:30-9:30 PM	15 Apple II Beginning Tutorial #3 7:30-9PM Office	16	17 Pascal SIG 8:00 PM Office	18	19
20	21 Intermediate Mac Skills Tutorial - Office 7:30-9:30 PM	22 Mutual Fund Sub-Group (Stock SIG) 8 PM Office	23 Apple /// 7:30 PM Office	24 EDSIG 7:30 PM Office	25	26 WAP Meeting USUHS 9:00 AM
27	28 Becoming a Mac Power User Tutorial - Office 7:30-9:30 PM	29	30			

SIGNEWS

Apple IIGS SIG meets at 8:00 AM before the regular WAP meeting in the USUHS cafeteria. For information call Ted Meyer at (703) 893-6845.

Apple /// SIG meets on the 4th Wednesday of the month at 7:30 PM in the WAP office. There will be no meeting in August. The next meeting will be on September 23.

AppleWorks SIG offers two meeting options: 8:00AM before the regular WAP meeting and 12 Noon after the meeting. Attend either or both.

DisabledSIG - Call Jay Thal at 344-3649 for info.

dPub SIG (Desktop Publishing) meets on the 1st Wednesday of the month at 7:30 PM in the PEPCO Auditorium at 1900 Penn. Ave., NW. The next meeting is on August 5.

EDSIG (the education special interest group) meets on the 4th Thursday at 7:30 PM at the office. No meetings in July and August.

Fed(eral) SIG will meet on August 19 and October 21 at the Apple Computer Federal Office in Reston, VA.

GameSIG meets on the 1st Thursday of the month at the office, 7:30 PM. The next meeting will be on August 6.

Mac Programmers meet on the 1st Wednesday of the month at the office, 7:30PM. The next meeting is August 5.

MusicSIG meets on the 2nd Saturday of each month. Call Ray Hobbs 490-7484, or Gary Larson 337-4267, for details.

PIG, the Pascal Interest Group, meets on the 3rd Thursday of each month at 8:00 PM at the office. New and prospective users are welcome. The next meeting will be on August 20.

PI-SIG (Program Interface) meets on the 1st Monday of the month at 7:30 PM at the office. See their news elsewhere.

Stock SIG meetings are on the second Thursday of each month at the office, 8 PM. The next meeting is on August 13.

Telecom SIG meets after the regular meeting on the 4th Saturday of the month.

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 users are reminded that calls regarding commercial software packages should be limited to those you have purchased. Please do not call about copied software for which you have no documentation. Telephone numbers are home phones unless otherwise specified. When requests are made to return calls, long distance will be collect.

General	Apple II John Day (301) 621-7543 Dave Harvey (703) 578-4621 Robert Martin (301) 498-6074		Apple II Word Processors contd. Word Handler Jon Vaupel (301) 593-3316 Word Perfect James Edwards (301) 585-3002 Henry Donahoe (202) 298-9107 Leon Raesly (301) 439-1799 Dana Riel (301) 350-3283
Accounting Packages Accountant(Dec.Sup.) BPI Programs	Mark Pankin (703) 524-0937 Jaxon Brown (301) 350-3283 Otis Greever (615) 638-1525		Word Star Leon Raesly (301) 439-1799 Dana Riel (301) 350-3283
Home Accountant Howardsoft (Tax)	Leon Raesly (301) 439-1799 Otis Greever (615) 638-1525 Bernie Benson (301) 951-5294		Macintosh Terry Monks (703) 471-4610 Michael Yourshaw (703) 534-2077 Donald Schmitt (717) 334-3265
APPLE SSC Apple TechNotes AppleWorks	Joe Chelena (703) 978-1816 Ken DeVito (703) 960-0787 Charles Baumgardner (703) 538-2316 Ken Black (703) 369-3366 Morgan Jopling (301) 721-7874 John Day (301) 621-7543	General (eve. & wkends only)	Data Bases Helix Jim Berry * (703) 662-0640 Harvey Levine (301) 299-9380 John Love (703) 569-2294 Paul Tabler (703) 278-8708 J.T.(Tom) DeMay Jr. (301) 779-4632 Tom Parrish (301) 654-8784
AppleWorks Data Base Apple //c Communications Packages	Dave Harvey (703) 578-4621 Bernie Benson (301) 951-5294	Data Bases MS-File Omnis 3 and 3+ OverVue	Desktop Publishing & Graphics ReadySetGo Jay Rohr (301) 655-0875 Jim Graham (703) 643-1848 Marty Milrod (301) 464-5981 Jon Hardis (301) 330-1422 John Day (301) 621-7543 Tom Berilla (301) 434-3256 Tom Parrish (301) 654-8784 Mark Miani (202) 333-0098 Jay Lucas (703) 751-3332 Jon Hardis (301) 330-1422 Joyce C. Little (301) 321-2989 Herb Schwartz (301) 983-0534 Michael Yourshaw (703) 534-2077 John Love (703) 569-2294 David Morganstein (301) 972-4263 Bob Pulgino (202) 797-0879 David Morganstein (301) 972-4263 Mark Pankin (703) 524-0937 Jim Graham (703) 643-1848 Dick & Nancy Byrd (703) 978-3440 John Boblitz (301) 356-9384 John Love (703) 569-2294 Walt Francis (202) 966-5742 Ray Hobbs (BBS) (301) 490-7484 Jim Graham (703) 643-1848 Tom Parrish (301) 654-8784 Marty Milrod (301) 464-5981
ASCII Express XTALK CP/M Comm.	Paul Bublitz (301) 261-4124 John Staples (703) 255-6955 Ray Hobbs (BBS) (301) 490-7484 Jim Kellock (day) (301) 986-9522 Leon Raesly (301) 439-1799 Leon Raesly (301) 439-1799 Bill Etue (703) 620-2103 Ginny Spevak (202) 362-3887 John Staples (703) 255-6955	Inside Mac LISA/Mac XL MacDraw	MacLion (DBMS) MacProject MacTerminal Magic Power Point Programming MS-BASIC Spreadsheets & Graphics Excel
Data Bases dBase II	Tom Vier (BBS) (301) 986-8085 Leon Raesly (301) 439-1799 Jaxon Brown (301) 350-3283 Otis Greever (615) 638-1525	MacLion (DBMS) MacProject MacTerminal Magic Power Point Programming MS-BASIC Spreadsheets & Graphics Excel	Multiplan
dBase II & III	Tom Vier (BBS) (301) 986-8085 Leon Raesly (301) 439-1799 Jaxon Brown (301) 350-3283 Otis Greever (615) 638-1525	MacLion (DBMS) MacProject MacTerminal Magic Power Point Programming MS-BASIC Spreadsheets & Graphics Excel	Sidekick ThinkTank
Data Perfect PFS	Tom Vier (BBS) (301) 986-8085 Leon Raesly (301) 439-1799 Jaxon Brown (301) 350-3283 Otis Greever (615) 638-1525	MacLion (DBMS) MacProject MacTerminal Magic Power Point Programming MS-BASIC Spreadsheets & Graphics Excel	Word
Q-Pro-4 Hard Disks	Tom Vier (BBS) (301) 986-8085 Leon Raesly (301) 439-1799 Jaxon Brown (301) 350-3283 Otis Greever (615) 638-1525	MacLion (DBMS) MacProject MacTerminal Magic Power Point Programming MS-BASIC Spreadsheets & Graphics Excel	Games - Apple II Games - Mac IBM
Corvus & Omninet Corvus Sider	Tom Vier (BBS) (301) 986-8085 Leon Raesly (301) 439-1799 Jaxon Brown (301) 350-3283 Otis Greever (615) 638-1525	MacLion (DBMS) MacProject MacTerminal Magic Power Point Programming MS-BASIC Spreadsheets & Graphics Excel	Lotus 1-2-3
Languages (A=Applesoft, I=Integer, P=Pascal, M=Machine)	Louis Biggie (301) 967-3977 Peter Combes (301) 251-6369 Jeff Dillon (301) 422-6458 Richard Langston (301) 869-7466 Leon Raesly (301) 439-1799 Richard Untied (609) 596-8816 John Love (703) 569-2294 Ray Hobbs (BBS) (301) 490-7484 Michael Hartman (301) 445-1583 Bruce Field (301) 340-7038 Ray Hobbs (BBS) (301) 490-7484 John Day (301) 621-7543	Math/OR Applns. Modems Anchor Mark 12 Apple Inc. Modem BLZCOMP Modem Hayes Smartmodem Smartcom I Music Systems Printers General	General Charles Don Hall (301) 864-2715 Ron Wartow (301) 654-4439 Ray Hobbs (BBS) (301) 490-7484 Leon Raesly (301) 439-1799 Walt Francis (202) 966-5742 Ray Hobbs (BBS) (301) 490-7484 Mark Pankin (703) 524-0937
A A A,I A A A,I,M A,I,M M P Forth MS Basic Monitor, RGB Operating Systems	John Love (703) 569-2294 Adam Robie (301) 460-6537 Richard Untied (609) 596-8816 Ray Hobbs (BBS) (301) 490-7484 Leon Raesly (301) 439-1799 Ray Hobbs (BBS) (301) 490-7484 Leon Raesly (301) 439-1799 John Love (703) 569-2294 Thomas O'Hagan (301) 593-9683 Carol Thomas (301) 424-1266 Leon Raesly (301) 439-1799 Walt Francis (202) 966-5742 Walt Francis (202) 966-5742 Leon Raesly (301) 439-1799 Leon Raesly (301) 430-1799 Terry Prudden (301) 933-3065 Walt Francis (202) 966-5742 Dianne Lorenz (301) 530-7881 Leon Raesly (301) 439-1799 Harris Silverstone (301) 435-3582 Neil Muncy Can. (416) 298-3964 Leon Raesly (301) 439-1799 Joyce C. Little (301) 321-2989 Jim Graham (703) 643-1848 Peter Combes (301) 251-6369 Gene Carter (202) 363-2342	Math/OR Applns. Modems Anchor Mark 12 Apple Inc. Modem BLZCOMP Modem Hayes Smartmodem Smartcom I Music Systems Printers General	Jeremy Parker (301) 229-2578 John Day (301) 621-7543 Jeremy Parker (301) 229-2578 Bernie Benson (301) 951-5294 Harmon Pritchard (301) 972-4667 Ray Hobbs (BBS) (301) 490-7484
Apple DOS	John Love (703) 569-2294 Adam Robie (301) 460-6537 Richard Untied (609) 596-8816 Ray Hobbs (BBS) (301) 490-7484 Leon Raesly (301) 439-1799 Ray Hobbs (BBS) (301) 490-7484 Leon Raesly (301) 439-1799 John Love (703) 569-2294 Thomas O'Hagan (301) 593-9683 Carol Thomas (301) 424-1266 Leon Raesly (301) 439-1799 Walt Francis (202) 966-5742 Walt Francis (202) 966-5742 Leon Raesly (301) 439-1799 Leon Raesly (301) 430-1799 Terry Prudden (301) 933-3065 Walt Francis (202) 966-5742 Dianne Lorenz (301) 530-7881 Leon Raesly (301) 439-1799 Harris Silverstone (301) 435-3582 Neil Muncy Can. (416) 298-3964 Leon Raesly (301) 439-1799 Joyce C. Little (301) 321-2989 Jim Graham (703) 643-1848 Peter Combes (301) 251-6369 Gene Carter (202) 363-2342	Math/OR Applns. Modems Anchor Mark 12 Apple Inc. Modem BLZCOMP Modem Hayes Smartmodem Smartcom I Music Systems Printers General	Walt Francis (202) 966-5742 Leon Raesly (301) 439-1799 John Day (301) 621-7543 John Day (301) 621-7543 Jeff Steckluh (703) 979-8249 John Day (301) 621-7543 Jeff Dillon (301) 662-2070 Michael Proffitt (301) 874-2270 Dan Robrish (301) 530-4202 David Morganstein (301) 972-4263 Robert Wood (703) 893-9591 Dave Harvey (703) 578-5621
CP/M	John Love (703) 569-2294 Adam Robie (301) 460-6537 Richard Untied (609) 596-8816 Ray Hobbs (BBS) (301) 490-7484 Leon Raesly (301) 439-1799 Ray Hobbs (BBS) (301) 490-7484 Leon Raesly (301) 439-1799 John Love (703) 569-2294 Thomas O'Hagan (301) 593-9683 Carol Thomas (301) 424-1266 Leon Raesly (301) 439-1799 Walt Francis (202) 966-5742 Walt Francis (202) 966-5742 Leon Raesly (301) 439-1799 Leon Raesly (301) 430-1799 Terry Prudden (301) 933-3065 Walt Francis (202) 966-5742 Dianne Lorenz (301) 530-7881 Leon Raesly (301) 439-1799 Harris Silverstone (301) 435-3582 Neil Muncy Can. (416) 298-3964 Leon Raesly (301) 439-1799 Joyce C. Little (301) 321-2989 Jim Graham (703) 643-1848 Peter Combes (301) 251-6369 Gene Carter (202) 363-2342	Math/OR Applns. Modems Anchor Mark 12 Apple Inc. Modem BLZCOMP Modem Hayes Smartmodem Smartcom I Music Systems Printers General	Apple Color Plotter Apple Daisy Wheel IDS 460 Imagewriter MX-80 Okidata
MS-DOS ProDOS	John Love (703) 569-2294 Adam Robie (301) 460-6537 Richard Untied (609) 596-8816 Ray Hobbs (BBS) (301) 490-7484 Leon Raesly (301) 439-1799 Ray Hobbs (BBS) (301) 490-7484 Leon Raesly (301) 439-1799 John Love (703) 569-2294 Thomas O'Hagan (301) 593-9683 Carol Thomas (301) 424-1266 Leon Raesly (301) 439-1799 Walt Francis (202) 966-5742 Walt Francis (202) 966-5742 Leon Raesly (301) 439-1799 Leon Raesly (301) 430-1799 Terry Prudden (301) 933-3065 Walt Francis (202) 966-5742 Dianne Lorenz (301) 530-7881 Leon Raesly (301) 439-1799 Harris Silverstone (301) 435-3582 Neil Muncy Can. (416) 298-3964 Leon Raesly (301) 439-1799 Joyce C. Little (301) 321-2989 Jim Graham (703) 643-1848 Peter Combes (301) 251-6369 Gene Carter (202) 363-2342	Math/OR Applns. Modems Anchor Mark 12 Apple Inc. Modem BLZCOMP Modem Hayes Smartmodem Smartcom I Music Systems Printers General	Stat. Packages Stock Market Time-Sharing
Print Shop Newsroom Spreadsheets	John Love (703) 569-2294 Adam Robie (301) 460-6537 Richard Untied (609) 596-8816 Ray Hobbs (BBS) (301) 490-7484 Leon Raesly (301) 439-1799 Ray Hobbs (BBS) (301) 490-7484 Leon Raesly (301) 439-1799 John Love (703) 569-2294 Thomas O'Hagan (301) 593-9683 Carol Thomas (301) 424-1266 Leon Raesly (301) 439-1799 Walt Francis (202) 966-5742 Walt Francis (202) 966-5742 Leon Raesly (301) 439-1799 Leon Raesly (301) 430-1799 Terry Prudden (301) 933-3065 Walt Francis (202) 966-5742 Dianne Lorenz (301) 530-7881 Leon Raesly (301) 439-1799 Harris Silverstone (301) 435-3582 Neil Muncy Can. (416) 298-3964 Leon Raesly (301) 439-1799 Joyce C. Little (301) 321-2989 Jim Graham (703) 643-1848 Peter Combes (301) 251-6369 Gene Carter (202) 363-2342	Math/OR Applns. Modems Anchor Mark 12 Apple Inc. Modem BLZCOMP Modem Hayes Smartmodem Smartcom I Music Systems Printers General	Stat. Packages Stock Market Time-Sharing
VisiCalc Sprdsh.2.0(MagicCalc) SuperCalc Ver. 2.0	John Love (703) 569-2294 Adam Robie (301) 460-6537 Richard Untied (609) 596-8816 Ray Hobbs (BBS) (301) 490-7484 Leon Raesly (301) 439-1799 Ray Hobbs (BBS) (301) 490-7484 Leon Raesly (301) 439-1799 John Love (703) 569-2294 Thomas O'Hagan (301) 593-9683 Carol Thomas (301) 424-1266 Leon Raesly (301) 439-1799 Walt Francis (202) 966-5742 Walt Francis (202) 966-5742 Leon Raesly (301) 439-1799 Leon Raesly (301) 430-1799 Terry Prudden (301) 933-3065 Walt Francis (202) 966-5742 Dianne Lorenz (301) 530-7881 Leon Raesly (301) 439-1799 Harris Silverstone (301) 435-3582 Neil Muncy Can. (416) 298-3964 Leon Raesly (301) 439-1799 Joyce C. Little (301) 321-2989 Jim Graham (703) 643-1848 Peter Combes (301) 251-6369 Gene Carter (202) 363-2342	Math/OR Applns. Modems Anchor Mark 12 Apple Inc. Modem BLZCOMP Modem Hayes Smartmodem Smartcom I Music Systems Printers General	Stat. Packages Stock Market Time-Sharing
Word Processors Apple Writer II	John Love (703) 569-2294 Adam Robie (301) 460-6537 Richard Untied (609) 596-8816 Ray Hobbs (BBS) (301) 490-7484 Leon Raesly (301) 439-1799 Ray Hobbs (BBS) (301) 490-7484 Leon Raesly (301) 439-1799 John Love (703) 569-2294 Thomas O'Hagan (301) 593-9683 Carol Thomas (301) 424-1266 Leon Raesly (301) 439-1799 Walt Francis (202) 966-5742 Walt Francis (202) 966-5742 Leon Raesly (301) 439-1799 Leon Raesly (301) 430-1799 Terry Prudden (301) 933-3065 Walt Francis (202) 966-5742 Dianne Lorenz (301) 530-7881 Leon Raesly (301) 439-1799 Harris Silverstone (301) 435-3582 Neil Muncy Can. (416) 298-3964 Leon Raesly (301) 439-1799 Joyce C. Little (301) 321-2989 Jim Graham (703) 643-1848 Peter Combes (301) 251-6369 Gene Carter (202) 363-2342	Math/OR Applns. Modems Anchor Mark 12 Apple Inc. Modem BLZCOMP Modem Hayes Smartmodem Smartcom I Music Systems Printers General	Stat. Packages Stock Market Time-Sharing
Gutenberg Gutenberg & Jr. Letter & Simply Perfect Magic Window and II Apple PIE ScreenWriter II	John Love (703) 569-2294 Adam Robie (301) 460-6537 Richard Untied (609) 596-8816 Ray Hobbs (BBS) (301) 490-7484 Leon Raesly (301) 439-1799 Ray Hobbs (BBS) (301) 490-7484 Leon Raesly (301) 439-1799 John Love (703) 569-2294 Thomas O'Hagan (301) 593-9683 Carol Thomas (301) 424-1266 Leon Raesly (301) 439-1799 Walt Francis (202) 966-5742 Walt Francis (202) 966-5742 Leon Raesly (301) 439-1799 Leon Raesly (301) 430-1799 Terry Prudden (301) 933-3065 Walt Francis (202) 966-5742 Dianne Lorenz (301) 530-7881 Leon Raesly (301) 439-1799 Harris Silverstone (301) 435-3582 Neil Muncy Can. (416) 298-3964 Leon Raesly (301) 439-1799 Joyce C. Little (301) 321-2989 Jim Graham (703) 643-1848 Peter Combes (301) 251-6369 Gene Carter (202) 363-2342	Math/OR Applns. Modems Anchor Mark 12 Apple Inc. Modem BLZCOMP Modem Hayes Smartmodem Smartcom I Music Systems Printers General	Stat. Packages Stock Market Time-Sharing

* Calls until midnight are ok.

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- DS DD DISKS, CASE OF 50 \$70.00
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- MODEM CABLE \$19.00
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- 2-NOTCH DS DD, PAK OF 25 \$13.00
- 2-NOTCH DS DD, CASE OF 100 \$45.00
- 10 DISKETTE CASES \$2.25 EACH
5 for \$10.00

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

- 75 FLIP TOP DISK CASE \$11.00

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- PANASONIC 1080i, 120 CPS \$209.00
- PANASONIC 1091i \$229.00
- CITIZEN MSP-15, WIDE \$399.00
- PANASONIC P3131, LQ \$329.00
- NEC P6, LQ \$495.00
- OKIMATE 20 COLOR \$209.00

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- 2500 SHEETS OF PAPER \$29.00
- PANASONIC CITIZEN EPSON RIBBONS \$7.00
- GRAPHICS PARALLEL INTERFACE CARD \$59.00
- PRINTER STAND \$14.00
- SWITCH BOX, 2 WAY \$39.00
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DISK DRIVES

- FLOPPY DRIVE \$109.00
- CONTROLLER \$49.00

MONITORS

- HI RES COMPOSITE \$109.00
- RGB COLOR \$319.00

MODEMS

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- 300 1200 2400 EXT. \$279.00

SOUND & VIDEO DEVICES

- MUSIC SYNTHESIZER \$149.00
- COMPUTEREYES \$119.00

CHIPS

- EPROMS 2716 2732 2764 \$6.00
- EPROMS 27128 27256 \$8.00
- 64K, SET OF 8 \$9.60
- 256K, SET OF 8 \$24.80

GENERAL ITEMS

- SURGE PROTECTOR \$9.00
- 6-OUTLETS WITH SURGE PROTECT \$25.00
- MINI POWER CENTER \$58.00
- CABLE GENDER CHANGER \$9.00
- CABLES (S OR P) \$19.00
- GLARE FILTER \$29.00

COMPATIBLE COMPUTERS

- LASER 128 \$395.00
- VF PC, APPLE II & IBM COMPATIBLE \$929.00
- VF PC, IBM COMPATIBLE \$580.00
- VF AT, IBM COMPATIBLE \$1040.00

GAME I/O DEVICES

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

SLOT EXPANSION

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- 512K MEMORY \$167.00
- RGB OPTION ON MULTI-RAM ADD \$40.00
- SERI-ALL \$99.00
- ACCELERATOR \$229.00
- EDD 4 PLUS EXACT BIT COPY BOARD \$69.00
- MULTIPLE-SLOT CHASSIS \$149.00
- SINGLE-SLOT EXTENDER \$29.00
- QUICK-LOADER PROM BD \$149.00
- PROM BURNER \$119.00

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ON THE TRAIL OF THE APPLE ///

by David Ottalini, /// SIG Co-Chairman

This month, /// SIGers, an update on an earlier article published in the WAP Journal. The last time around, I called it "The Best of the Apple ///." This time, let's just say it's the new and improved version, without getting into what's really "Best" and what's not.

TO START WITH

Despite the fact that the Apple /// has not been made for more than three years, there are still folks writing new and excellent programs while providing support at the same time. Amazing! It's definitely a niche market, but one which still has potential. For example, the /// community does not do a good job of letting Apple II vendors know that in many instances their products (with a little help) can work in our machines. We need to push that for our sake (and for the vendors!) In fact, it's something I intend to bring up at the Phase /// Conference this fall in Chicago.

It's also important to remember that whatever "niche" we have IS growing smaller. We must continue to support those who support us. But there should also be an understanding that one day the only real support available will be from WAP and other user groups with ///ers as members.

That said, you need to know that the material below is part of the newly revised "A3.Information" file now on the WAP /// SIG New Member Disk. The information has also been uploaded to MAUG on CompuServe and I'll put it into the WAP TCS too, so those of you with older New Member Disks can get an update (It's for ANY /// SIGer who wishes, really).

APPLE /// INFORMATION

/// USER GROUPS

A user group, such as WAP, is a great way to obtain more information about the Apple ///. Members are knowledgeable, ready to answer questions and most offer PD (public domain) libraries with Apple /// software. There are not a great many Apple /// groups, but here is a list of some of them:

Apple THREE Group International

Cost: \$15.00/Year, H. Joseph Dobrowolski, President, Box 913, Langley AFB, VA. 23665.

Apple Three Users of Northern California

Cost: \$20.00/Year, Mary Berg, President, P.O. Box 1528, Mill Valley, CA. 94942.

Third Apple Users

Cost: \$15.00/Year, Initiation Fee: \$5.00, Lavona Rann, President, 1113 Wheaton Oaks Dr., Wheaton, IL. 60187.

Washington Apple Pi

Cost: \$25.00/Year, Initiation Fee: \$7.00, Charlene Ryan, /// SIG Secretary, 8227 Woodmont Ave. #201, Bethesda, MD. 20814.

Other groups worth including here for their work on behalf of the Apple ///: Apple Three Users of Colorado; Baud Appleing Computer Club (West Germany); Los Angeles-South Bay Apple /// Users Group and the /// SIG of Orange County Apple Users Group (California).

Also well worth a mention here is the Micronetworked Apple Users Group (MAUG) on CompuServe. MAUG's Apple /// section provides a fantastic forum for information exchange, and

its Data Libraries for the /// are full of excellent information and programs. You can join CompuServe by purchasing Starter Kits at most computer stores.

SOURCES OF PUBLIC DOMAIN SOFTWARE

Not surprisingly, the groups listed above (with one addition) also provide excellent sources of native-mode public domain software for the Apple ///. Costs for the software are minimal and the selection is good. All have some unique offerings while selling many of the same programs. You usually get the best deal by being a member of the respective group.

Apple THREE Group International. 100+ disks. \$3.00 each for members. No P&H fee. Literally an attempt to offer all available /// PD software with some unique offerings, like templates in different formats.

ATUNC. 30+ disks. Available to non-members at double the cost (\$3.00/\$6.00). P&H extra. Also, an excellent source of /// documentation at reasonable cost.

TAU. 80+ disks. Available to all. Includes some programs licensed exclusively to TAU for use by its members. Royalty software also offered. Mac and GS libraries are building. \$3.50 per disk. Royalty cost, P&H extra.

Pair Software, 3201 Murchison Way, Carmichael, CA 95608 (916) 485-6525. 80+ disks. Available to all. More expensive than others (Pair is a business, not a user group). (\$10.00 and up per disk). P&H extra. Customer and Newsletter mailing lists available. Commercial software and hardware also available (see below).

MAUG/CompuServe. As mentioned above, MAUG's Data Libraries contain a treasure of information and PD software. The Apple ///'s are DL7 and 8, but don't forget the AppleWorks DL. You must join CompuServe to get access (but there is no additional cost).

Washington Apple Pi. The WAP /// SIG offers 6+ /// PD software, including a New Members Disk with a tremendous amount of Apple /// information. Other PD offerings adaptable to the ///.

ON THE BBS FRONT

More than worthy of mention here is Ed Gooding's ///'s Company BBS. It is by far THE BEST /// BBS in the United States (and dare we say the World...why not?). It has a wealth of information available purely for the cost of a phone call. Ed keeps adding things all the time and, like Major Dobrowolski, tries to get as much information as he can into his baby. A true mother-lode. Try it by calling (through a modem, of course) (804)-747-8752.

On Three also has started up its own BBS, and you can call it at (805)-644-1055. Other groups, like ATUNC also offer BBS systems that include PD offerings.

As for WAP, we have one of the most extensive BBS systems (we call it the TCS or Telecommunications System) in the nation. One call gives you access to four complete 32-board systems. The Apple /// board is on Conference 1, Board 5. There are also provisions for uploading and downloading files. You must pay

contd.

a separate \$6.00 fee to use the WAPTCS. Call the office for more information.

SOURCES FOR HARDWARE AND COMMERCIAL SOFTWARE

As most ///ers know, the number of local Apple computer stores offering software or hardware is rapidly becoming non-existent. Many are going the "firesale" route of auctions or distress sales. These won't be able to sustain us a whole lot longer, simply because the universe of Apple /// products at the local level is disappearing. However, there are still some places we can go to obtain not only the old-line products like VisiCalc, Apple Writer and /// EZ Pieces, but new hardware and software that is still being developed for us. It's those folks, especially, that deserve our strongest support in the coming years.

ASSOCIATION OF INDEPENDENT MICRODEALERS (AIM), 3010 North Sterling Ave., Peoria, IL 61604 309-685-4843. AIM has become a clearing house of /// products for its members. As such, it publishes a catalog and lists the software (and some hardware) that's available. They charge \$25.00 for a subscription ("Apple /// Is For Me" membership). They offer a wide range of /// products all at sale prices. Retail price is also listed for comparison. The only problem is that sale prices vary, even for the same software (ten listings, all different). Availability is limited to what's on hand, so you have to work fast if you want something listed in the catalog (read that: call in your order NOW). Product descriptions are excellent. They have also started acting as a clearinghouse for Apple //, MAC and IBM products as well.

D.A. DataSystems, 3792 Windover Drive, Hamburg, NY 14075, 716-648-2462. An excellent source of new software. Most programs now offered by Pair Software and some are in the TAU Royalty library. Check out Tools Times Three software that includes a partial compiler for Business Basic; The Retriever, a file undelete program; and a special set of Ram disks for use with the Titan ///+//e cards. Another offering: PowerKeys DM+; a background utility with many modules.

ON THREE, 4478 Market Street, Suite 701-702, Ventura, CA 93003 (800)-443-8877. Another excellent source of both software and hardware. On Three offers a mixture of new and old. Programs include Draw-On Three (a graphics program), DeskTop Manager (a background utility), and Selector /// (a switching program for hard disk users). On the hardware front, there's a 512K upgrade, hard disks, etc. The Comm Manager is an excellent telecommunications program. And Desktop Manager is their super background utility program. They also sell used ///s and peripherals. Finally, there's the 3.5" 800k Unidisk driver too.

Pair Software, 3201 Murchison Way, Carmichael, CA. 95608, 1-800-485-6525. Frank Moore's Pair Software has been steadily adding a variety of commercial software and hardware products to an already large PD menu. Commercial products include GoForth, a version of the Forth language. There's also the Electronic Mailman for E-Mail; the Keystroke Data Base; ThreeWorks, 3EZ Pieces Data Bases full of Apple /// information and X-Modem ///, a telecommunications program. Peripherals include monitors and printers and he has also begun offering an IBM clone.

Sun Systems Remarketing, P.O. Box 4059, 150 E. 400 N Logan, UT 84321 (1-800-821-3221). Sun Systems has become

THE support organization for Apple (via a signed agreement) where the /// is concerned and offers a host of products. They have a large selection of /// commercial software and hardware (including parts) at mostly decent prices. Sun also offers the Titan ///+//e (turns your /// into a 128k //e). Check prices against AIM for best deals. This company also offers nationwide service for the /// community (and you can call them to ask for help as well). 256K reconditioned ///s offered for \$599.00 with monitor. Software prices are reduced if purchased with the computer.

Here are some additional sources for Apple /// hardware (including parts) and software (which does not purport to be a complete list!):

Blytheco; Steve Blythe; 714-583-0424; 22952 Alcalde Dr, Suite 100 Laguna Hills, CA. 92653; Product: Copy ///; Description: Disk Copy Program.

Byte Brokers; Robert Maxie; 916-334-2983; 5111-D College Oaks Dr. Sacramento, CA. 95841; Product: Apple ///s and other /// hardware. Description: Check for availability. Not much in stock last call.

Computer Reset; 214-276-8072; P.O. Box 461782 Garland, TX. 75046; Product: Apple /// Manuals; Description: Mostly manuals. Check for other offerings.

Custom Computer Company; 714-786-3418; 3601 Parkview Lane, Ste. 1-C Irvine, CA. 92715; Product: Apple /// Cooling System; Description: Fan.

DAISI Electronics, Inc.; 215-353-2203; P.O. Box K Newton Square, PA. 19073; Product: PKASU/U Driver; Description: Printer Driver for PKASU/U Parallel Card.

Flip Trak Learning Systems; 312-790-1117; 999 N. Main St., Ste # 200 Glen Ellyn, IL. 60137; Product: How to Operate the ///&///+ Description: Cassette learning system.

Jameco Electronic; 415-592-8097; 1355 Shoreway Road Belmont, CA. 94002; Product: Apple /// Chips, etc.; Description: 6502B and many other chips for the ///.

Jeff Sumey Enterprises; Jeff Sumey; 412-439-2633; 75A Boyle St. Uniontown, PA. 15401; Product: Spooler ///p; Description: Spooler Printer Driver.

Legend Industries; 800-5-LEGEND; 2220 Scott Lake Rd. Pontiac, MI 48054; Product: S-Card; Description: RAM Card for the ///.

Morris Horn and Associates; Morris Horn; 817-292-3432; Box 330876 Ft. Worth, TX. 76163; Product: Various /// Products/Parts; Description: Lots of stuff. Check for availability.

N.D.R.C.; 214-750-9889; 8511 Manderville Dallas, TX. 75231; Product: Apple ///s and Parts; Description: Sells many Apple /// hardware products.

Omicron Electronics; CON- TACT: Mike Tattan; 313-757-8192; 11240 Nine Mile Road Warren, MI. 48089; Product: Infotory Software and various hardware; Description: Software and some hardware.

Pecan Software Systems; 718-851-3100; 1410 39th St. Brooklyn, NY. 11216; Product: Modula-2; Description: Programming Language.

Pre-Owned Electronics; Charles; 617-891-6851; Box 644 Lincoln, MA. 01773; Product: Various Apple /// Hardware Products; Description: Apple ///s, Motherboards, etc.

Shreve Systems; 318-865-6743; 845 Lark Ave. Shreveport, LA. 71105; Product: /// Motherboard and other products; Description: Sells many Apple /// products.

contd.

Sourceware; 6899 South Yukon Court Littleton, CO. 80123; Product: Directory Labeler ///; Description: Labeling Utility.

The Computer Place; Deh-Weh Tu (Andy); 301-330-6016; Potomac Valley Center Gaithersburg, MD.; Product: Various Apple /// Software Products; Description: Also offers //, MAC and IBM.

Computer Solutions; Richard Warren; 202-478-1878; 26 Plaza Street Leesburg, VA. 22075; Product: Various new/used Apple /// hardware/software; Description: Some products as is.

I should also mention here that anyone using ///EZ Pieces can make use of any of the thousands of templates now available for AppleWorks. Our WAPPD library offers a number of templates and the back of any Apple magazine will give you sources for many more (I'll print an updated list in a future issue).

APPLE /// REPAIRS

Here's a list of places you can get your Apple /// repaired. (This list is being updated. Any additions welcome.)

Affordable Micro Repair; 213-973-0255; Mr. Habib; 2718 W. Pomona St. Santa Ana, CA. 92704.

Omicron Electronics; 313-757-8192; Mike Tattan; 11240 Nine Mile Rd. Warren, MI. 48089.

Sun Systems Remarketing; 801-752-7631 (technical help); Bob Cook; P.O. Box 4059 Logan, UT. 84321

The Intercom Store; 619-466-5383; Jim Fair; San Diego, CA.

Third Wave Management; 503-244-6128; Brad Brother-ton; 7227 SW Terwilliger Portland, OR. 97219.

Out of all those above, Sun is probably your best bet because it has many technicians and long-time experience with the ///. Here in the Washington area, your best bet may be Clinton Computer, which has been willing to take in ///s for repair. But call the /// SIG officers if you are having troubles. We may be able to help and save you some money as well.

NEWSLETTERS/MAGAZINES

Not surprisingly, those groups listed above also provide newsletters and magazines for us avid Apple /// users. Both the ATUNC and TAU newsletters are excellent sources of information. You might also want to try News and Views, the newsletter of the Apple THREE Group International based in Norfolk, Virginia. The WAP Journal, of course, includes at least one article monthly on the Apple ///.

As for magazines, there are really only two major Apple /// publications currently available: On Three and Frank Moore's The /// Magazine.

On Three has published on a regular monthly schedule since January, 1986. Paula Sheppard is its full-time editor. On Three provides a wide range of reviews (usually of its own products), beginners tutorials and a substantial letters section. The /// Magazine is the successor to The /// Newsletter, begun by Frank Moore in 1985 because there were no general-circulation /// publications coming out regularly at the time. The /// Magazine has had some publication troubles recently, but continues to be a good source of Apple /// information. Good tutorials and reviews.

On Three Magazine, 4478 Market St. Suite 701. Ventura, Ca. 93006. \$40.00/Year.

The /// Magazine, C/O Moore Enterprises, 3201 Murchison

Way, Carmichael, Ca. 95608. \$40.00/Year. (Includes all back issues from current year).

APPLE /// BOOKS

Only a few books were ever written about the Apple ///. There are three specific books worth mentioning here, all of which have Business Basic as their primary subject.

The Osborn/McGraw Hill Guide To Your Apple /// is the first book on the list. The other two are by Eddie Adamis: *Basic Keywords for the Apple ///* and *Business Basic for the Apple ///*. The Guide covers only the Apple /// and not the plus version. The author is Stanley M. Miastokowski. It's a good, beginning-level text for new /// owners and good to have for us old fuddy-duddies who've had their machines around for awhile. It has a good overview of Business Basic and sections on the .Audio and .Grafix drivers that are excellent. Clinton Computer had a large supply the last time I looked.

The Adamis texts are straight-forward, no-nonsense books that essentially describe Business Basic version 1.1, its key words and provides examples. The only other ///-specific book on the market is *Using Apple Business Computers* by Kenniston Lord Jr. I have it in my library but don't feel it's worth your money unless you are interested in lengthy Business Basic programs specifically for business purposes.

Unfortunately, all these books are now out-of-print. But you may still be able to find them at local bookstores. The Osborn/McGraw-Hill book, however may be purchased from Pair Software (We also have a number of copies in the WAP Library).

If you are a ///EZ Pieces user, you can check out any of the AppleWorks books now on the market, since the two programs are essentially the same. There are also some excellent books out on Apple Writer and VisiCalc.

Video Tape

I'd also like to remind everyone that we have in the office a VHS video tutorial on how to set up and operate the Apple ///. You may take it out to view at home if you like. Call or drop by the office for details on how to do that.

THE PD LIBRARY

At the May meeting, I had a request to provide a listing of all our /// SIG PD disks now offered by WAP. I am only too happy to comply with that request below. The disks have been selling well considering our small numbers (compared to WAP overall). The New Members Disk seems to be our top "seller" (it is also sent out to new /// SIG members, which doesn't hurt!). But I would remind you, that particular disk can be used by "old" members too. It contains a tremendous amount of information valuable to anyone trying to get the most out of their tottering old Apple ///. Hard to believe the first /// came off the assembly line in 1980!!

Finally, I'd like to remind all /// SIG members again that we will not be having an August meeting. We'll pick things up again in September. Hope to see you then!

THREE.SIG.1001A

Games Volume 1 : Self-Booting

Type Blocks Name

System 28 SOS.DRIVER

*BASprg 24 CANIBAL.ISLAND

*BASprg 1 DAZZLE

contd.

Operant Systems

--- HARDWARE ---

DOT-MATRIX PRINTERS---

Panasonic 1091i (160 cps, Epson-compatible "best buy").. 219
 1080i (120 cps, as above)..... 189
 NEC PS/P6/P7 Pinwriter (24-pin high-quality matrix). (call)
 Epson FX-86e (200 cps, 32 cps NLQ mode)..... (call)
 FX-286e (200 cps wide carriage)..... (call)
 LX-86 (100 cps, 16 cps NLQ mode)..... (call)
 LQ-800/LQ-1000 (180 cps, 24-pin NLQ mode).... (call)
 Okidata 192-Plus (200 cps, NLQ mode)..... 369
 193-Plus (132 column version of above)..... 549
 292/293 (200 cps draft, 100 cps NLQ, 18-pin) (call)
 Toshiba 3215L (216 cps draft, slickest 24-pin avail)... 549
 351 (300 cps, wide carriage version of above).. 999
 Citizen MSP 20 (200 cps matrix, Epson-compatible).... 349

DAISYWHEEL & LASER PRINTERS---

Citizen Premier 35 (35 cps, fastest for the money).... 499
 Qume LetterPro PLUS (45 cps daisywheel)..... 595
 Silver-Reed 800 (40 cps, Diablo-compatible)..... 759
 NEC Elf (16 cps, par & ser interface, NEC/Diablo emul). 419
 8830 (55 cps daisywheel, built like a tank)..... 1195
 Diablo 635 (55 cps daisywheel)..... 825
 H-P LaserJet Series II (512k / 1.5meg, 8 ppm).... 1895/2295
 Okidata Laserline 6 (16 ppm, H-P Plus compatible).... 1495
 P5 Jet (Postscript upgrade for Canon/H-P lasers).... 2150
 QMS-PS 800 Plus (8 ppm, LaserWriter compatible).... (call)
 Epson, Okidata, AST, Quadra, Qume lasers..... (call)

MODEMS---

Hayes Smartmodem 1200A (1200/300 baud for [C+]/[C]e).... 249
 Micromodem [C]e (300 baud card for [C+]/[C]e w/sft). 145
 Smartmodem 2400 (2400/1200/300 baud, RS-232).... 429
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 Anchor Automation Express (1200/300 loaded w/ features) 219
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 Promodem 1200A (1200/300 card w/ software).. 209
 US Robotics Courier 2400 (2400/1200/300 baud, RS-232).. 395
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 ZoomModem [C]e Plus (300 baud card w/adv software).... 119

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Sider 10-meg / 20-meg hard disk for [C+]/[C]e..... 450/575
 Applied Engineering half-hi floppy (for [C+]/[C]e)..... 119
 Controller for 2 drives..... 55
 Video Technology half-hi floppy (for [C]e/[C]g)..... 125

CP/M & 6502C SYSTEMS---

Applied Engineering Z-Ram Ultra 3 (256K+, clock, CP/M). 259
 TransWarp (3.6 Mhz 6502C, 256K RAM) 225
 Speed Demon (6502C high-speed coprocessor)..... 159
 Applicard (6 Mhz Z-80, 64K to 192K RAM, 70-col video).. 129
 Titan Accelerator [C]e (gives [C+]/[C]e speed of [C]g).... 229

MONITORS---

Andek 300G/300A (12" green/amber anti-glare, 18Mhz) 125/139
 Color 600 (13" composite/RGB color, 16 mhz)..... 369
 Taxan 115 (green/amber anti-glare screen, 20Mhz)..... 119
 Thomson 14" composite/RGB color..... 259

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Practical Peripherals SerialL (for modems or printers).. 99
 Graphicard (parallel w/ graphics). 69
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 ProClock (PRODOS compatible).... 109
 ProGrappler printer interface (parallel w/ graphics).... 85
 Quadra Microfazer (8K to 128K printer buffer)..... 139
 Pkaso/U printer interface (superior graphics)..... 129
 Buffered Grapplet+ (16K to 64K buffer plus graphics)... 139

VIDEO BOARDS---

ALS 80-col card (w/64K RAM, AppleWorks-compatible).... 69
 Applied Engineering RasWorks III (64K-3 meg + 80 col). 139
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Applied Engineering RasFactor (256k-1 meg for t/e/g).... 189
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 Microtek 16K RAM card (for [C+])..... 69

--- SOFTWARE ---

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Word Perfect (new version w/speller)..... 95
 Bank Street Writer (64K & 128K versions)..... 49
 pfs: Write [C]e (w/speller)..... 79
 MouseWrite ([C]e/[C]g)..... 95
 HomeWord Plus (w/speller for [C]e/[C]g)..... 49
 Sensible Speller IV (DOS or PRODOS versions avail).. 79
 Springboard Publisher (for [C]e/[C]g)..... 85

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SuperCalc 3a (super spreadsheet/graphics for [C]e/[C]g) 129
 VIP Professional ([C]g spreadsheet)..... 195
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dBASE II (the best Apple database, requires CP/M).. 299
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Dollars & Sense (accounting w/graphics)..... 79
 Managing Your Money (accounting + investment mgmt).. 99
 DAC-Easy Accounting..... 49
 Peachtree Back to Basics Accounting (GL/AR/AP).... 149
 BPI Accounting (GL/AR/AP/PAY/INVENTORY)..... each 159

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 Newsroom/Clip Art Collection..... 42/19
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 Infomerge (mailmerge for Appleworks)..... 49
 Spelling Checker (pops up in Appleworks).... 42
 Typing Tutor IV..... 36
 Kensington System Saver Fan (w/surge protector).... 66
 CH Mach III or Kraft 3-button joystick..... 39
 KoalaPad Graphics Tablet (with graphics software)... 89
 Curtis Emerald Surge Protector (6 outlets & cord)... 45

Microsoft Works (finally !!)..... 189
 Word (new version 3.0)..... 259
 Excel (best Mac spreadsheet available)... 245
 Basic Interpreter/Compiler..... 99/125
 Chart (presentation business graphics).... 85
 File (easy to use database)..... 119
 ReadySetGo! / PageMaker (latest versions)..... (call)
 Onis 3-Plus (heavy-duty database)..... 279
 Odesta Helix 2.0 (as above)..... 235
 Dollars & Sense (accounting w/graphics)..... 95
 Sidelick w/PhoneLink..... 65
 Micah AT 20 or 30 (fast internal hard disk).... (call)
 Peripheral Land 20 or 30 meg SCSI drive..... 725/795
 SuperPaint / FullPaint..... 69/65
 Video Tech 800K external floppy..... 215
 MacSnap Memory (upgrade 512K to 1 meg or 2 meg) 169/475
 Omega 10/20 meg removable cartridge drive..... (call)
 Kensington Mac System Saver (fan & surge protector). 75

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 *Text 3 HELLO.TEXT
 *BASprg 1 HELLO
 *BASdat 13 MEDLEY
 *BASprg 7 MENU.MAKER
 *BASprg 6 PIANO.PLINKER
 *Pascod 7 REQUEST.INV
 *System 52 SOS.INTERP
 *System 44 SOS.KERNAL
 *BASprg 28 TRUCKER
 *BASprg 7 WORD.PUZZLE
 *BASprg 1 TEXT.DUMP

THREE.SIG.1001B

Games Volume 2 : Self-Booting

Type	Blocks	Name
*BASprg 3		AUDIO.DEMO
*BASprg 1		AUDIO.DEMO2
*Text 1		AUDIO.TEXT
*Pascod 21		BGRAF.INV
*BASprg 9		BIORHYTHM
*BASprg 15		CAL.COUNTER
*BASpr 14		CIVIL.WAR
*BASprg 4		CODEBREAKER
*BASprg 14		GOLF
*BASprg 1		HELLO
*Text 3		HELLO.TEXT
*BASprg 8		KNITTING.TOOL
*BASprg 8		LIFE
*BASprg 7		MENU.MAKER
*BASprg 7		PERPETUAL.CAL
*System 28		SOS.DRIVER
*System 52		SOS.INTERP
*System 44		SOS.KERNEL
*BASprg 32		SURVIVAL

THREE.SIG.1002

Basic Utilities Volume 1 : Self-Boot.

Type	Blocks	Name
*BASprg 1		ASCII.LISTER.
*BASprg 1		ASCII.LISTER.2
*BASprg 10		AUTOMENU
*BASprg 3		BASIC.BOOTPROG
*BASprg 5		CATALOG.RUN
*Text 1		COMPARE.DOCUMNT
*BASprg 6		COMPARE.UTILITY
*Text 1		EPSON.DOCUMENT
*BASprg 11		EPSON.SELECT
*BASprg 8		FILE.READER
*Text 3		HELLO.TEXT
*BASprg 1		HELLO
*BASprg 3		HEX.DEC.CONVERT
*BASprg 18		MAILBASE
*BASprg 5		MANUALMENU
*BASprg 7		MENU.MAKER
*BASprg 6		MORTGAGE
*Pascod 4		READCRT.INV
*Pascod 4		RESTART.CODE
*BASprg 3		SCROLLER
*Text 1		SEARCH.DOCUMENT
*BASprg 10		SEARCH.UTILITY
System 17		SOS.DRIVER
*System 52		SOS.INTERP
*System 44		SOS.KERNEL

*BASprg 1 SOSBUFFER.DEMO
 *BASprg 7 TEXTFILE.COPY
 *BASprg 10 TEXTFILE.DUMP
 *BASprg 3 TEXTFILEMAKER
 *Pascod 4 UPSHIFT.INV

THREE.SIG.1003

Basic Utilities Volume 2 : Self-Boot.

Type	Blocks	Name
*BASprg 6		BASIC.RENUMBER
*BASprg 4		CALCULATE.AREA
*Text 1		CIPHER.DOCUMENT
*BASprg 14		CIPHER.UTILITY
*BASprg 4		DISKDRV.CLEAN
*Pascod 5		FILETYPE.INV
*BASprg 1		HELLO
*Text 3		HELLO.TEXT
*BASprg 4		HEX.ASCII.DUMP
*BASprg 22		LOAN.PAY.CALC
*BASprg 7		MENU.MAKER
*BASprg 7		REM.REMOVER
*BASprg 11		RENAME.DIRECT.
*BASprg 11		RENAME.DIRECT
*BASprg 11		RENUMBER.DOC
*Pascod 15		RENUMBER.INV
*Pascod 7		REQUEST.INV
*BASprg 7		S.T.E.P.
System 17		SOS.DRIVER
*System 52		SOS.INTERP
*System 44		SOS.KERNEL
*BASprg 7		TEXT.FILE.SCRLL
*BASprg 11		FIND.REPLACE
*BASpr 1		LINE.PRINTER

THREE.SIG.1004A

System Utilities : Self-Booting

Type	Blocks	Name
*System 44		SOS.KERNEL
System 24		SOS.DRIVER
*System 28		SOS.INTERP
*Pascod 49		SYSTEM.PASCAL
*Pasda 1		SYSTEM.MISCINFO
*Pascod 121		SYSTEM.STARTUP

THREE.SIG.1004B

System Data and Drivers :

Not Self-Booting

Type	Blocks	Name
*Pascod 14		CONSOLE.DRIVER
*Pascod 8		RS232.DRIVER
*Pascod 5		SERPRINT.DRIVER
*Pascod 5		AUDIO.DRIVER
*Pascod 14		GRAFIX.DRIVER
*Pascod 6		FMTDX.DRIVER
*Pascod 9		PROFILE.DRIVER
*Pascod 6		PARPRINT.DRIVER
*Direct 1		KEYBOARD.LAYOUT
*Direct 1		CHARACTER.SETS
*Direct 1		SITYPE.DRIVER
*System 9		SERCRD.DRIVER
Text 4		READ.ME
*System 7		MTEK.DRIVER
*System 10		PROFILE10MEG
*System 9		LASERJET.DRIVER

contd.

THREE.SIG.1005A

New Members Disk : Self-Booting

Type	Blocks	Name
*Direct	1	A3.HELPS1
*Text	50	A3.INFORMATION
*Direct	1	A3.QUESTIONS1
*BASprg	1	HELLO
*Text	3	HELLO.TEXT
*BASprg	8	MENU.MAKER
*Text	4	READ.ME.FIRST
System	49	SOS.DRIVER
*System	52	SOS.INTERP
*System	44	SOS.KERNEL

THREE.SIG.1005B

New Members Disk : Not Self-Boot.

Type	Blocks	Name
*Direct	1	A3.HELPS2
*Text	8	A3.NUTSHELL
*Text	3	A3.POEM
*Direct	1	A3.QUESTIONS2
*Text	11	APPLE.SOFTWARE
*Text	6	APPLE3.DOCTOR
*Text	15	BASIC.ARTICLES
*Text	26	CABLES
*Text	7	COLOR.MONITOR
*Text	1	CPYRIGHT.NOTICE
*Text	18	DRIVER.CONFIG
*BASprg	8	MENU.MAKER
*Text	41	SOFTWARE.HELPS
*Text	4	SOS.DRIVER.NOTE
*Direct	1	TEMPLATES
*BASprg	3	TEXT.DUMP
*Text	7	THE.APPLE3
*Text	8	UPGRADING.SOS
*Text	16	WAP.BIBLIO
*Text	6	EZP.TIPS

THREE.SIG.1006A

Word Processing and WPL :

Type	Blocks	Name
*Text	4	AW3.0
*Text	19	AW3.1
*Text	20	AW3.2
*Text	15	AW3.3
*Text	12	AW3.4
*Text	17	AW3.5
*Text	1	GLOS.KEYPAD
*Text	4	HELLO
*Text	3	HELLO.2
*Text	1	HELLO.3
*Text	3	HELP
*Direct	4	HS
*Text	5	MENU
System	34	SOS.DRIVER
*System	31	SOS.INTERP
*System	44	SOS.KERNEL
*Pasdta	3	STANDARD.CHR
*Text	2	STARTUP
*Binary	1	SYS.PRT
*Binary	1	SYS.TAB
*Text	3	TUTORIAL

THREE.SIG.1006B

Word Processing and WPL :

Type	Blocks	Name
*System	44	SOS.KERNEL
*Pasdta	46	SYSTEM.LIBRARY
Pasdta	37	SOS.DRIVER
*Pascod	9	MLMTRAN.CODE
*Pasdta	34	SOS.INTERP
*Pasdta	1	SYSTEM.MISCINFO
*Pasdta	51	SYSTEM.PASCAL
*Pascod	18	SYSTEM.STARTUP
*Pasdta	3	GOTHIC.CHR
*Pasdta	3	SLANT.CHR
*Pasdta	3	INVERSE.CHR
*Pasdta	3	STOP.CHR
*Text	1	START
*Text	11	AW.ARTICLES
*Text	7	WPL.ARTICLES

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GS-RAM, 1.5 Meg	\$269.00
Z-RAM Ultra 1, 512K	189.00
Z-RAM Ultra 2, 1 Meg	289.00
Z-RAM Ultra 3, 1 Meg	339.00
GS-RAM PLUS, 1 Meg	349.00
GS-RAM PLUS, 2 Meg	498.00
RamFactor, 1 Meg	269.00
RamWorks III, 1 Meg	239.00
Serial Pro	119.00
RamCharger for RamFactor	129.00
TransWarp	209.00
TimeMaster H.O.	74.00
Phasor	129.00
//e High Output Power Supply	58.00

SoftSwitch (GS Program Switcher)	\$ 39.00
AppleWorks 1.3	179.00
Locksmith 6.0 (Reduced!)	59.00
Copy II Plus	37.95
Pinpoint StarterPak (GS)	119.00
Bag of Tricks 2	49.95

HARDWARE

//e Enhancement Kit	\$62.00
//c Detachable Numeric Keypad	99.00
//c System Clock (external)	48.00
L.A. 20 Meg SCSI Hard Drive (Mac +)	650.00
Sider 10 Meg (//e, GS)	575.00
Sider 20 Meg (//e, GS)	645.00
AB Switch Box (Serial/Parallel)	29.00
ABCD Switch Box (Serial/Parallel)	39.00
5.25 DSDD Disks, 10 pak (with order)	8.99
3.50 DSDD Disks, 10 pak (with order)	21.99
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C-VUE Travel Kit (protective cover, lens cleaner, lubricator)	\$ 14.95

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THE GS MOD: A CASE HISTORY

by Ralph Wege

I have just got up and running with the new Apple IIGS modification from an Apple //e and am I ever satisfied. This is truly the next step in microcomputer technology. Actually, there were ins and outs to doing this in my case. I have had my //e since May of 1983 and was extremely satisfied with it, having gotten it "for the kids", who never got any time on it along the way. My plan was to get a Mac eventually, having used a Lisa extensively when I was working in Washington. With all of the uncertainty in the last six months about what new Macintosh products would be available and at what cost, I was casting about for something to buy, not fully comfortable with making the big move to the Mac (I will do it though).

I always wanted a good color capability for the //e so, when I read Leon Raesly's article on the new Sony monitor, (Initron-Rinitron-Trinitron! in the January 1987 PI Journal) I thought that would be a good beginning toward a IIGS. Meanwhile I could use it (Sony KV-1311CR) as my primary monitor for the //e while taking my time to upgrade. The monitor is great, but I did not realize that it was not useful in 80 column composite mode. The color was great for the kid's programs, however. I use Appleworks and Think Tank very heavily and I had to continue to use the Apple Monitor III with the Sony on the side. It should be noted here that the IIGS uses analog RGB and not digital RGB, so be careful about monitor purchases. Well, I couldn't let that lie for long, so I was the first one in Santa Maria, a small town near the coast in central California, to purchase the upgrade, figuring the monitor would now be used as originally intended for all applications in clear, analog RGB.

I marched my //e to the Computer Terminal, the local exclusive Apple dealer to get the upgrade which they had in stock. They took one look at my machine and there was a sigh of frustration. The upgrade could not be installed in my //e case; it was too early a version. It would take 2 weeks to get a case and it would cost an extra \$55. I said, go ahead. Within 2 weeks I got a note that the case had arrived and, surprisingly, there would be no extra charge. The rest of the modification was uneventful. The only thing that was left of the old //e was the power supply, keyboard and the speaker. It was exciting to get the GS home and to hook it up and to find that I really did have a different machine and, after a few false starts, that there would be a lot to learn.

Meanwhile, however, my goal of getting the Sony going seemed as unattainable as ever. The dealer said he would make me a cable, but he soon realized that the connector was a real oddball at the monitor end. I had to order a cable from Sony, which took 10 days, and then the dealer changed the computer end from a 25 pin to a 15 pin that was needed. This was totally successful using the pinout diagram in the Sony manual that came with the monitor. With respect to drives, I knew that I could use my two 5 1/4 inch drives with the Apple interface card in slot 6 just as before and that this would get me started. It worked after I took some time to figure out how to configure the machine using the Control Panel. All but one of my programs that I have tried have worked as before and the availability of the fast 3.5Mhz

processor sped them all up. It is easy to set the machine to the slower 1 Mhz speed, however. There was a great shortage of instructions with the upgrade (they don't even provide the GS owner's manual) and there was a 3 1/2 inch System Disk which I could not explore. So, out I ran back to the dealer to purchase a 3 1/2 inch drive. I connected it to the port that parallels and disables slot 5 when used. Booting the system disk presented the first look at the Mac type of interface, including the icon for the built-in ramdisk.

Wanting to get the whole mod done at once, I ordered a Pro-Grappler printer interface card which I got as an upgrade by sending in my old card. This was not necessary at the time, but it does have nice features and my old card was very outdated. In addition, since I now had the 3 1/2 inch drive I wanted to use it for AppleWorks. So the next purchase was the AppleWorks upgrade to Version 2.0. I liked the large desktop that my old Ramworks card provided, so I next purchased a GS Ram card. I used the 256K chips from the Ramworks card to give me a total memory of 1 Mb. I had quite a time figuring out the ins and outs of enhancing the AppleWorks and am still in the process. In order to realize many of the AppleWorks enhancements you have to be in ProDOS 8 or 16, which means that you must first boot the System Disk and then open up AppleWorks as opposed to booting AppleWorks 2.0 directly which has you in ProDOS 1.1.1.

I had an Apple II mouse with the mouse card which I installed in the GS in slot 4. You must use the card because the connector on that mouse doesn't fit into the port connector. It works fine. My AE CP/M card does not work, although I did manage to boot up once. I believe this to be an electromagnetic interference problem, although I am still investigating. With five cards now in the machine I decided to buy a Kensington System Saver fan. Apple recommends a fan if there are more than 3 cards installed. I have now completed the mods that I want and, as you can see below, the cost was as much as a new Mac+.

<u>ITEM</u>	<u>COST</u>
APPLE IIGS MOD (LABOR INCL)	\$528
ONE APPLE 3.5" DISK DRIVE	360
1 MB GS RAM MEMORY EXPAN. CARD	210
SONY RGB MONITOR AND TV	528
SONY CABLE	55
PRO GRAPPLER PRINTER INTERFACE CARD	55
APPLEWORKS 2.0 UPGRADE	55
FAN	62
TOTAL	\$1,853

Even though there is a high cost in relation to the Mac, it must be realized that I now have a machine that is very advanced and should be around for a long time. Furthermore, I can run almost all of the software I now own. The Mac cost is only the tip of the iceberg as we all know, and I have a complete machine and software combination for my cost. I love the ability to change the

contd. on pg 19

THE PRICE IS RIGHT ON..

Apple™ Software

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Accounting

DAC-Easy Acct.	\$51	Back to Basics Sys.	\$153
On Balance	70	BPI Gen. Acct.	165

Communications

Commworks	60	Smartcom II	104
Point to Point	80	Straighttalk	21

Database

Bank St. Filer (128K)	50	Omnis 3 Plus	295
pfs: Workmates(f,r,p,w)	170	Reflex	72

Education

Computer SAT (HBJ)	28	Calculus & Physics	70
Math Rabbit	29	SAT Improvement	70

Graphics

Create a Calendar	22	Graphic Works 1.1	70
Springboard Publisher	92	Printworks for MAC	53

Leisure

Hollywood Hyjinx	29	Comicworks	57
Mean 18, Ultimate Golf	29	World Cup Soccer	32

Programming

Applesoft Computer	127	Basic Interpreter	77
Turbo Pascal 3.0 (CP/M)	50	Turbo Pascal	72

Spreadsheet

Planner's Choice	36	Crunch	95
VIP Professional - Iigs	205	Excel 1.04	275

Word Processing

Talking Text Writer/GS	170	MORE (512K)	175
Word Perfect 1.1	101	MS Word 3.01	285

.....New, recently published software.....

APPLE		MACINTOSH	
816/Paint	48	Business Card Mkr	44
ASCII Mousetalk	63	Business Filesv'n	225
Award Maker Plus	26	Copy II Mac	26
Bank St. Writer+128K	57	HD Back-up	34
Clip Art Gallery - Iigs	22	Jet	40
Music Studio/GS	57	MacOneWrite Sys	64
Springboard Publisher	92	Powerpoint	250
Term Paper Writer	36	Ragtimev1.1	250
Where USA is C. SD	33	Tempo	66
Writer Rabbit	29	Works	205

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Smart Computer: More Reasons to Buy Our Generic PC.

by Bud Stalker

In the IBM PC-compatible world there are many kinds of computers. Though they may look alike, they all differ under the cover—in the quality of the components, in the scope and usefulness of software, in the degree of care and foresight with which they're engineered and built. Some are better buys than others. Herewith we present a few criteria useful in comparing PC-compatibles. No matter what you need in a personal computer or where you buy it, you should ensure that the PC comes with the following features:

- **Fully IBM-compatible.** We've tested our systems extensively, and have found them to work with all software designed for the IBM PC. Our PCs are strictly compatible with the IBM hardware standard, too. The cheaper clones, though attractive in price, sacrifice full hardware compatibility, in effect locking you out of major future upgrades.
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- **Well-tuned.** The systems we offer strike a proper balance among speed, storage, and software. They have the good "feel" that only a properly optimized PC can provide. Even our lowest cost systems benefit by intelligent applications of appropriate software. We recently boosted performance of two competitors' PC clones by 75% and 90% respectively just by setting them up properly. The way PCs are built and configured makes a big difference.
- **Carefully performance-tested.** Parts that don't meet our standards wind up in our reject pile, not in our clients' PCs. (Ask about our second-tier systems at scandalous prices. They're great buys if you don't mind a noisy fan, a mushy keyboard, or an out-of-square video display. All are guaranteed to drive you crazy, but they're cheap, and they work. Yes, Virginia, there really is a \$500 PC, but do you really want one?)

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IIGS Stuff

by Ted Meyer

Peg Matzen, who is the Apple IIGS SIG recorder, gets a break this month since there was no June meeting to report on. The Garage Sale went very well, and I noticed that some of the swappers even had some IIGS software available. Those who stopped by at the Disketeria may have noticed that the IIGS System Disk Version 2 was available. Apple sent us a copy and the right to distribute it. By the time you read this, the new version should be at local dealers, who should be willing to copy it for free for IIGS owners. However, we do plan on always having the latest System software from Apple available through the Disketeria. It also looks as though a new IIGS library disk will be available by the time you read this. Check out the Disketeria News column for more information.

Brand new computer users may now take heart! We have several volunteers to put together a "IIGS for the New Computer Owner" Tutorial. Take a look at the the tutorials column near the back of the journal. We hope to get a session available for August or September. We hope to start organizing some IIGS Apple Teas, too. These will be discussed at this month's meeting. Watch next month's column for more information.

A Few Quickie IIGS Book Notes

Since before I bought my IIGS I have been collecting books related to it. There are a surprising number available, a few great, and some not so great. As an aid to those of you who are looking for documentation, I thought that I would list and comment on ones with which I have had a little experience with. This list doesn't include every IIGS book out. I'm sure that by the time you read it there will be new books available and some of these listed will have been updated. From each book I've taken a quote which I feel somehow represents or MISrepresents the book. I've also listed appendices, because in some cases, these might give a reader an idea of what audience the book is for.

"Inside the Apple IIGS" by Gary Bond, Published by Sybex, \$19.95, 389 pages, available at Daltons. Disk with Super Hi-Res Ampersand Routines available.

Appendices: 65C816 Instruction Set, Palette Color Values, Double Hi-Res Color Values, IIGS Character Sets, Soft Switches for Auxiliary-Memory Selection, Scan-Line Starting Addresses (Super Hi-Res), Video Escape Key Codes, Registers of the 65C816, ASCII Character Codes, Zero Page Map.

Quote: "While it isn't possible to destroy the hardware with anything that we will be exploring, it IS possible to scramble battery RAM, trash the control panel, lock up the system, confuse the various managers, or perform any of a dozen pranks that would make a systems engineer turn pale." After this quote, the book goes on to describe how to re-initialize your system to bring it back up. Somehow, I suspect Apple wouldn't totally approve of this book, but Woz might. Apple's prescribed methods of using Quickdraw II, Soft switches, and other firmware are pretty much ignored. There is a lot of great information here for those interested in beginning hacking and for generally snooping around in the guts of the machine. It should be noted, however,

that if you're interested in developing and publishing software this book by-passes many of the rules for producing code which will work on future system upgrades.

"Apple IIGS Technical Reference" by Michael Fischer, Published by Osbourne McGraw-Hill, \$19.95, 699 pages, available at Waldens, Daltons, and Crown.

Appendices: Apple IIGS Keyboard Layouts, 65816 Opcodes and Addressing Modes.

Quote: "The pupose of this book is to incorporate in one reference most of the relevant material about the Apple IIGS in a form useful to people with some technical interest in the machine." And it does. I don't recommend this book for the beginning programmer, but there isn't a better book available for the programmer who wants to get started developing software using the IIGS's toolbox. This book, and Fischer's other book, *"65816, 65802 Assembly Language Programming"*, provide a pretty good set of texts for those interested in IIGS software development with assembly language.

"The Apple IIGS Toolbox Revealed" by Danny Goodman, Published by Bantam Computer Books, \$21.95, 244 pages, available in Daltons.

Appendices: Short Course in Hexadecimal and Binary Math, ASCII Table, Further Reading.

Quote: "Whether you're brand new to programming on the Apple II or you've come to the toolbox as an experienced programmer, this book is where you should begin your IIGS toolbox experience." For \$21.95 this book doesn't have much hard information. Generally, it describes some methods for accessing the toolbox without giving any specifics or programming examples. If you are interested in the "philosophy" of how to use the toolbox, but don't really want to use it, this book is for you.

"Apple IIGS Toolbox Reference", copyright Apple Technical Publications, more than 1200 pages, \$60.00 for "beta" version from APDA.

Appendices: Writing your own Tool Set, Error Codes.

Quote: "IMPORTANT - Halts occur only on calls to FP816. Elems816 stimulates halts only through a procexit call to FP816. DecStr816 makes calls to FP816 and therefore never stimulates halts." This is a reference for using the toolbox. The quote I've given is out of context but is designed to be a warning. Don't even consider buying this book if you're interested in programming examples or tutorials. My beta version has portions left out and contains some errors, but if you're trying to make full use of the toolbox this 2-volume set contains the answers to a lot of questions.

"The Elementary Apple IIGS" by William B. Sanders, Published by COMPUTE! Books, \$15.95, 262 pages, available at Waldens and Daltons. Light green cover, spiral bound.

Appendices: Applesoft BASIC Token Chart, ASCII Characters, Hex-to-Decimal and Decimal-to-Hex Conversion, Error Messages (Applesoft, ProDOS 8, ProDOS 16, Fatal), Glossary

contd.

(Applesoft).

Quote: "One of the most exciting aspects of the IIGS is its graphics and sound capabilities, and you'll learn how to use these advanced features and become acquainted with the built-in toolboxes that offer access to them." Unfortunately, this book barely introduces you to these advanced features. The acquaintance it refers to is only seven pages long for the whole toolbox, super hi-res graphics, and sound capabilities of the IIGS. This book is for those who have never owned an Apple before and are interested in Applesoft Basic, Hi-res Graphics, DOS, and using printers (Epson, Imagewriter, and Laserwriter are discussed). Except for those seven pages and an introduction to the Control Panel at the beginning of the book, this may as well have been a book for the //e.

"*Apple 16, A Comprehensive Guide to Apple IIGS Computing*" by Hank Harrison, Published by Archives Press, \$24.95, 251 pages, available at Daltons.

Appendices: Users Groups (Includes a list of users groups...WAP not included), The Telephone Link, IIGS in Education, Appleworks Add-on Products, Getting a Grant From Apple.

Quote: "Most computer books are very technical." This one is not. It sort of reminds me of "The Last Whole Earth Catalog." It is an interesting resource guide for beginners. There isn't any programming information, except in terms of what programming resources are available. This book is likely to become out of date very quickly, as it describes a lot of hardware and software that is available now, but that is bound to be improved upon by tomorrow. Nibble, A+, or inCider magazines are probably just as good for resource guides and will remain up to date. (A lot cheaper, too.)

I haven't found a good text for the higher level languages such as C or Pascal yet. I suspect that when the Apple Programmers Workshop, Pascal, and C are released in their final form we'll start to see a deluge. Several articles have been published using TML Pascal, but no really complete tutorial for the beginning programmer has been published, as far as I know. Newsletters like Open Apple and the WAP Journal, magazines, and bulletin boards seem to be the best sources for useful technical information on how to set up RAM disks, use desk accessories, configure slots, and similar problems.

That's it for this month. Peg will be back next month to let you know what's happening as far as the IIGS SIG is concerned. Remember, the IIGS SIG meets at 8:00 a.m. before the regular WAP meetings in the USUHS cafeteria. ☺

The GS Mod contd. from pg 16 display colors at any time. I am now using yellow on dark blue with a light blue border. It is great. The only slight criticism is that every time the system is warm booted you get to choose 50 or 60 HZ power. That option should be buried somewhere inside.

I highly recommend the mod for any Apple //e user who wants to stay with the II line for a while. I don't think there is a particular rush to get the mod, however, due to the small amount of software that uses the GS features. I don't have any of that software yet. There is still a great deal that I have to learn about this wonderful machine and I am looking forward with anticipation to doing just that. Meanwhile, I have a long time to save for that Mac II. ☺

PI-SIG NEWS

by Robert Golden

The July meeting of the Program Interface SIG was on Monday, July 6 at the Washington Apple Pi office. Members brought and assembled the minimal working components of an Apple IIGS and were up and running before 7:30 PM.

We sampled a disk contributed by David Todd, a IIGS system disk which contained very recent versions of ProDOS 8 and ProDOS 16.

A demonstration of a very elementary program based on a shell was provided, utilizing TML Pascal.

The group then divided into smaller subgroups to discuss different technical aspects of IIGS programming, the occurrence of bugs and how to avoid them. We are looking forward to future releases by WAP of IIGS disks and have been speculating on what will become available, how and when. ☺

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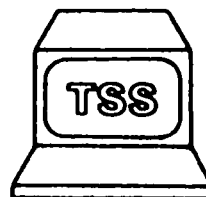
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The Frederick Apple Core now meets on the second Saturday of each month in the large conference room of the Frederick Library at 110 E. Patrick Street, Frederick, MD at 9:30 AM. Programs are normally scheduled for both the Macintosh and the Apple II.

FAC Upcoming Programs:

August 8	- GS Developments - New Products and Graphics; Custom Mac Icon designs
Sept. 12	- Word Processing for the IIGS; Graphic Writer and Word 3.0 for the Mac

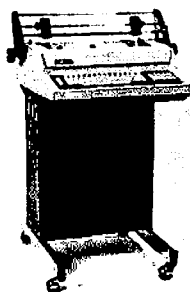
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APPLE II NEWS AND NOTES

by Walt Mossberg

The ENVOY Card Using IBM Disks on Your Apple II

This month's column is entirely devoted to a review of ENVOY, a new, modestly-priced device that allows your Apple II to directly read from, and write to, MS-DOS disks—the disks used on IBM personal computers and their clones. Next month, we'll return to the more usual mix of comments and mini-reviews covering a variety of Apple II software and hardware products.

THE INCOMPATIBILITY PROBLEM

Many Apple II owners are forced by the corporate computer conspiracy at work to use IBM-brand personal computers, or computers which are compatible with IBM's. These machines are sometimes grouped under the label "MS-DOS" computers, because they usually use the clumsy, outmoded MS-DOS operating system. Trouble is, Apple II computers don't run MS-DOS and IBM-compatible computers don't run ProDOS or other Apple operating systems. Worse, Apple and IBM computers actually write on disks in physically different ways.

So even though an IBM-compatible disk (either 5.25" or 3.5") looks just like an Apple disk, you can't pop it into an Apple II disk drive and get your Apple to run a program written on it, or even to properly "read" a text file saved on it. And vice versa. Your best AppleWorks composition, even if saved to disk as an ASCII text file, can't be "read" from that same disk if you place it in an IBM's disk drive, even though your IBM software is supposedly able to read ASCII files.

There have been some attempts to sell products that "fix" the disk incompatibility, but they have been costly and bulky and commercially unsuccessful.

A few months back (*WAP Journal*, 5/87), we pointed out in this column that there is also a way to overcome this problem without directly attacking the disk incompatibility: you can send text between incompatible computers using modems and telephone lines. But that method requires that both machines have modems or some direct cable-to-cable link, with proper software, and—in many cases—a neutral electronic mailbox, such as CompuServe. For many Apple II owners, that method will never be easy, inexpensive, or comfortable.

THE ENVOY SOLUTION

Now ASKY, Inc., a small company in California, has come up with an affordable add-on product for your Apple II called the ENVOY card that provides disk-to-disk compatibility between Apple and IBM. It works without connecting the two machines via telephone lines, cables or anything else. The ENVOY allows you to take an MS-DOS disk from an IBM, pop it into a special disk drive attached to your Apple II, and rapidly convert the files on it to ProDOS for use with Apple programs. The same product also allows you to take an Apple file, convert it on your Apple to MS-DOS, and save it, using the special drive, onto an MS-DOS

disk you can pop into an IBM computer's drive for use with IBM programs.

ENVOY consists of a \$180 add-in card for any Apple][+, Apple //e or Apple IIgs. To this you must add a standard IBM-type disk drive, either by buying and installing it yourself, or by buying it from ASKY already set up. The company sells a "subsystem"—card and drive together—for \$349, roughly the same cost as a regular Apple drive alone, or a modem.

I have been testing an ENVOY "subsystem" (card plus drive) for several months now. And, while it isn't without some problems (described below), I have found it to be an easy, reliable way to bridge the Apple-IBM compatibility gap. It should be a useful tool for all but the most novice users who have a need or an opportunity to share files between Apple II and IBM-compatible computers.

WHAT ENVOY ISN'T

Anybody interested in IBM-Apple compatibility needs to bear in mind a few essential caveats when considering ENVOY as a solution. There's a lot of confusion on this compatibility business, but we'll try to make these points while sticking to this column's credo of being non-technical.

1. The ENVOY card will not allow you to run IBM-compatible programs (like Lotus 1-2-3 or MultiMate or whatever) on your Apple II computer. It isn't designed to do that and therefore doesn't include a type of chip called a coprocessor (sort of an IBM-on-a-board) that would be needed to do that job. If you really need to run such software (and I personally find it unnecessary) you will need an IBM clone next to your Apple (\$500-\$1000 at least). Or, you might wait and see if Applied Engineering releases its own promised MS-DOS card for the Apple II, which—unlike ENVOY—will supposedly allow you to run MS-DOS programs. (But that card, already later than expected, is likely to cost well above \$180.)

2. ENVOY is designed only to let your Apple and IBM use each others' data files, not programs. In other words, you can exchange word processor files between AppleWorks and WordPerfect (IBM), or spreadsheet files between VIP Professional (Apple) and Lotus 1-2-3 (IBM) using ENVOY. But to use the files, you must be able to run on each computer the necessary word processor or spreadsheet programs, written for that computer. For most people, this sort of file transferability is the greatest need, not the ability to run IBM programs themselves.

3. Because ASKY, Inc. is a small, engineering-oriented company, the ENVOY card isn't a smoothly packaged product. The product is out of the test stage and being sold, but it's rough around the edges. For instance, the file conversion software, while very easy to use, is still evolving as this is written; some non-essential software features don't work. The user manual is one of the worst pieces of documentation I've ever seen, written mainly so a technician can connect up disk drives, with virtually

contd.

no explanation of how to use the card.

4. For most average users, buying the ENVOY card alone—without the IBM-type disk drive—is a bad idea. Most people would do best buying the whole \$349 “subsystem” with the IBM-type disk drive and cables included, rather than buying only the \$180 card and shopping separately for the disk drive. You may be able to buy an IBM disk drive and cable and power supply more cheaply, but the average user will be baffled by the task of connecting everything up, at least if he or she is using ASKY’s manual. With the complete system, you can just pop in the card, connect the cable to the drive, and plug it in.

5. It’s hard to buy the ENVOY. As far as I know, it’s available at this writing only from ASKY, Inc. itself—770 Sycamore Dr., Milpitas, Cal. 95035. (408) 943-1940 or (800) 621-0854, x. 330. President is Ronald Sturtevant Stuart. Sales manager is Ryda M. Stuart. I’ve never seen an ad for ENVOY.

6. Support is available, and cheerfully given. But you have to call at the right time and catch the right person in. For many questions, only company president Ronald Stuart seems able to answer.

Luckily, the thing is so easy to use, these lapses aren’t fatal. I’m convinced that anybody other than a total computer novice can install and use the ENVOY relatively easily. No tools or programming knowledge are required. You don’t need to have more than a rudimentary understanding of either ProDOS or MS-DOS. The process of transferring files is menu-driven on-screen and is rapid and uncomplicated. It worked well on my IIgs, and with both a PC-XT compatible and a PC-AT compatible and two different versions of MS-DOS.

HARDWARE AND INSTALLATION

The ENVOY system consists of a card that can control up to 4 IBM-style disk drives, plus one external drive, and a cable to connect them. There’s also a special utility disk which controls the system and does the Apple-IBM file conversion. You install the card like any other card, in any open slot—though slot 7 is preferred, it’ll work in the others as well. Plug one end of the cable into the card, and the other end into the external IBM-style drive.

The drive itself is a box, with its own power supply (plug it into any outlet). ASKY has used different brands and types of external drives, but the one I received has a beige metal case with a single half-height 5.25” drive mounted inside, perpendicular to the desktop. There is room for a second drive as well—either 5.25” or 3.5”—should I want to add one later. The box stands on little rubber feet, and is 13.25” deep, 3.5” wide, and 6.5” high—similar in size and shape to a Sider hard disk. I keep it about two feet from the computer, with my regular Apple drives in-between. I usually keep the ENVOY drive turned off (via an on-off switch at the rear) except when I’m transferring files between Apple & IBM disks.

Installation was quick and easy, once I decided to ignore ASKY’s complex manual. Cable connections were self-evident.

NOTE: One obstacle to setting up your own drive, rather than buying a full system from ASKY, is that most IBM drives are intended for internal use and thus lack a case and separate power supply. If you are so brave or foolish as to obtain your own drive, ASKY does provide a way to hook it into the Apple’s own power supply, rather than having a separate power supply in the drive.

But ASKY doesn’t recommend this in all cases and configurations, so be careful.

CONVERTING FILES

Converting files is easy. You just use the MS-DOS-to-ProDOS utility disk supplied with your ENVOY card. This is a standard Apple ProDOS disk that runs on your regular disk drive (NOT the special ENVOY drive; that’s primarily for MS-DOS disks). The disk is unprotected, and the special utilities on it can be copied to a 3.5” disk or hard disk.

Say you have been writing a report at work on your IBM, using XyWrite III (or any other MS-DOS word processor). Now you want to work on it some more at home, using AppleWorks on your Apple II. Here’s how to use ENVOY to do so. First, save the report on your IBM as a text file on a floppy disk. Let’s call the saved report file “Taxes.” Remove the disk from the IBM and take it home. Once home, insert the ENVOY utility disk into your Apple’s regular bootup drive and insert the MS-DOS disk from work into the special ENVOY disk drive attached to your Apple. Turn on the Apple and the ENVOY utility disk will boot up. You will see a menu of the several utilities on the ENVOY disk. The important one is the File Transfer program. Select it, and you’ll see another menu, as follows:

```
P> ProDOS Utilities
M> MS-DOS Utilities
T> Transfer Files
S> Set Defaults
O> Printer ON/OFF
H> Help
Q> Quit.
```

Select “Transfer Files”, and the “Transfer Menu” appears. From this menu you choose the direction of the transfer (MS-DOS → ProDOS in this case) and then select “Transfer a File”. A final screen comes up on which you confirm which MS-DOS drive to use (there’s usually only one) and the ProDOS Prefix. You then type in the MS-DOS filename you want to transfer (“Taxes” in our little example), and the name you want the file to have in ProDOS (it can be “Taxes” in ProDOS too). That’s all there is to it. The two drives whirl, and ENVOY reads the file from the MS-DOS disk, converts it to a ProDOS file, and saves the resulting ProDOS file on the ProDOS volume you designated. For an average-length file, it’s very, very fast.

In order to work on the file in AppleWorks, remove the ENVOY utility disk from your regular drive, and insert AppleWorks. The ProDOS file you just converted from MS-DOS is an ASCII Text File which AppleWorks can use via the “Add Files to Desktop” menu in that program.

It’s easy to reverse the process, to recapture the file on an MS-DOS disk which you can take back to the office and use in your IBM. After you’re done working with the file in AppleWorks, and have saved it, just print it to disk as an ASCII text file. Then remove AppleWorks and boot up the ENVOY utility disk in your regular Apple drive. Put your MS-DOS disk in the special ENVOY drive. Follow the ENVOY menus as above, except use the “Reverse Direction” command to change the transfer direction to ProDOS → MS-DOS. After you type in the filenames, the drives will whirl and you’ll almost instantly have your “Taxes” file back on your MS-DOS disk, ready for your IBM word processor, complete with the changes or additions you

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made using AppleWorks.

OTHER SOFTWARE FEATURES

The ENVOY Transfer program has some very useful ProDOS and MS-DOS utilities as well. One very nice feature is that you can view on-screen any file in either MS-DOS or ProDOS—an excellent way to check that your transfers have been successful, or that you're using the right files. You can also print any file in either operating system. You can catalog both types of disk, check volume names in both operating systems, delete or rename files, and do other file-handling operations.

Also in the Transfer program, there's a menu from which you can set your default ProDOS prefix, your default MS-DOS drive number or letter, the default ProDOS file type for your transferred files (TXT is the standard), printer slot, onscreen scroll rate, and even the prefix and name of a ProDOS program you might want to automatically run next when quitting ENVOY's utilities.

At this writing, some features listed on the Transfer program's various menus aren't actually implemented. You can't use "Transfer Many Files", which presumably would allow automatic conversion of multiple files. You can't delete files in MS-DOS, and some of the HELP screens are blank. Another problem is that the utilities refer to the special MS-DOS drive in a confusing manner. On IBMs, drives are usually identified by letters; since ENVOY can control up to 4 IBM-type drives, they'd be known as A-D and your first drive would be drive A. On some parts of the ENVOY disk, this system is followed. But elsewhere on the disk, it refers to the MS-DOS drives as "Drives 1-4" or even "Drives 0-3". Just use the lowest number or letter to designate your first and only MS-DOS drive and you'll be OK.

All of the software features described above, including the ProDOS and MS-DOS utilities, are contained in ENVOY's Transfer program. But the disk contains several other programs as well, for occasional use. One is a diagnostic program for the card and MS-DOS drive. It is hard to understand, undocumented and kept flunking my ENVOY card even though the card and drive performed perfectly for me. Another program allows you to change the slot your ENVOY card is in. Still another allows you to format an MS-DOS disk in the ENVOY drive. But I found my IBM would choke on some of the MS-DOS disks formatted by ENVOY.

THE ENVOY DRIVE AND PRODOS

While the special drive controlled by the ENVOY card is mainly for MS-DOS disks, it can also be used as an extra disk drive under ProDOS—though with serious limitations. When you're not doing a file conversion, you can put a blank 5.25" floppy in the drive and format that floppy as a 400K ProDOS storage device. (If your extra drive is the 3.5" type, you can get 800K). You can copy Apple programs to this disk, and it can be booted. Or it can be used to store data. But the limitation is that ProDOS disks formatted in the ENVOY drive can ONLY be used in the ENVOY drive. They won't work in normal Apple disk drives. And any regular ProDOS disk formatted in any regular Apple drive can't be used in the ENVOY drive.

A DRAWBACK

Whether you're using it as a ProDOS device or just to transfer MS-DOS files, the ENVOY drive is seen by your Apple as another drive. If it's in slot 7, for instance, many programs will

report the existence of a drive in Slot 7, D1. This causes a minor irritant: if the drive's power is on, your Apple may try to boot from it, and software that "polls" all your drives looking for disks will take the time to noisily poll the ENVOY drive, too. Even if the drive is powered off, the existence of a drive in slot 7 will still be noted by some software. And, on my IIGs at least, the extra but powered-down drive slows down the system's overall disk access time, causing a perceptible delay in disk reads and writes, even on the drives in slots 5, 6 and 2. I have gotten used to this, but others may not. ASKY says it may one day put a switch on the system to make it invisible to the Apple except when it's being used.

CONCLUSION

The ENVOY system is a very clever, fairly priced product that solves a real problem for Apple II users—how to swap data on disk between Apple and IBM computers. ENVOY won't run IBM software, but that's probably not necessary for most Apple users who also use IBM-compatibles. Swapping data is the key to compatibility for most, and ENVOY does that well.

ENVOY's main disadvantage is that its makers aren't supporting it with adequate marketing, documentation, and software development. Nobody but a real hardware expert should try to buy the card alone and add his or her own drive. But ENVOY is so easy to use, and the need it fills so important, that the combined card and drive are well worth the \$349 they cost for any serious Apple owner who also works with IBM-compatible machines. ☺

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Q & A

by Robert C. Platt and Bruce F. Field

This column attempts to address questions about all of the Apple II computers. Please send your questions to this column c/o the WAP Office.

Q. What is a "RAM disk?"

A. Your computer contains random access memory (RAM) which can be used for storing and recalling information. Unlike a disk which remembers information even after the computer is turned off, RAM loses its information when there is an interruption in power. However, the Apple can access RAM more quickly than it can access data on either a floppy or hard disk. A RAM disk organizes information in the Apple's RAM memory in the same way that it is stored on a disk. As a result, your programs can read and write files to the RAM instead of to the disk drive. This speeds up your Apple's performance. However, before you turn your Apple off, you must copy the files from the RAM disk to a floppy or hard disk if you don't want to lose them.

A special "RAM disk" program is required to teach the Apple to think of a section of RAM as being accessed like a disk drive. Most memory expansion cards for the Apple //e and //c come with such a program. However, the IIgs has a RAM disk program built in, which can be activated from the control panel. The control panel allows you to specify how much memory to reserve for use as a RAM disk. Be sure to set both the minimum and maximum size values to the same number.

Q. What is a "Startup disk?"

A. It is a disk used to start up (or "boot") the computer. When the computer is turned on or restarted with open apple-control-reset, an operating system is read into RAM from the startup disk. Because the operating system, desk accessories and other needed utilities will be present on the startup disk, that disk becomes the first place where the system and most other programs return to look for information as it is needed to be read into RAM. Because a copy of the system must be included on the startup disk, some people mistakenly confuse a "startup" disk with the "system disk" that came with your Apple. You can start up your system from any disk with the proper files, not just with the system disk. Once your computer has been turned on, and your RAM disk loaded with the appropriate software, you can use your RAM disk as your startup disk. (See below.)

Q. How do you prepare a disk for the IIgs that will "boot" as a startup disk?

A. You can create your own startup disk by copying certain files from your System Disk. (It's best to use the latest version—1.2) If you are only going to run under ProDOS 16, the following are necessary: PRODOS and a SYSTEM folder (subdirectory.) The SYSTEM folder should contain:
P16 - the operating system

START - the program launcher

TOOLS/ - folder for system tools

FONTS/ - folder for any character fonts

DESK.ACCS/ - folder for any desk accessories

SYSTEM.SETUP/ - a folder, all programs in it are automatically executed upon booting. File TOOL.SETUP should be in SYSTEM/SYSTEM.SETUP for loading all ROM patches into memory.

If you are going to run Applesoft BASIC, include BASIC.SYSTEM in your disk (not in the system folder.) If you are going to run both ProDOS 8 and ProDOS 16, include P8 in the SYSTEM folder.

If you are only going to run ProDOS 8, then copy file P8 from you system disk onto your startup disk, rename P8 as PRODOS and forget about all of the other files described above.

Q. How do you use a RAM disk as a startup disk on the IIgs?

A. If you have at least 512K of RAM, follow these steps:

- (1) Turn off your IIgs for at least 30 seconds to let the new value take hold.
- (2) Boot the IIgs from the System Disk.
- (3) Run the desktop program. Press open apple-S or choose Format a Disk from the Special menu.
- (4) Select Slot 5, Drive 2 for formatting. Click OK and enter "RAM5" as the name for the disk.
- (5) When asked, "Do you want to format RAM5?" click OK. If you get a different message, then try a different slot and drive for step 4.
- (6) Use the Desktop program to copy the files discussed in the question above onto the RAM5 disk.

To make /RAM5 your startup disk until you turn off your IIgs, return to Launcher, go to the control panel with open apple-control-escape. Use the slots option to set the startup slot to RAM disk. Press return, escape, return, return, which will send you back to the Launcher. Quit the Launcher and press Return to reboot from the RAM disk.

Q. Can I use a RAM disk as a startup disk on other Apple II's?

A. Yes. Many popular RAM cards come with software that will help with this. The exact procedure depends upon which operating system you are using—DOS 3.3, ProDOS, or Pascal.

Q. On a IIgs, can I speed up the Launcher working from 3.5" disk drives?

A. Yes. Most people use the launcher from floppies. But you can put ProDOS 16, ProDOS 8, and Desktop with TOOLS described above onto the RAM disk. (Follow through Step 6.) Instead of using the control panel to make RAM5 your startup slot, you can just launch programs from the RAM disk copy of DESKTOP. When these applications are done, they will

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return to the RAM based DESKTOP.

Another approach is to leave the Launcher program off the RAM disk. Copy BASIC.SYSTEM and DESKTOP onto RAM5. Launch PRODOS from RAM5 and then type - DESKTOP from the] prompt. In this method, at the end of each application, you return to the DESKTOP on the RAM disk without using the Launcher.

Q. The IIgs keyboard has a "clear" key. How do you test for the input of this key from an Applesoft BASIC program?

A. Try this program segment:

```
100 GET AS
110 IF ASC(AS)=24 THEN PRINT
    "YOU PRESSED CLEAR."
```

The "clear" key generates the same ASCII code as pressing Control-X. Also note that both the "enter" and the "return" keys generate the same ASCII 13 code. All other keys on the IIgs numeric keypad generate the same ASCII codes as on the main keyboard. The only exception which I found on my IIgs was that Control-2 generates ASCII code for "2" from the numeric keypad and generates an "illegal quantity" error in line 110 from my main keyboard. In the case of the Control-2, AS is the null string and has a length of zero. This is an interesting bug in Applesoft for the IIgs.

Q. The ProDOS CHAIN command is supposed to allow one BASIC program to call a second BASIC program without losing the contents of program variables. Is there a bug in CHAIN?

A. Yes. If you have BASIC.SYSTEM, version 1.1, use this work around: Before you CHAIN, POKE 41859,3. Immediately after you CHAIN into your next BASIC program, POKE 41859,7. A fix from Apple will probably be incorporated into the version of ProDOS-8 following ver 1.4.

Q. I use AppleWorks and Simply Perfect, a DOS 3.3 based word processing program on my IIgs. Can I switch between them without rebooting?

A. Yes. Try Softswitch from Roger Wagner Publishing, \$49. This program allows you to install any three Apple II programs in memory at the same time. The only requirement is that the program must support interrupts (that is, allow access to the control panel.) Even copy protected programs will work.

Softswitch adds "Softswitch" as a entry on the classic desk accessory menu. This desk accessory allows you to switch between programs in the three windows.

Q. Is it possible for a program to appear on the classic desk accessory menu but not be present in the startup disk's DESK.ACDS folder?

A. Yes. Files with ProDOS type \$B6 stored in the startup disk's SYSTEM/SYSTEM.SETUP folder will appear on the CDA menu without being present in the DESK.ACDS folder. Two examples are SoftSwitch and Nifty List.

Q. I have a IIgs. Can I call the ROM tools from Applesoft BASIC?

A. Not at this time, but Roger Wagner Publishing expects to release a utility package in September or October which will access the Toolbox directly through & commands. ☺

WORD PERFECT 1.1: A Review by Howard M. Berman

WORD PERFECT is a power word processor program. Actually, that is only the start of the accolades for this (in my opinion) superb program for the Apple IIc and IIx. (Word Perfect Corporation says that it will work with any truly compatible 128K minimum memory). We use Word Perfect at the office on the "other system" and when I saw that it was available in ProDOS I had to try it. I feel that it is almost as good as the MS-DOS version. This will be explained later. The program has many good useful features: auto page numbering; bold, underline, and center text; automatic date insertion if you have a clock; headers, footers, and footnotes; indents; overstrike; super and subscripts; and macros and mailmerge, to name a few. I counted about 127 different features/commands compared to about 135 for the "other" version.

There is also a 50,000 word spell checker that is easy to use. In fact the entire program is easy to use. The documentation is superb: it has the same tutorial/learning examples as the MS-DOS version. The manual is clearly written, comprehensive and easy to follow. The publisher is easy to contact and readily and pleasantly answers questions. A keyboard template is furnished that fits above the top row of keys. In addition there is a quick reference card detailing the location of all of the features. The program utilizes open Apple-number and closed Apple-number combinations that bring up menu choices across the bottom of the screen. These are selected with the number keys. If you are familiar with the "other" version you will be quite surprised at the similarities between the keyboards and between the screen prompts.

The macros are easy to define and the program supports about fifty of the most common printers. Three can be installed at one time and custom installation is also available. Despite these accolades, however, there are several drawbacks (although they do not dampen my enthusiasm for the program). The program is slow and disk intensive. However, it should perform better with a 512 or one megabyte memory.

The most disconcerting problem is the cursor. I prefer the blinking line, as in APPLEWORKS, or the WORD PERFECT MS-DOS version, instead of a vertical white solid bar. In addition, a line draw feature (as in the MS-DOS version) would be quite useful. Finally, a thesaurus would be another useful feature. Since the program comes on four disks, another one with a thesaurus would not be unreasonable. These are a few things that might be changed for the next version.

In summary, I am quite enthusiastic about WORD PERFECT for the Apple. It is a powerful, heavy duty program that anyone should be able to use easily. Finally, with highest praise to the publisher, this program is not copy protected. ☺

I LOVE APPLE MUSIC - SIMPLE APPLE MUSIC: Part 3

by Gary Hayman © 1987

In Parts 1 and 2 we played with paddle/joystick/tablet sounds. We listened to some random notes and developed a sub-routine for some interesting sounds. We produced musical scales (major and chromatic) to enjoy and recognize.

Well it's now time to get down to some serious music business. Remember, what we are doing is to insert a little music into our programs, or, at the least, listen to a couple of songs that we programmed into Applesoft. Also, at this point you may know very little, or nothing at all, about printed music. That's alright—neither do I. But, I have learned just enough so that I can accomplish the above task easily, and it is my learning and ideas that I want to share with you.

SHEET MUSIC

When we first pick up some sheet music we recognize it as a written form of symbols representing sound, and wonder how anyone can make sense out of it in order to play an instrument. Fortunately for us, because we are producing simple music on our Apples, we do not have to know all there is to know. We will only be programming the notes and their durations into our programs.

In Figure 1 we see a musical staff. Sometimes there is only one and other times there is a second below the first with a space between the two. When the two are shown it is called a Grand Staff and is made up of the Treble Staff (upper one) and the Bass Staff (lower one). You will see two different symbols (Treble Clef and Bass Clef) that identify the staves. Sometimes there are other symbols in their place.

Occasionally, but not always, there are smaller symbols placed next to the major symbols. These are called Key Signatures. They look like “#” or “b” and represent which notes become sharps or flats (explanation later) throughout the entire musical score. Then you might see some numbers placed one over the other. They are the Times Signature. Many times it will be 4/4, but you could find 3/4, 2/4, 6/8. The upper number indicates how many counts in a measure, while the lower indicates

what type of note receives one count. You will see long straight vertical lines every so often on the staff which are called Bar Lines. The space between two such Bar Lines is called a Measure. You might see a double Bar Line, one being thicker than the other. This signifies the end of the musical piece, or if there are two dots next to it it would signify a musical repeat. I will discuss musical repeats in a later article. You will find them very easy to program with your Applesoft line editor (mine is G.P.L.E.) and will look forward to using them, for they make music writing much faster.

Another item of interest will be endings. You will see them above the staffs looking like enclosures with numbers (usually 1 or 2) printed in them. Getting more advanced, you might see a lot of foreign words around the music. No you don't have to learn them. But there are a couple that are important for our purpose—like “Fine”, “D.C. al Fine”, “Coda”, “D.S. al Coda” that I will discuss in a later article. They are musical traffic flags that govern repeats. You may see some curved lines. These could represent Ties. Ties are lines joining two notes that signify that the first note is held on for the duration of the two notes.

our Applesoft program the variable “F” stands for frequency and the variable “D” stands for duration. All we have to do is to look at the musical staff and decide what “F” and what “D” to place into our program so that the sound will be correct (or as near correct as we can make it).

The position of the note on the staff and its shape (icon) tells us its frequency and duration. Since I haven't been able to commit everything to memory, I have made some charts and tables that aid me in programming my music. I hope you will have them available for you when you program your music.

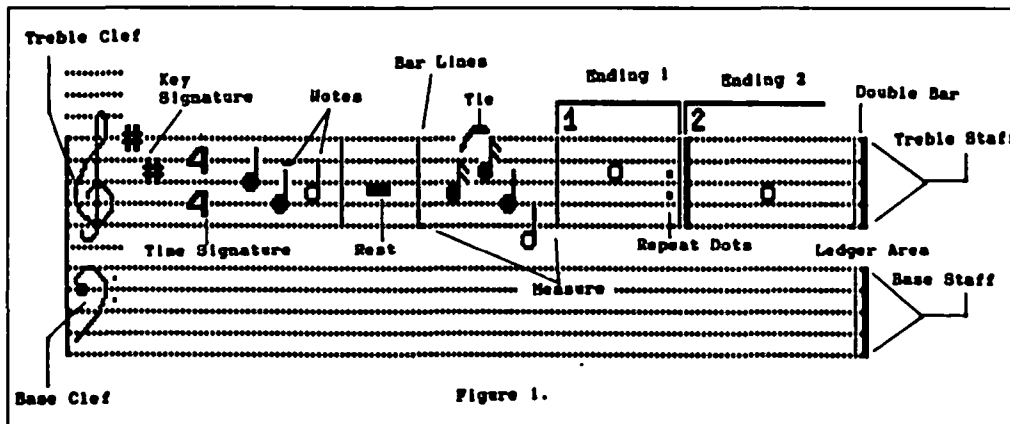
First, a couple of conventions:

TONES: (Range 1 - 255); highest (1) (silence), lowest (255). (Note: some of the highest notes (tones) 2-6 are so high you may not be able to hear them.)

DURATIONS: (Range 1 - 255); shortest (1), longest (255)

DURATION

Let's discuss this first because it is the easiest. A duration is how long a note is held (maintained), the longest note being a whole note and the shortest note, for our purpose, being 1/64 of a whole note—called a grace note. If, in our programming, 255 represents the longest note that we can



Now to the main part—the notes. Most of what you see on the staff are notes. Notes are made up, as far as we are concerned, of FREQUENCY and DURATION. It is the frequency and duration of the note that we place into our program. In

have, then a note held 1/2 as long would be represented by 127 (it would be called a Half Note). 1/4 of the longest note (a Quarter Note) would be represented by 64, etc. Each note has an icon that appears on the musical staff (See Table 1). Sometimes

contd.

these icons have little "dots" next to them. These dots mean that the note is to be held a little longer—actually one-half as long again. There are times that you don't make a sound, these are called rests. Their icons and durations are contained in Table 2. They will receive a frequency of "1" for silence and an appropriate duration. I have also placed icons for Triplets (three notes in the space of two) and Quintuplets (five notes in the space of four) on the chart for your convenience, but I won't discuss them till later. Table 2 contains the Rest values.

You will notice that from the eighth note down I am listing two icons—one with descending "ski slope(s)" and the other with bar(s). This is because that many times short notes are joined together for easy recognition. Thus in Figure 2, instead of indicating 4 eighth notes as is first represented, they are indicated in the second manner.

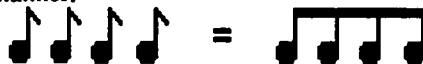


Figure 2.

***** * TABLE 1 * * NOTE DURATION VALUES * *****		
DURATION ICON	DURATION NAME	DURATION VALUE
	WHOLE NOTE	255
	DOTTED HALF NOTE	192
	HALF NOTE	127
	DOTTED QUARTER NOTE	96
	QUARTER NOTE	64
	DOTTED EIGHTH NOTE	48
	EIGHTH NOTE	32
	DOTTED SIXTEENTH NOTE	24
	SIXTEENTH NOTE	16
	DOTTED THIRTY-SECOND NOTE	12
	THIRTY-SECOND NOTE	8
	DOTTED SIXTY-FOURTH NOTE	6
	SIXTY-FOURTH NOTE (GRACE)	4
	TRIPLET (Add the duration values of only two of the three notes together. Divide by 3 and give the resulting value to each of the three notes.)	
	QUINTUPLET (Add the duration values of only four of the five notes together. Divide by 5 and give the resulting value to each of the five notes.)	

***** * TABLE 2 * * REST DURATION VALUES * *****		
REST ICON	REST NAME	DURATION VALUE
	WHOLE REST	255
	DOTTED HALF REST	192
	HALF REST	127
	DOTTED QUARTER REST	96
	QUARTER REST	64
	DOTTED EIGHTH REST	48
	EIGHTH REST	32
	DOTTED SIXTEENTH REST	24
	SIXTEENTH REST	16

By the way, I want to remind the reader that at times I may stray from being technically and musically correct in order to make things easier to understand. My main purpose is to create a simplified way for you to take printed music and place it in your programs. As long as it works reasonably well, both you and I will be happy. Real musicians and experienced "techies" are invited to skip these articles and read something else, otherwise they might gnash their teeth too hard.

FREQUENCY

The duration of the note was easy to distinguish by looking at the icon representing the duration. The frequency is a little more involved because it relies on WHERE the icon is placed on the staffs. It may appear on a staff line, in a space between staff lines, above the Treble Staff in an area called the Ledger, and between the Treble Staff and Base Staff in another area called the Ledger (we will not permit notes on or below the bottom staff line of the Base Staff). Musicians can look at a sheet of music and immediately know what note on their instrument to activate in order to produce the sound written in the music. I am not so fortunate, I must have some help. You will find two tables that I designed to make life easier for you.

Table 3 presents the note and its value (by the various octaves) that you will use in your Applesoft program. If you know the octave and the name of the note by looking at the music, you can use the matrix of Table 3 to find the necessary numerical value that you will be using. By the way, you will probably find that most of the music that you will program will be contained in octaves 2 and 3 with maybe a couple of notes from octave 4.

Now if you don't know the name of the note by just looking at its position on the musical staffs—not to worry, use Table 4. Here the notes are grouped by OCTAVE from the Base Staff to the Ledger area above the Treble Staff. Please note that the broad horizontal lines (made up of "=" characters) represent the lines of the staff. You will find the "natural" notes (un-accented—not a sharp or flat) between the double sets of slanted lines. Here's what you do. Look at the printed music, find the note in the same relative position on Table 4 and use its frequency number. If the note is a flat, read the number to the left (outside the double sets of slanted lines). If the note is a sharp, read the number to the right.

contd.

 * TABLE 3 *
 * NOTE VALUES *

NOTE		OCTAVE					NOTE
		1	2	3	4	5	
G#		136	68	34	17	8	
G		144	72	36	18	9	G
Gb	F#	152	76	38	19	9	
F	E#	160	80	40	20	10	F
Fb	E	172	86	43	21	10	E
Eb	D#	180	90	45	22	11	
D		192	96	48	24	12	D
Db	C#	204	102	51	25	12	
C	B#	216	108	54	27	13	C
Cb	B	228	114	57	28	14	B
Bb	A#	240	120	60	30	15	
A		255	127	64	32	16	A
Ab		---	136	68	34	17	

b - Flat # - Sharp Middle C = 108 (Octave 2)
 Most of your music will be in octaves 2 and 3

(outside the double sets of slanted lines). If the note happens to be in the ledger area, where there are no staff lines, you will find that the music publisher has inserted very short lines so you can tell how many steps above or below the staff the note is located.

 * TABLE 4 *
 * NOTE VALUES ON STAFFS *

```

G--- (Gb 19) // (G) 18 // (G# 17) |
F (Fb 21) // (F) 20 // (F# 19) |
E--- (Eb 22) // (E) 21 // (E# 20) |
D (Db 25) // (D) 24 // (D# 22) | OCTAVE 4
C--- (Cb 28) // (C) 27 // (C# 25) |
B (Bb 30) // (B) 28 // (B# 27) | (LEGER AREA)
A--- (Ab 34) // (A) 32 // (A# 30) |
G (Gb 38) // (G) 36 // (G# 34) |
F---(Fb 43)-----// (F) 40 //----(F# 38)-----|
E (Eb 45) // (E) 43 // (E# 40) |
D---(Db 51)-----// (D) 48 //----(D# 45)-----| OCTAVE 3
C (Cb 57) // (C) 54 // (C# 51) | I TREBLE
B---(Bb 60)-----// (B) 57 //----(B# 54)-----| I-STAFF
A (Ab 68) // (A) 64 // (A# 60) | I
G---(Gb 76)-----// (G) 72 //----(G# 68)-----| I
F (Fb 86) // (F) 80 // (F# 76) | I
E---(Eb 90)-----// (E) 86 //----(E# 80)-----| I
D (Db 102) // (D) 96 // (D# 90) | OCTAVE 2
C--- (Cb 114) // (C) 108 // (C# 102) | (LEGER AREA)
B (Bb 120) // (B) 114 // (B# 108) | I
A---(Ab 136)-----// (A) 127 //----(A# 120)-----| I
G (Gb 152) // (G) 144 // (G# 136) | I
F---(Fb 172)-----// (F) 160 //----(F# 152)-----| I
E (Eb 180) // (E) 172 // (E# 160) | I BASE
D---(Db 204)-----// (D) 192 //----(D# 180)-----| OCTAVE 1
C (Cb 228) // (C) 216 // (C# 204) | I-STAFF
B---(Bb 240)-----// (B) 228 //----(B# 216)-----| I
A // (A) 255 // (A# 240) | I
  
```

b = Flat # = Sharp Middle C = 108 Octave 2
 Most music in octaves 2 and 3. Long dashed lines represent staff lines.
 (A) 255 ---> (A) 127 = BASE STAFF (E) 86 ---> (F) 40 = TREBLE STAFF

EASY PUBLISHED MUSIC

Now you have the basics for finding the frequency and duration of the note and determining their values for your Applesoft program—but only the basics. I will have to develop the topic a little further in a later article. But for now, you have enough for some simple music. If you pick up a complicated piece of music you will be lost. Fortunately, there are music publishers that recognize your problem and publish music, even old

classics, jazz, rock, country western, R & B, and contemporary songs, in a simple fashion. They make the notes large (great for my eyes), they arrange it so that it is easy to follow (simple arrangements), some even put the letter corresponding to the note right on the note—now that's a convenience. Two such publishers are the Hal Leonard Publishing Company, 8112 West Bluemound Road, P.O. Box 13819, Milwaukee, WI 53213 (Easy-To-Play Speed Music), and Mail Order Music, P.O. Box 310, New Berlin, WI 53151 (Easy Letter Music). Write these companies and ask for their FREE catalogs of Easy Music. I am sure that you can find some Easy Music in your local library or music store. I have shopped at Dale Music Co on Georgia Ave. in Silver Spring but I am sure that there are other music shops that have easy music in your area too.

LET'S PLAY SOME SONGS

I can't just leave you here without letting you hear something and at least getting you started. Go to your Apple and type and save the following short program. You will be using it alot. Please use the disk that contains your other listings, especially SOUND DRIVER.

NEW

- 10 REMONE SONG DATA PLAYER
 - 20 TEXT : HOME :D\$ = CHRS (4)
 - 30 PRINT D\$;"BLOAD SOUND DRIVER"
 - 40 READ FM, DM
 - 50 FOR X = 1 TO 300
 - 60 READ F, D
 - 70 IF F = 0 AND D = 0 THEN 100
 - 80 POKE 768, F * FM: POKE 769, D
 - * DM: CALL 770
 - 90 NEXT X
 - 100 END
 - SAVE ONE SONG DATA PLAYER
- (Listing 7)-----

You will use Listing 7 (ONE SONG DATA PLAYER) to play songs that you will have created and saved in data statements. There will be other methods later on, but for now let's use the data statements for our music. You will construct a small collection of Applesoft programs that contain your data statements of music and use the ONE SONG DATA PLAYER to play them.

Figure 3 is a short piece of music for the bugle call "CHARGE". I used Tables 1 and 4 to write my music program (Listing 8). See if you can follow what I did. While the

contd.

music is not professionally printed, I feel that it has a handwritten quality reminiscent of Amadeus Mozart. Don't you agree?

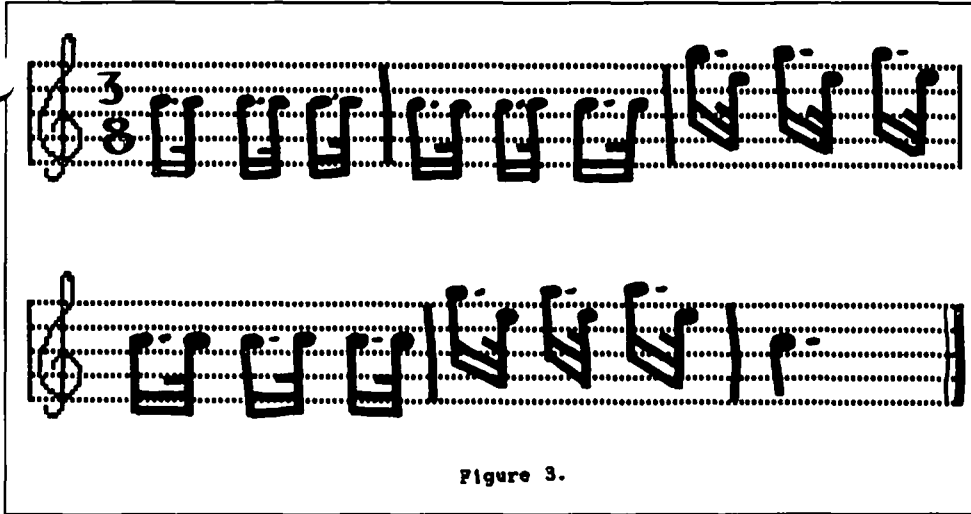


Figure 3.

All right, now type and save the following program:

```

NEW
1000 REM DATA SONG CHARGE
1010 DATA 1, 2.5: REM FREQUENCY
      AND DURATION MULTIPLIER (ALWAYS)
      (most of the time it may be —> 1010 DATA 1, 1)
1020 DATA 54, 24, 54, 8, 54, 24, 54, 8, 54, 24, 54, 8
1030 DATA 54, 24, 54, 8, 54, 24, 54, 8, 54, 24, 54, 8
1040 DATA 36, 24, 43, 8, 36, 24, 43, 8, 36, 24, 43, 8
1050 DATA 54, 24, 54, 8, 54, 24, 54, 8, 54, 24, 54, 8
1060 DATA 36, 24, 43, 8, 36, 24, 43, 8, 36, 24, 43, 8
1070 DATA 54, 96
1999 DATA 0, 0: REM END MARKER (ALWAYS)
SAVE DATA SONG CHARGE

```

—————(Listing 8)—————

(Hint) I used my Applesoft line editor (G.P.L.E.) to help me write the above. I noticed that certain measures in the music were repeated, so after typing line 1010 I duplicated it twice with the editor and renamed the duplications as lines 1020 and 1050. Line 1040 was duplicated and renamed as line 1060. Thus, with just a couple of key strokes, much of the music was written.

Here is the procedure for playing the "DATA SONGS" that you will be writing.

- 1) Run RENUMBER (I discussed its valuable use in Part 1 of this series).
- 2) Load ONE SONG DATA PLAYER.
- 3) Type "&H" so that the program is placed on Hold.
- 4) Load your DATA SONG. In the example above it would be DATA SONG CHARGE.
- 5) Merge the two programs by typing "&M".
- 6) Inspect the result with a LIST if you desire.
- 7) RUN it. Want to hear it again? Type RUN (there are other ways, but this will do for the moment).
- 8) Want to hear another data song? Type DEL 1000,1999. Follow steps 3 through 7 above.

You will note that I snuck in something new—the Frequency and Duration Multipliers. By changing these numbers a small amount you can cause the frequency and duration of each note to change up or down exactly relative to all the other notes, without having to edit your data file. In the above example, I found that

the duration was too quick, so I slowed it down with a duration multiplier. A word of caution, you have to be careful that the result of any multiplication does not produce a number that is greater than 255. If I had used 3 as a duration multiplier the result of my longest duration, 96, multiplied by 3 would exceed 255 and the program would not work. Of course there are work arounds. I will discuss some when I talk about advanced techniques. Play around with both the frequency and duration multiplier numbers if you like and see how it effects the musical piece.

The next couple of listings are some more musical data files that you might like to play with. Save each and use them with the above ONE SONG DATA PLAYER in the manner that I outlined for you.

```

NEW
1000 REM DATA SONG GIVE A WHISTLE
1010 DATA 1, 1.1
1020 DATA 108, 64, 80, 64, 86, 64, 96, 64, 108, 64,
      60, 64, 64, 64, 72, 64, 80, 64, 48, 64, 54, 64,
      57, 64, 54, 64, 1, 64
1030 DATA 48, 32, 48, 32, 48, 32, 48, 32, 48, 64, 54,
      64, 1, 64, 48, 32, 43, 32, 54, 64, 1, 64, 72, 32,
      72, 32, 72, 32, 72, 32, 72, 64, 80, 64, 1, 64,
      72, 32, 64, 32, 80, 64, 1, 64, 1, 127
1040 DATA 108, 64, 80, 64, 86, 64, 96, 64, 108, 64,
      60, 64, 64, 64, 72, 64, 80, 64, 48, 64, 54, 64, 57,
      64, 54, 64, 1, 64
1050 DATA 48, 32, 48, 32, 48, 32, 48, 32, 48, 64, 54,
      64, 1, 64, 48, 32, 43, 32, 54, 64, 1, 64, 72, 32,
      72, 32, 72, 32, 72, 32, 72, 64, 80, 64, 1, 64, 72,
      32, 64, 32, 80, 64, 1, 64, 1, 127
1060 DATA 86, 127, 64, 96, 54, 32, 43, 64, 43, 64,
      43, 127, 48, 64, 54, 64, 57, 64, 64, 64, 68, 192,
      1, 64
1070 DATA 86, 127, 68, 96, 57, 32, 48, 64, 48, 64,
      48, 127, 54, 64, 1, 64, 48, 32, 48, 32, 48, 64,
      48, 64, 54, 64, 1, 127
1080 DATA 108, 64, 80, 64, 86, 64, 96, 64, 108, 64,
      60, 64, 64, 64, 72, 64, 80, 64, 48, 64, 54, 64,
      57, 64, 54, 64, 1, 64
1090 DATA 48, 32, 48, 32, 48, 32, 48, 32, 48, 64, 54,
      64, 1, 64, 48, 32, 43, 32, 54, 64, 1, 64, 43, 32,
      43, 32, 43, 32, 43, 32, 43, 64, 48, 64, 1, 64
1100 DATA 43, 32, 38, 32, 48, 64, 1, 64, 1, 64, 48,
      64, 40, 64, 48, 64, 60, 64, 72, 64, 48, 64, 60, 64,
      72, 64, 86, 64, 80, 192
1999 DATA 0, 0
SAVE DATA SONG GIVE A WHISTLE

```

—————(Listing 9)—————

```

NEW
1000 REM DATA SONG VARIOUS
1010 DATA 1, 1
1020 REM GIVE MY REGARDS...
1030 DATA 108, 64, 96, 127, 86, 64, 80, 127,

```

contd. on pg 34

COMPUTERS IN EDUCATION

by Joseph A. Hasson

I. Introduction

Perhaps, no other educational innovation has expanded so rapidly in our schools as computers. This expansion is predicated on a highly complex process that requires careful planning, a willingness to experiment intelligently, and adequate resources. One should add that in adopting computers in our schools, one should have in the back of his (her) mind a theory of learning best suited for the situation at hand. Factors to consider in the placement of computers include:

- (1) Planning for the adoption of computers
- (2) Budgeting and financing for their acquisition
- (3) Actual acquisition
- (4) Placing them in the schools - when? where? why? how many? how much?
- (5) Training of teachers
- (6) Provisions for servicing and maintenance of computers
- (7) Revision of textbooks to fit into and be correlated with computer-assisted instruction
- (8) Development of software that would appropriately supplement textbooks
- (9) Development of new curriculum and revision of existing curriculum

What is computer-assisted instruction? Briefly, it is the use of the computer for the direct instruction of students. Four modes of use are generally involved

- (a) Drill and practice
- (b) Problem solving
- (c) Simulation
- (d) Tutorials

These modes of computer assisted instruction do not include what is called in the literature (1) computer managed instruction or (2) the teaching of computer science. Even the concept of computer assisted instruction requires further clarification beyond identifying the four modes. Clarification involves recognizing the following conditions:

- (a) CAI can be a Supplement to traditional forms of instruction—that is, normal classroom instruction.
- (b) CAI can be used as a Substitute for traditional forms of instruction either in whole or in part.
- (c) CAI can and should be compared to other non-traditional methods of instruction which include
 - (i) individual tutoring
 - (ii) language laboratories
 - (iii) film strips
 - (iv) other

First, some statistics on the use of microcomputers for student instruction in elementary and secondary schools in the United States, comparing 1981, 1984 and 1985.

	1981	1984	1985	stu//mic.
No. of Public Schools	84,225	81,100	80,768	45.5
% using computers	18.2	85.1	92.2	
Elementary schools	53,268	60,967	50,805	55.3
% w/m.c.	11.1	82.2	91.0	
Jr.High	10,106	9,791	9,732	41.6
%w/m.c.	25.6	93.1	97.3	
Sr.High	15,589	15,152	15,092	37.9
%w/m.c.	42.7	94.6	97.4	

Private schools n.a. 24,409 23,398 41.3
%w/m.c. n.a. 53.0 70.3

Notes: stu/mic = no. of students per micro-computer
w/mic = percent of schools (by category) with micro-computers

Source: Data from Statistical Abstracts of the U.S., 1987, Table No. 218, p. 132.

From these data it is clear that well over half of the schools in the nation have at least one computer. Of the total public schools of 80,768 in 1985, 74,447 had one or more computers—a total of 849,962. A more detailed breakdown of these data is available, but is not reproduced here. Further research would also reveal the geographic distribution of computers and differences in their incidence between school districts with high average incomes vs. those with lower average incomes. There is danger that ours will become a two-tiered society—of 'haves' and 'have-nots' where computers are concerned. We need to be sensitive to the long-run economic and social implications of such a development. A user group like WAP has the potential, it seems to this observer, of making a contribution in this area. The rapid expansion of computers in schools has not been without problems. Such problems are inherent in the adoption of a new technology. [One needs only recall the problems schools encountered when they switched to "the new math." Things people had been doing were suddenly given new labels like 'associativity', 'commutativity', 'inverses' etc. Those very labels generated apprehension and resistance.] Hence, it is almost natural that resistances arise when 'new' and 'old' clash; the 'old' and 'vested interests' feel insecure and endangered. Consequently, careful, intelligent planning and resources to minimize these problems are required. By 1990 the number of computers in American schools will have doubled, reaching an estimated pupil-computer ratio of 1:14 by 1990. Some educators predict a ratio of 1:1 by mid-1990's: a computer on every desk.

The British, the French and Japanese are, also, pressing hard on this front. In Japan, 70 percent of high schools will have computers by the end of the decade. [However, in a report published by the U.S. Department of Education entitled "Japa-

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nese Education Today" available from the U.S. Government Printing Office, it is indicated that "computer and other learning devices are not evident in the Japanese classrooms; in 1983 only 3 percent of lower secondary schools had a personal computer, and few were used for instruction." (p. 34)] France has a campaign under the banner "100,000 Computers in Our Schools" by 1995. The British with the benefit of generous government subsidies, lead now with 98 percent of schools equipped with microcomputers. Some of the general problems that have arisen in the use of computers are as follows:

- (i) inconsistent use of technology
- (ii) lag in teacher training
- (iii) scattershot approach in acquisition of hardware and of software

In addition, there are five trends which raise serious questions about the way U.S. schools may be rushing headlong into the computer age:

- (i) There is differential access to computers (between regions and income groups);
- (ii) New roles in schools have emerged in response to the microcomputer;
- (iii) There may be a lack of proper integration of micros into the classroom and the curriculum;
- (iv) Software problems arise both because packages may be inadequate quantity-wise and qualitatively;
- (v) There is lack of adequate knowledge of the effects of computers on the learning processes in the schools;
- (vi) There is a lack of systematic information sharing;
- (vii) There is need for Federal funding to equalize opportunities among rich and poor areas.

Each of these points can and should be greatly expanded in a comprehensive study of the use and impact of computers on our educational systems and processes.

A word about the philosophy of computer usage. Two distinct elements come together in computers. First, there is the obvious ability to store large amounts of information. Second, there is the ability to process information in conformity to strict logical procedures. The storage of data in computers is equivalent to the presence of memory in the human being. The following of strict procedures required with computers is "equivalent" to reasoning in the human being.

Therefore, what Roszak calls the "cult of information" has concluded that what computers do corresponds somewhat to what we call THINKING. This sounds convincing to the general public—in fact, the term invented to depict the high-powered performance of these functions is called "artificial intelligence." The adjective "artificial" is used to distinguish it from "human". Those against the "cult of information" argue that a vital distinction is being blurred. The powers of human reasoning and human imagination are in danger of being diluted by low grade mechanical counterfeits. Computers and their uses, therefore, are affected by commercial interests and have political implications. The training of people to use computers and their considerable commitment to them can seriously hamper their capacity to think through on important social and ethical questions; or engage in philosophical speculations which are beneficial per se or which may be the antecedents of new fields of human knowledge.

I was in Martinsburg, W.Va. a couple weeks ago where I met a gentleman who, it turned out, was the Superintendent of Schools of Garrett County, Western Maryland. I exploited the chance meeting by discussing with him the role of computers in the schools under his jurisdiction. He was delighted to talk and to provide me with some interesting information. The information indicated at what levels of schooling efforts are made to develop computer literacy among students, the successive stage students pass through, the use of computers for instructional purposes—language arts, math, science, etc. [The reader should be cautioned that no standardized definition exists as to the components of 'computer literacy.'] Based on that chance encounter, I became curious about how computers were being used in Montgomery County Schools. I called the Board of Education, and learned there is an Office of Computer-Assisted instruction under the direction of a Ms. Beverly Sangston. She took time to talk with me and gave me some literature on what is happening in Montgomery Schools.

The first item that I received from her is a Statement of Policy, issued by the Board of Education and entitled, "Instructional Uses of Computers." This Statement is broken down into three parts:

- I Purpose
- II Process
- III Feedback Indicators

I summarize the major points under each part.

I Purpose. The five main purposes of this Montgomery County Policy are:

- A] Ensure that students become computer literate. In Montgomery Co., there are four facets to computer literacy.
 - (i) familiarity with computers and their usage;
 - (ii) familiarity with programming languages;
 - (iii) use of computer application programs ;
 - (iv) understanding social, ethical and technological impact of computers;
- B] Student competency in use of computers as a tool for school and lifetime learning.
- C] Career preparation in computers.
- D] Equitable availability to all students.
- E] Education of instructional staff.

II Process. In order to implement these objectives, the Superintendent will take the following steps:

- A] He will develop CURRICULUM to develop computer literacy. He will adhere to the following format:
 - (i) grades K-8: develop computer literacy;
 - (ii) grades 9-12: computer literacy and the offering of computer science courses;
 - (iii) grades K-12: develop materials and methods for using the computer in all appropriate subject areas as an aid to learning;
- B] Standards of Student COMPETENCY will be established in the programs and courses developed in accord with the policy. Development of student competency will take place through computer-aided instruction, knowledge of data retrieval, data manipulation, problem solving, key-boarding, text editing.
- C] Staff COMPETENCY will be developed to meet

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responsibilities of each position. Selection of staff to teach computer literacy/computer science courses based on demonstrated skill and knowledge of computers.

D) Staff Training

E) Instructional materials - Software

1. Selection

2. Evaluation

3. Some inhouse preparation

Does the software fit in with the curriculum? with teaching strategies? with the grade level? with educational goals? What are vendor arrangements?

F) Hardware

1. Selection

2. Evaluation

3. Cost-effectiveness

4. Matching of software with hardware

5. Maintenance and servicing problems.

G) Extended Use of Computers beyond classroom periods

H) Community Involvement

III Feedback Indicators: These have to do with

A) Budget - capital and operating costs

B) Detailed description of courses: syllabi

C) Measures of student and faculty skills with computers

D) Measure of learning gains via computers

E) Follow-up surveys of graduates to determine value of courses in MCPS.

I wish to turn to a more detailed consideration of the curriculum that has been put into place in the Montgomery County Public School System.

(i) K through 8th grade:

(a) Computer literacy

(b) Procedural thinking which includes learning

(1) How to solve problems:

- Define problem

- Subdivide problem into component part

- Develop procedures for solving

(2) Modify procedure if conditions change

(3) Distinguish procedures used by

- Humans

- Computers

(ii) Grades 9-12

(a) continue developing computer literacy

(b) make available computer science courses

Note: Computer science courses cannot be substituted for either Mathematics or Science credits required for high school graduation. Courses offered are as follows:

1) Programming for Problem-Solving I - for grades 9, 10, 11, 12. This involves learning BASIC and structured programming techniques.

2) Programming for Problem-Solving II - for Grades 10, 11, 12. This involves (a) identification of problems, (b) the use of BASIC, (c) applications in different subject areas and (d) testing programs and students.

3) Computer Applications - Grade 9, 10, 11, 12. This involves

(a) using prepared computer programs,

(b) especially Data base, Spreadsheets, Word processing. Projects will be initiated in these areas and will be completed.

4) PASCAL (prerequisite Algebra II or third year of a foreign language) for grades 10, 11, 12. Points considered in this course

(a) Teaching of a modern high-level computing language;

(b) Learn modern computer theory

(c) PASCAL is considered a procedural language which employs top-down procedures and is appropriate for problem-solving.

(d) PASCAL is considered a useful and effective computer language because it lends itself well to sub-programming for the solution of problems. It has IDENTIFIER terms and Control structures.

5) Advanced Placement Computer Science A & B for Grades 11 and 12. This is a two-semester sequence for students of high academic ability with a strong interest in computer science and who want to prepare for the Advanced Placement Computer Science exam. A qualifying score in this exam enables a student in some colleges to obtain college credit or advanced standing. Course involves (1) projects, (2) use of Pascal, (3) 130 minutes of machine time per day per student, (4) primitive and linear data structures, (5) development of algorithms, etc.

In addition, I learned that M.C. microcomputers were initially introduced in the Senior High Schools, and that they then spread out from there.

In K - 8th grade, computer usage includes (a)-learning the keyboard, (b) loading and booting the computer, (c) assist in the instruction of Mathematics, Science and Reading. In the fourth grade, students are introduced to LOGO.

Teacher training involves the following: offering numerous—as many as 20 in-service courses for which teachers receive 3 credits each. These are 15 week courses offered in increments of 5-weeks each.

There are 103 elementary schools in M.C. and there is considerable school autonomy. However, there are some schools that are designated PILOT Schools. These PILOT schools are subject to 2 years of experimentation in the use of computers in instruction and the testing of software. Among these 103 elementary schools, each has a minimum of three computers; the maximum number of computers in elementary schools at this time is 15. At the 6th grade level, there are 24 schools which are learning to use DATABASE. In the 5th grade, students begin to learn Word Processing. In K-3, students are first introduced to software packages, particularly in Math.

Junior High in M.C. covers 6th through 9th grades

Intermediate grades in some places include 7th and 8th.

Senior High Schools are 10th through 12th grades.

Each of these schools has 15 computers, 7 of which are placed on specially designed carriers for rotating and moving in the school. There are also media centers known, also, as MS-DOS labs. The machines employed by MC are largely Apples; they had some Commodores but they are being phased out. Simulation is employed in science courses, particularly where direct experiments would be dangerous and costly. Simulation permits

contd. on pg 33

IN SEARCH OF THE MOST AMAZING THING: A Book Review

by Linda Van Zee

(Tom Snyder and Jane Palmer, Addison-Wesley, \$10.95)

Tom Snyder is a former teacher-turned-computer-programmer and software developer who is very concerned about how computers are introduced and used in our school system. He was fortunate in having Jane Palmer to capture his thoughts and insights and express them in such a clear and readable form.

The author feels the expectations for what computers will do for education have been too high and unrealistic. There is a general lack of understanding on the part of teachers and school administrators concerning the effective use of computers and integration of them into the classroom while keeping educational priorities in clear focus. Together with his opinion that "at least 90 percent of the educational software on the market is not worth buying", he paints a grim picture of computers in education today. The one downfall of the book is the author's tendency to make negative generalizations about software, software manufacturers, and how parents, school administrators, and teachers are handling computer issues without giving adequate supporting evidence from surveys, careful observations, research, or other sources. This tends to relegate these statements to personal opinion rather than substantiated fact.

There is a good discussion of the strengths, weaknesses, and applications of the three main ways that computers are used in education. Computer-aided instruction, or CAI, is the use of drill and practice programs and tutorials. The computer as a tool includes the use of word processing, database management and spreadsheets. In the third group, the computer is used to model an interactive environment through simulations and games.

The author has an unqualified bias toward this last category: the computer as a modeling device. Anything that can be taught through CAI can be taught more effectively through games and simulations. Besides being a lot more fun, they involve the student in learning-intensive interactions with the computer and with other people instead of the flashcard type right or wrong answers of CAI. The computer can create intensely vivid environments that are an alternative to otherwise unattainable experiences. A well-designed game or simulation helps the learner to learn because he/she sees the consequences of his/her actions. Mistakes are moves less desirable than others. Unfortunately, games and simulations are the least used form of computer-based learning in the schools.

O.K. Tom, if you think educational software is so bad, why don't you do something about it? Well, he has. At Tom Snyder Productions, some of the goals in developing educational software are: to create environments that kids like to explore and that keep them involved in learning; to promote dialogue between students to computer and students to students; to have the skills flow naturally from the game or simulation and build upon each other; that learning how to play and improving game performance lead naturally to substantive learning.

I found his discussion of good educational software so

intriguing that I had to see for myself. I went down to B. Dalton Software where they cheerfully opened up *The Other Side* by Tom Snyder Productions, booted it up on a computer and left me alone.

I was taken back to my idealistic flower child days in California when we felt global conflicts should be resolved by cooperation. Two opposing nations are working toward a common goal of building a unifying bridge while maintaining their own economy. Team members must depend on each other for collecting different bits of information; making short and long-term goals; and defensive and offensive strategies. Neither side has sufficient resources to build the bridge by itself. The Computer Aided Defense system, representative of political and economic forces interested in protecting its own country and not in building the bridge, can escalate misunderstandings into real conflicts, upsetting the delicate balance of world power. The strategies of peace are complex.

This simulation is designed for the classroom. One computer is sufficient to involve the whole class at once, although two computers can be used. The lessons are many: negotiation, compromise, teamwork, communication, mapping, recork-keeping, note-taking, strategic decision making, and conflict resolution.

Seeing firsthand what Tom Snyder felt was good educational software gave credence to the points he was trying to make in the book. For anyone who works with kids and computers, this book has perceptive insights into the effective use of computers in education, and what to look for in quality educational software. ☺

Computers in Education contd. from pg 32

time-compression in the conduct of experiments and in obtaining results.

The Montgomery County Schools drew up a five year plan in 1983 at which time they selected the Apple. They were able to obtain the computers at a cost of \$895 each. At last count, they have 3800 Apples in the System. The system is self-servicing and self-supporting, even providing parts and maintenance.

A closing remark. Montgomery County is a wealthy county. It has resources for an extensive program devoted to the computer. It has proceeded with caution and not gone overboard. One county in Maryland has made a still greater commitment to computers than Montgomery: Calvert County. It would be interesting to see what they have done there. The bottom line is in evaluating the results obtained with computers. Like any investment program, there is a rate of return to be determined. The determination of rates of return in education is more complex and difficult than if one were investing in a manufacturing activity. Studies have sought to do just that in other places and contexts. While it has not yet been undertaken in Montgomery County, school officials are sensitive to the issue. ☺

PASCAL NEWS

by Robert C. Platt

The next Pascal Interest Group (PIG) meeting will be on Thursday, August 20 in the WAP Office at 8 p.m. Please bring your latest Pascal programming achievements (or insolvable bugs). We will be discussing Pascal on the IIgs.

PIG librarian, Mike Hartman, continues to welcome new contributions to the PIG library. For each disk of software which you donate, you will receive a disk from the WAP library (it need not be a PIG disk.) The contents of the PIG disks are described and indexed on pages 259-271 of *Perfect Pascal Programs*.

RAM Disk on the IIgs. My IIgs finally arrived, and I immediately began testing Apple Pascal 1.3 on it. (See the June WAP Journal p.25 for a review of Pecan's p-System on the IIgs.) One question is how to set up a RAM disk under Apple Pascal 1.3. Here are the steps:

Step 1: Create a RAM disk using your control panel. (I use 228K.) Be sure the minimum and maximum RAM disk sizes are the same.

Step 2: Boot Apple Pascal 1.3 and enter the FILER.

Step 3: List Volumes.

Step 4: Zero the RAM disk, to give it a p-System directory.

Step 5: Transfer all of your important system files onto the RAM disk. At least, SYSTEM.APPLE, SYSTEM.PASCAL, SYSTEM.MISCINFO, and SYSTEM.LIBRARY.

Step 6: (Easy way) Press open apple-control-escape to go to the control panel. Set the startup slot to RAM disk. Press return, escape, return, and return. When you get the traveling apple and error message, reboot with open apple-control-reset.

(PIG way) Execute John Stokes' New Root program. (WAP Disk PIG11; see p. 99 of *Perfect Pascal Programs*.) His program needs a minor modification to work with Version 1.3; change PROCEDURE WhichVersion to read:

```
IF Point.Value^[0] = 2 THEN Version :=1
ELSE Version :=2;
```

Also change two constants in the main program: SysUnit=5; and PrefixName = 'RAM5';.

Explanation of "Playback Program." Last month, we ran a listing of Steve Seaquest's Computer Assisted Instruction playback program. I apologize for the fact that the indentations and line breaks got messed up. (Do not use it as a model for proper indentation! A correct version will be on a future WAP disk.) Here is an explanation of how Steve's program works.

The key to the jump mechanism is two data structures. The *Lits* record indicates that for each possible branching pathway from each lesson frame, three data items are stored in the JUMP resource. (1) a four character type code which indicates whether the next frame is an alert dialog, a modal dialog, a link to another lessons, a request to return to the previous frame or a request to quit the lesson. (2) long integers pointing to the *resource id* or in the case of a link to another lesson, an integer into the second data structure, *TXrefRec*. This is a series of strings for all the names of files holding the other lessons. The long integer in each frame indicates which of the lesson names in the list should be used as a jump.

The program can be invoked in two different ways. First, if

the application file is double clicked from the finder, then the standard Open... dialog box is displayed by calling *SFGetFile* in procedure *StudentChoosesLesson*. Second, if the lesson file is double clicked or if the lesson is jumped into from an earlier lesson, the dialog box is bypassed.

For this demonstration, the dialog manager is allowed to process each lesson frame with calls to *ShowWindow*, *SetPort*, *ModalDialog*, and *DisposDialog*. These calls will be replaced in the final version by calls to routines to implement each frame with the SIG's custom routines.

The remainder of the program implements the jump mechanism and checks for errors. ☺

I Love Apple Music contd. from pg 29

72, 127, 80, 255, 86, 192, 1, 255

1040 REM MICHAEL ROW THE BOAT

1050 DATA 108, 64, 86, 64, 72, 64, 86, 64, 72,
64, 64, 64, 72, 127, 86, 64, 72, 64, 64, 255, 7
2, 127, 1, 255

1060 REM HELLO MY BABY

1070 DATA 54, 64, 48, 127, 54, 64, 48, 127, 54,
127, 64, 64, 60, 127, 64, 64, 60, 127, 64,
127, 72, 64, 64, 127, 72, 64, 64, 127, 72, 1
27, 96, 255, 1, 255

1080 REM GENTLE ON MY MIND

1090 DATA 72, 64, 72, 64, 72, 64, 72, 64, 86, 64,
72, 64, 72, 64, 72, 64, 86, 64, 72, 64, 72, 64,
72, 64, 64, 64, 72, 64, 86, 64, 96, 64, 108,
64, 96, 255, 1, 255

1100 REM FRENESI

1110 DATA 72, 64, 64, 32, 54, 32, 48, 32, 43, 32,
48, 32, 54, 32, 48, 64, 48, 64, 36, 127, 43,
64, 48, 32, 43, 32, 48, 32, 54, 32, 64, 32, 54,
32, 48, 64, 48, 64, 36, 127, 1, 255

1120 REM BILL BAILEY

1130 DATA 108, 64, 96, 64, 80, 64, 64, 64, 68, 64,
64, 64, 54, 64, 1, 64, 108, 64, 96, 54, 80, 64,
64, 255, 1, 255

1140 REM THE LOOK OF LOVE

1150 DATA 127, 64, 96, 192, 64, 64, 72, 192, 80,
64, 86, 192, 96, 64, 72, 192, 1, 255

1160 REM MISTY

1170 DATA 54, 32, 64, 32, 86, 192, 108, 32, 96,
32, 90, 32, 48, 32, 48, 32, 48, 32, 48, 32, 54,
32, 64, 32, 80, 32, 96, 64, 1, 255

1999 DATA 0, 0

—————(Listing 10)—————

Now play around with the above and also see if you can find some music and do some short programming for yourself. Save everything as I have described, for you may use it later when we meet again.

(Next: Array Music. Text File Music. More Advanced Sheet Music Reading. Alternate Sound Driver. Coming Up: Other Sounds. Commercial Programs. And More....) ☺

STOCK SIG NEWS

by Andrew D. Thompson

The June gathering of Stock SIG occurred on the 11th, at its standard time and place, the second Thursday of the month at the Apple Pi office.

1. STRATEGIES FOR PLAYING OPTIONS

Dan Wages presented his personal strategies for playing the options market using his own program with a 512 Mac, Lotus and Excel spreadsheet. Wages began by contextualizing how his method for calculating risk factors contrasted with traditional approaches. The traditional Black Shoals method projected the fair value price of an option and its implied volatility. Wages said his method has enjoyed success by working backwards, by assuming that the current market values for particular stock options were indeed the fair values and therefore he found it unnecessary to calculate or use historically derived volatility factors for those stock options.

Wages then demonstrated the results of three types of transactions which illustrated, contrary to popular belief, that buying a stock was actually more risky than writing a covered call or selling a naked put. Similarly, the Chicago Board of Exchange has published historical research which indicated the advantage of using options over simply buying stock. In particular, the CBOE indicated that going long on a stock in combination with a short straddle (selling a put and a call) provided better opportunity for success than did other traditional buy and hold or synthetic strategies.

2. MUTUAL FUND SUB-GROUP REPORT

Starting in July, this Sub-Group will meet on the fourth Tuesday of each month, Andrew Thompson announced. The place and time will be the Apple Pi Office at 8 p.m.

The May meeting began with a discussion of the bullish and bearish projections made by various national gurus. James O'Connor of Washington Econometrics was cited as having turned bearish on the stock market through the remainder of 1987. Joe Granville, similarly, was quoted as having characterized the current market as a broadening top of lower lows and higher highs in a see-saw motion. Newsletter writer Merriman was reported as telling subscribers to sell everything and move into cash. Robert Prechter, however, was described as continuing to be bullish. After this review, May participants then shared the results of their own methods for investing in mutual funds.

A. Harley Wilbur continued to refine his Fidelity mutual fund performance index which is geared to give short-term buy and sell trading signals. By using 4-day and 18-day non-exponential moving averages of the funds' prices, Wilbur calculates an oscillator of the averages whose downturn indicates a sell signal and whose upturn suggests it is time to buy. This method yielded a 10.7% gain between March 31 and May 22. Jerry Dotter said he uses this same method in combination with the War Machine software on an IBM, using hourly rather than daily closing Dow Jones data. This refinement provides "more of a feel for the market" because it includes consideration of whether the broader stock market, as measured by the Dow, is headed up or down. If the market is headed up, then Dotter uses the Wilbur data to

decide into which Fidelity Select fund to switch.

B. Wilbur then reviewed "A Fresh Look At Old Lore," an article by Edward P. Nicoski which appeared in the Journal for the American Association of Individual Investors, May, 1987. Nicoski's work used advance/decline data from 1969 through the present and identified eight unique cycles including the most favorable timing phases for investing in the stock market. He claimed the present time was one of the more favorable cycles for investing.

C. Troy Kline warned of a coming shock in the international financial markets. Some members speculated that Japan, with its frothy markets, would be the first locus of such troubles.

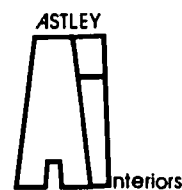
D. Ferd Hassler shared the results of his analysis of which mutual fund newsletter advisors seemed to have the best track record for subscriber investments. Using the Hulbert Financial Digest's report on the 1986 final results of 19 mutual fund newsletters, Hassler concluded the "Wellington's Worry-Free Investor" newsletter and the "No Load Fund X" newsletter offered subscribers the strongest one-year results. The former turned in a 26% gain, greater than the 19% gain enjoyed by the Standard and Poors 500 Index.

3. UPDATE ON CYCLE ANALYSIS

A. Wilbur updated June participants that as of early June, the Nicoski stock market's phase, as explained above, went into an even more favorable cycle for investing.

B. Bob Wood, former chair of the Stock SIG group, shared his research conclusions to the effect that the stock market seems to have hit an intermediate top. The 50 week and 200 week cycles have topped out and therefore, Wood said, a strong downward bias will begin to set in. He projected a top on June 17 in the 300 range for the S & P 500 Index and a decline to the 275 range by 35 days thereafter. Wood also said he thought that the bond market had bottomed out.

C. Members reported they believed the most recent projections by Peter Kasper and Steve Rinchart also indicated their cycles had topped out and that they expected a decline in the broader market indices. ☎



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GAMESIG NEWS

by Steven Payne

A 'hitch' in schedule kept Chairman Thomas Johnston otherwise engaged in important research, so Ron Wartow temporarily set aside his 'emeritus' crown, rose from his bed of pain, hobbled in on a ski-pole crutch, and led the July 2nd GameSIG gathering. The first item of business was to plan for August 22nd, when GameSIG will host the main WAP meeting, with software demos, the return of several gaming luminaries from last year, other important guests, and plenty of surprises. We were also reminded of the upcoming WAP nominations and elections in the months ahead.

In his regular "new and forthcoming software" report, Ron mentioned VIDEO TITLE SHOP and ALTERNATE REALITY - THE DUNGEON from Datasoft (the latter not requiring characters from ALTERNATE REALITY - THE CITY); LEGACY OF THE ANCIENTS (something like a follow-up to QUESTRON) from Electronic Arts; Firebird's KNIGHT ORC, a humorous graphics-adventure which casts the player as an oppressed orc; SSI's real-time flight simulator B-24, and SSI's exclusive rights to produce computer games based on TSR's ADVANCED DUNGEONS AND DRAGONS.

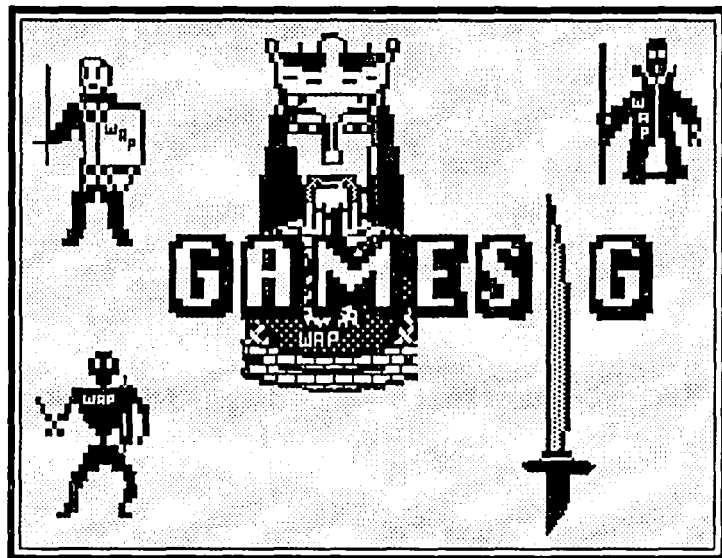
The following software was distributed for review:

James the Electronic Butler demo (Covox, Apple // series, requires X10 Powerhouse Computer Interface): allows your computer to control electronic devices in the home;

Earth Orbit Stations (Electronic Arts, Apple // series, \$34.95 list): strategic simulation, building and managing space stations, with seven scenarios;

President Elect: 1988 Edition (SSI, Apple //): election simulation;

The Spy's Adventures in Europe (Polarware, Apple //



series with 64K): travel adventure for up to 6 players, involving a "continental search for the fiendish Dr. X";

Battles in Normandy: June-July 1944 (SSG, Apple // series with 64K): wargame; and

Adventures in Mapping: an adventure mapping system developed by QUESTBUSTERS.

After GameSIG regular Jeff Steteklueh offered a demo of his new "Robot Tank" (an improved version of "Robot Wars"), Ron introduced three special guests from Australia, visiting the area to attend the ORIGINS Convention in Baltimore: SSG's Roger Keating, Ian Trout, and Denny Stevens. For the remainder of the meeting, they discussed some of their past releases (such as "Battlefront" and "Reach for the Stars"), plans for Macintosh products, and the new features they hope to include in their first fantasy/role-playing adventure. The next GameSIG meeting will be at 7:30 PM in the WAP Office on August 6th. Meanwhile, look for GameSIG reviews of Space Quest, Mac Pro Football, and Rebel Charge at Chickamauga elsewhere in this issue.

SPACE QUEST: A Review

by Marc S. Hoff

Space Quest (Macintosh and other computers) is Sierra On-Line's latest graphic adventure. This particular game is a bit different from other "graphic adventures" in that there is some arcade-style action involved; the player moves his character around the various rooms by moving the mouse and clicking on the desired destination.

The premise of the adventure is that an alien race known as the Sariens has captured your character's ship, and taken from it a device known as the Star Generator, capable of transforming a lifeless (or life-ful) planetoid into a brand new star (remember STAR TREK 2?). Naturally, you, as the Defender of all that is Right and Good, feel a moral obligation to track those nasty Sariens down and neutralize their ill-gotten weapon before they can terrorize the good people of the universe.

Your quest will take you to a nearby planet, where you must first survive in the open desert, then find your way to civilization,

both above and below the surface. The hybrid game structure provides for a more entertaining journey from place to place than an ordinary adventure, and things will happen to your character in real time, rather than only in print. There are several points in the game where you are called upon to perform *actions* in real time, in addition to walking, another feature not found in other games. Should you be successful on the planet, you will eventually find the alien spaceship, which you must infiltrate in order to deal with the Star Generator.

I did not find the plot of this adventure to be terribly innovative; several plot devices have been cribbed from familiar movies and television shows. I was also disappointed to find that it would be difficult-to-impossible to complete the game without saving it at several points; it seems to me that a game should reward the astute adventurer who can solve all the puzzles the first time through. Overall, though, I think this game would be

contd. on pg 38

MAC PRO FOOTBALL: A Review

by Peter Lindstrom

As a dedicated Macintosh user, I never thought I would ever come to the conclusion that there is such a thing as being *too* user-friendly. Unfortunately, an idiot-proof user interface mars what would be otherwise great game called **Mac Pro Football** (Avalon Hill, \$49.95 list, 512K required). What is frustrating about this is that the problem is so obvious you wonder why the programmers ever allowed it to happen in the first place.

To fully appreciate the annoyance caused by the interface, you need to know what the designers did right in this game. **Mac Pro Football** is a straightforward pro football simulation that relies on strategy, not arcade action. Though the program has a few limits, it is on the whole a remarkably sophisticated game that will either challenge a serious football fan or educate an occasional fan (like myself) on the finer points of the game. Certainly many football purists who own a Mac will probably hold out for other Mac Football game, **NFL Challenge**, but for the rest of us, that game not only has a steep price tag, it also requires you to memorize about 200 pages of playbook material before you get started. **Mac Pro Football** is an easier game to get started on, but "easy" doesn't mean "simple." You might get away with a few gonzo plays now and then—like the night GameSig Chairman Emeritus Ron Wartow executed a long bomb touchdown to the cheers of a roomful of GameSiggers—but not often. That's because the game plays very much like real football and real football requires some thought, careful planning and a coach who can call for the right play in a critical situation.

For that reason, no one should even attempt to play **Mac Pro Football** without spending some time with the "Coach's Playbook," a guide to all the football fundamentals you need to know to get started. This "Playbook" was especially important to someone like me, a guy who wonders whatever happened to the drop kick or the Statue of Liberty play (actually, I'm told they are alive and well in this thing called **Arena Football**). The "Playbook" also gives you a scouting report on each of the 38 Super Bowl teams included in the program. (Actually, there are only 17 different teams, because many Super Bowl teams went more than once.) Also included is a well written "Tech Manual" that takes you through a step-by-step instruction on how to play the game. Certainly the programmers deserve a lot of credit for this—too many gamers have to suffer through badly written and muddled manuals, and it's a pleasure to see someone who takes the time to do it right.

Once you have absorbed the material in the manual, you can boot up the game and let 'er rip. Well, maybe not let 'er rip, exactly. The programming language used in **Mac Pro Football** is very slow, so if you do have a 512K, you can expect to spend a chunk of time on each game. After playing several games on my old 512K, I got a new SE, which greatly improved the playing speed of the game, but for some reason the font used for the scoreboard doesn't work on that machine. This isn't such a serious problem unless you happen to be interested in things like current down, yards needed for a first down, how much time is left in the game and other information critical to your play

selection. I quickly learned that on the SE you need a scratch pad by your side to take down this information.

In any event, once you boot up, you will see three screens. The largest of these is the playing field, which shows you the execution of plays through a standard "X" and "O" diagram that resembles John Madden's **CBS Chalkboard®** without the "Hey wait a minute!" thrown in. Two smaller screens appear above each other on the right side of the screen. The upper screen is the scoreboard, described above, while the lower screen controls play selection. Before you get started, though, you will use this larger screen to select weather conditions and a few other options affecting the game. The game is fairly straightforward after that—you simply select the offense or defense you want to use, "execute" and watch what happens on your screen.

At least that's the theory. The problem with **Mac Pro Football** is that the user interface on the control screen requires you to select each play option *one at a time* with the mouse. There are no defaults, folks; you just have to click up to as many as nine screens—depending on the situation—to set up a play. Worse, there is no easy way to correct the inevitable mistake that will occur within this system. For example, the last two screens you get on every play are "No Time Out/Call Time Out" and "Execute/Audible." In one of my games, I accidentally clicked "Call Time Out" when I didn't need to. To correct this mistake, I had to click "Audible" on the next screen to give me the opportunity to correct the mistake. Even then, you still have to redo the other eight or so screens—that's right, you cannot select the one screen where you the made the mistake, you have to do it all over again.

This interface wears down even the most dedicated gamer's patience after a while—in fact, a few of my **Mac Pro Football** games took about as long as a real game of football. Once you start losing you patience, other things begin to happen. I noticed that even when I was battling against the computer in the third or fourth quarter of a close game, I began to click the mouse rapidly just to get through everything, and that led to a lot of mistakes, which led to more frustration, which led to a lot of saved games—games that I will probably never complete.

In fact, I gave up playing games for a bit and began using **Mac Pro Football's** truly outstanding feature—the **Game Situation Scenarios**. This feature was both instructive and enjoyable and gave me a real insight into this game's potential. Basically the scenarios are five great moments from classic Super Bowl Games of the past. You assume the responsibility of changing history by calling the shots in a very constrained period of time. (The longest scenario is 5 minutes, the shortest is 1 minute, 3 seconds.) These scenarios are great—they are almost like a kind of football chess, only chess pieces don't fumble in critical situations, like players can. Truth be told, the scenarios got me so fired up over the game, I sat back down and gave **Mac Pro Football** a second chance.

But again, that interface stopped me cold in the middle of games. I simply do not understand why the programmers wouldn't use some keyboard commands or, even better, use a
contd. on pg 38

REBEL CHARGE AT CHICKAMAUGA: A Review

by Ian Soboroff

Rebel Charge at Chickamauga (\$49.95 list) is a wargame by Strategic Simulations, Inc. (SSI) for the Apple II series with 64K. The suggested playing time is 10 to 15 hours.

Rebel Charge uses a slightly altered version of the "superb gaming system" (quoted from the box) used in **Gettysburg: The Turning Point**. Altered or not, in my opinion the system is marvelous in terms of being able to handle the game in a logical manner, but fails a bit in the playability category. Most commands are mnemonic (i.e., letters stand for command names), but in some cases the command keys can be confusing, e.g., having 'T' show the Terrain under a piece while 'F' lets you target your Fire (I found myself hitting 'T' to target fire a little too often). To move your pieces, you use a number corresponding to the direction, such as '1' to go up—so a numeric keypad doesn't help. Fortunately, there is a little 'compass' showing the directions and their corresponding numbers. The system isn't too bad, but the thought of playing a game with this system for 10 to 15 hours straight makes me shudder. Partly to save my sanity and health, partly because I didn't have the time, I played in 60 to 90

minute stretches.

The game has some good things to it, too. Before you start, you have a list of options that let you change difficulty levels and such, and also change the arrival of reinforcements separately for each side (built-in cheating!), although once you start, you cannot go back and change these options. You can play the game with symbols representing each piece-type, or you can use icons, which make it easier to discern pieces (your cavalry look like cavalry). You can save at the end of each turn, but not during a turn. You can also turn the sound on or off every two or three turns, but again not during a turn.

The game moves very slowly on my IIe, but probably would go faster with a speed card, or on the IIGS in the fast mode. By using a speed card, you could probably cut the playing time by one-third.

In conclusion I would like to say that, despite such obstacles as speed and control, this is a fun game, great for people who like wargames and have the patience to play through a full 8 to 15 hour game. I give it a seven out of 10. ☺

Space Quest contd. from pg 36

enjoyed by most players interested in the genre, provided they're not *too* experienced—I don't think Space Quest is aimed at the expert player. I give it 6 points out of 10. (P.S. Thanks to Sierra for the help extended to me by phone when I was stuck. Good service is always appreciated.) ☺

Mac Pro Football contd. from pg 36

larger screen area to select your plays all at once. That way, you could take a last look at the "big picture" to see if everything was just the way you need it. It would allow players both to enter all their options and to make any last minute changes without clicking through a morass of similarly blinding screens. There is more I could praise and a few more criticisms I could make about Mac Pro Football, but I see no point in making them until the interface is changed to help players, rather than discourage them.

Until then, if Avalon Hill releases a new disk of 30 or so Mac Pro Football scenarios, I will be one of the first on my block to buy one. ☺

WAP WORLD BUILDER CONTEST

by Robert C. Platt

WAP is sponsoring a contest to see who can design the best adventure game using Silicon Beach Software's World Builder construction set. The contest will be judged by the nationally-acclaimed author of Deep Angst, Ron Wartow, and his GameSIG associates. The winning entries will be distributed on WAP Library Disks.

The Rules. All entries must be received in the WAP Office no later than Wednesday, Sept. 16. Please include a note indicating the name, age and WAP number of the entrant. A separate award will be given for games submitted by WAP's younger members. You need not include your actual name in the software. The decision of the judges will be final, and winners will be announced later in the fall.

Hints. You can import graphics and sounds through the clipboard from other World Builder adventures. (See WAP Mac disks 95 and 96, and May WAP Journal p. 32.) Silicon Beach Software sells additional sounds library disks for \$15 each.

Graphics can also be imported from MacPaint or other drawing programs.

Although you cannot display the current contents of most numeric variables, the status command is an exception that displays the current contents of two system variables.

If your player character has "native weapons" indicated in his character data window (e.g. swings fist and kicks foot), a Weapons menu automatically appears. Although the Weapons menu cannot be altered during the game, the Command menu is under your control. The Command menu can be altered by executing the MENU{} command in any scene (See p. 56 of instructions.)

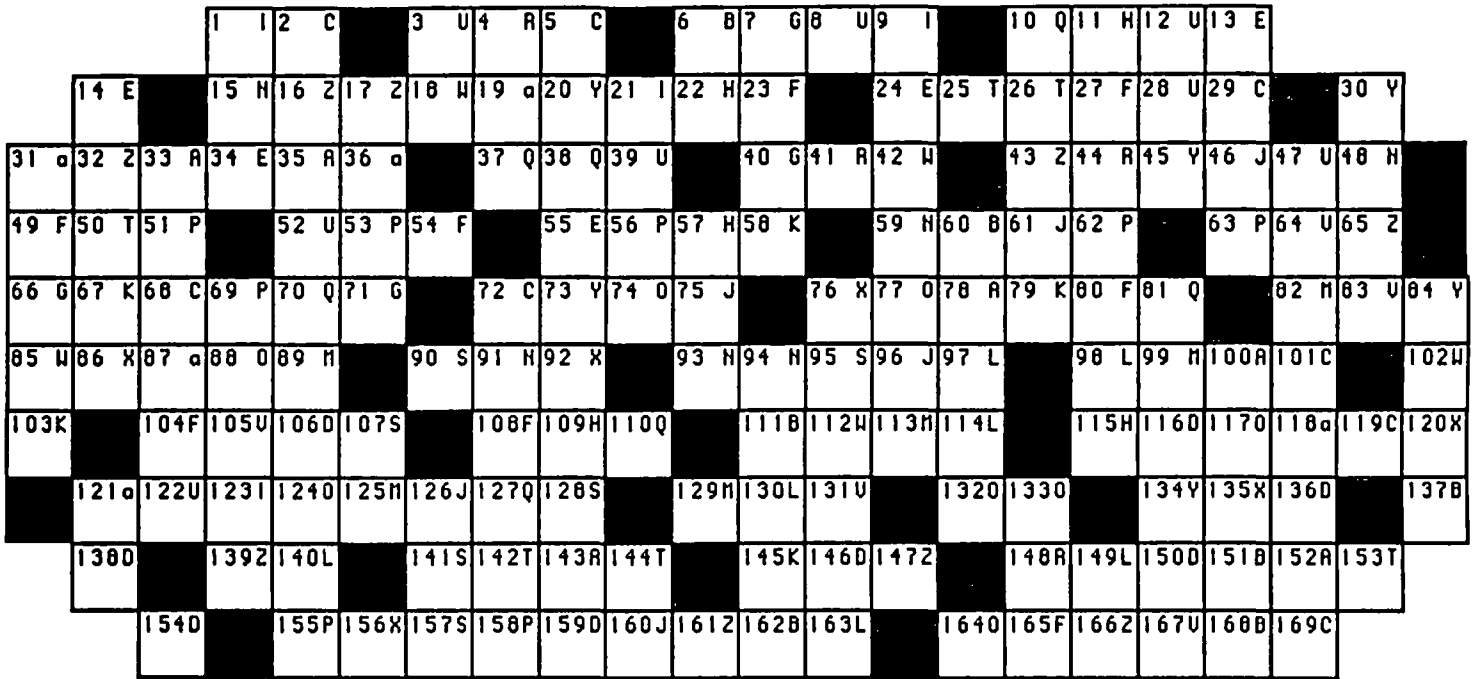
Try to use the Global Code Window to anticipate as many commands as possible. If a command does not match any scene code, World Builder responds with an unhelpful "huh?" By anticipating common adventure commands in the Global Code Window, your game will be easier to play.

The challenge of designing an adventure game should keep you more than busy for the rest of the summer. Good luck! ☺

WAPACROSTIC

by Dana J. Schwartz

Using the Definitions, fill in Words. Transfer each letter into the corresponding square of the grid. The resulting quotation will read across. The first letters of the Words column usually spell out the Author's name and the Title of the work, reading down.



Definitions

Words

- A. One-laught 143 33 78 152 35 100
- B. Like a Guy 111 137 60 6 168 151 162
- C. Significant 101 72 29 169 68 2 5 119
- D. Coast 138 154 159 150 146 106 136 116
- E. Botanical Partitions 13 14 24 55 34
- F. Universal Solvent 49 80 104 27 108 165 23 54
- G. Dress 66 7 40 71
- H. Period 57 115 109 22 11
- I. Disney Bird 123 1 9 21
- J. In a Smooth Manner 61 46 126 160 96 75
- K. Behavioral Nixia 58 103 79 145 67
- L. Warbled 114 140 163 130 98 149 97
- M. Lallating 82 125 89 99 113 129
- N. Roused 15 93 94 59 48 91

Definitions

Words

- O. Thin; Watery 77 88 164 133 74 117 124 132
- P. What Samantha Did 158 62 83 69 155 56 53 51
- Q. - Packard 38 70 110 127 81 37 10
- R. - Rubber 44 4 41 148
- S. Off Guard 95 157 107 90 141 126
- T. Paul Bunyan, e.g. 25 26 153 142 50 144
- U. Use a Second Time 8 12 122 3 47 52 39 28
- V. MacIntosh Stimulator 167 64 83 105 131
- W. Choose 112 85 18 42 102
- X. Can be Completed 92 156 135 86 76 120
- Y. Special - 84 134 45 73 30 20
- Z. Casual Combat 166 65 161 16 43 32 139 17 147
- a. Star-apple 19 87 118 31 56 121

ANSWERS TO May's WAP ACROSTIC

It is still your choice whether you will be concerned with compatibility or not. Apple will not put out a warrant for your arrest. However, if you are doing things that are specifically illegal, Apple will not worry about "breaking" your program.

Author: Apple (Computer, Inc.)
 Work: Compatibility Tech Note
 Source: Technical Note #17 - Compatibility: Why & How (Part 1)

- Words**
- A. Artwork
 - H. Mellow
 - O. Liability
 - U. Chip
 - B. Porcupine
 - I. Pugnacity
 - P. Impiously
 - V. Hollow
 - C. Palatably
 - J. Airfreight
 - Q. Torturous
 - W. Neglecter
 - D. Layaway
 - K. Towrope
 - R. Yodelling
 - X. Outwit
 - E. Eerie
 - L. Inward
 - S. Terror
 - Y. Throbs
 - F. Chevrotain
 - M. Boorishly
 - T. Earplug
 - Z. Enfranchise
 - G. Outflow
 - N. Intact

WAP 1987 OPERATING STATEMENT AND 1988 BUDGET

A Memorandum To The Membership:

On behalf of the Board of Directors we are pleased to present the combined Statement of Operating Results for Fiscal Year 1987 and Proposed Operating Budget for Fiscal Year 1988 (statement); as well as the Capital Expenditures Budget for Fiscal Year 1988.

The first column of the statement summarizes the financial results of operations of the Pi for our fiscal year ending May 31, 1987. Columns two and three present respectively, the budget for the year, and the difference between the actual results and the budget. The fourth column is the proposed operating budget for the year which will end next May 31. The Board of Directors approved this budget for submission to the membership at the July 25 meeting. We will be vacationing then, but Tom Warrick, who is vacationing now and does not know I am committing him, will present the budget to you for approval.

A few comments are in order. The first part of the statement reports gross margin. Gross margin is the difference between revenues such as sale of blank disks, and the direct costs of producing those revenues, for example cost of blank disks. The Gross margin part of the statement is condensed from three pages of detail. The detail is available for inspection at the office or you can obtain a copy by sending us a stamped self addressed envelope, care of the office.

Membership revenues include membership dues and TCS (Telecommunications System) charges; and sales of new member kits and the membership directory. The corresponding costs include the cost of Journals distributed to members, membership mailing costs, new member kits, TCS expenses, and the costs of printing the membership directory. Both the membership directory and the TCS are budgeted as break even items. Thus the \$4,178 in the proposed budget for capital expenditures (see below) is the budgeted difference between TCS revenues and TCS operating costs.

Publication sales include sales of the Journal through computer and book stores. Publication sales also include sales of advertising in the Journal, and sales of other publications.

Other Revenue and associated costs includes tutorial fees, postage and shipping for which we charge, and interest income (we have no interest expense).

With the exception of Public Domain software (P-D), the variances reported are either small or favorable. P-D sales were \$1,958 lower, and P-D costs \$7,645 higher than expected. We're investigating but at this time we haven't determined how much of the total \$9,603 unfavorable variance is due to incorrect estimates, price changes, unexpected costs, or cost increases.

The second part of the statement concerns cash expenses. Expenses have always been the focus of membership interest, and for this reason are presented in detail. Please note that the budgeted expense for guards for the general meeting are sharply reduced from last year's actual, while a new item, meeting place rent expense, has been added at \$2,890. Up to the present time the USUHS facility has been made available to us at no charge. USUHS, however, requires that we hire guards. The budget for these items reflects the possibility that we may not be able to

continue using the USUHS facility. If we are able to continue using the USUHS facility, then guard expense will be approximately \$2,200 for the year, while meeting place rent should disappear.

When cash expenses are subtracted from gross margin, the result is cash excess (or deficit) from operations. This is the amount left to spend for equipment or to bolster reserves after all cash expenses have been met. Note that the actual cash excess from operation was \$9,914 or \$8,768 more than expected. Almost all of this net favorable variance may be linked to a \$10,561 savings over budget in office expenses. Of those savings about \$4,000 are from double counting membership mailing items. These items are treated correctly in the budget for the new fiscal year.

The last line of the statement, excess (deficit) from operations is the result of subtracting the non-cash item, depreciation expense, from cash excess (deficit).

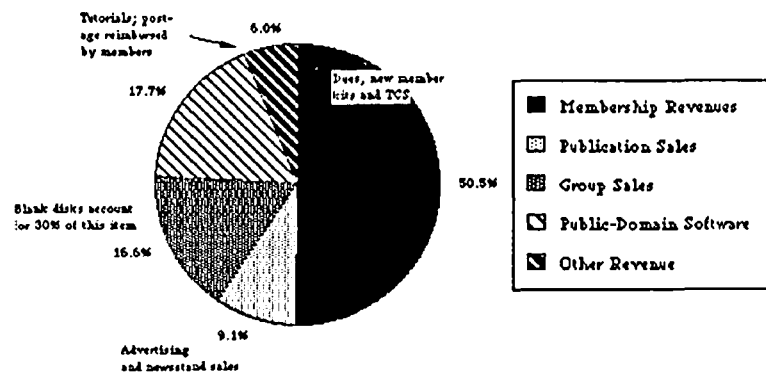
A proposed capital expenditure budget is also attached. Although it represents approximately half of the dollar amount for items that the Board originally considered, it makes minimal demands on our cash reserves.

The charts show the makeup revenues and expenditures (costs and expenses).

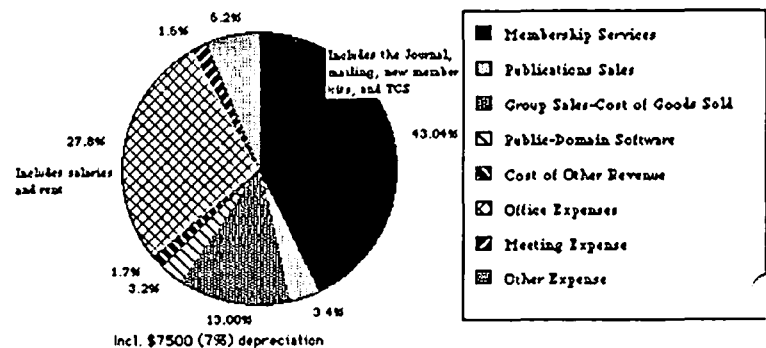
Please let us know if you have any questions.

Edward J Myerson Co-Treasurer
Priscilla N. Myerson Co-Treasurer

Proposed Sources of Revenues YE 5/31/88



Proposed Expenses YE 5/31/88



contd.

	Actuals Year-End 5/31/87	Budgeted Year-End 5/31/87	Variance For Year () = Unfav'ble	Budgeted Year-End 5/31/88
GROSS MARGIN				
Membership Revenues	150,291	148,663	1,628	153,426
Cost of Membership Revenues	118,194	122,778	4,584	129,486
Membership Margin	32,097	25,885	6,212	23,940
Publication Sales	28,197	25,291	2,906	27,685
Cost of Publication. Sales	11,355	8,281	(3,074)	10,360
Publication Margin	6,842	17,010	(168)	17,325
Group Sales	62,621	64,999	(2,378)	50,400
Cost of Group Sales	50,720	52,603	1,883	39,104
Group Sales Margin	11,901	12,396	(495)	11,296
Public-Domain Software	51,045	53,003	(1,958)	53,900
Cost of Public-Domain Software	19,200	11,555	(7,645)	9,508
Public-Domain Software Margin	31,845	41,448	(9,603)	44,392
Other Revenue	19,316	13,710	5,606	18,299
Cost of Other Revenue	4,468	3,360	(1,108)	5,056
Other Revenue Margin	14,848	10,350	4,498	13,243
Total Gross Margin	107,533	107,089	444	110,195
CASH EXPENSES				
Office Expenses				
Salaries-Managerial	36,722	37,440	718	37,892
Salaries-Other	12,306	15,145	2,839	15,751
Payroll Taxes & Benefits	3,894	5,784	1,890	5,115
Equipment Rental-Office	1,852	2,614	762	432
Postage-Office & Administrative	4,349	8,450	4,101	969
Rent	16,933	16,600	(333)	18,000
Supplies-Office	2,483	3,830	1,347	2,000
Telephone-Office	3,483	2,720	(763)	3,500
Total Office Expense	82,022	92,583	10,561	83,659
Meeting Expense				
Guard, General Meeting	2,172	2,100	(72)	490
Signer, General Meeting	56	100	44	100
Meet'g Place Rent (Contingent)				2,890
Other Meeting Expense	1,494	500	(994)	1,200
Total Meeting Expense	3,722	2,700	(1,022)	4,680
Other Expense				
Accounting and Legal	4,992	6,300	1,308	5,300
Insurance	1,574	1,000	(574)	1,750
Print Library	2,032		(2,032)	100
Printing-Other	959		(959)	1,000
Repair & Maintenance-Computer	15	750	735	500
Repair & Maintenance-Other	284	350	66	500
Taxes & Licenses	678	760	82	760
Sales Promotions	604	1,000	396	1,350
Miscellaneous	737	500	(237)	250
Total Other Expense	11,875	10,660	(1,215)	11,510
Total Cash Expenses	97,619	105,943	8,324	99,849
Cash Excess (Deficit) From Operations	9,914	1,146	8,768	10,346
NON-CASH EXPENSE				
Depreciation	(6,775)	(6,177)	(598)	(7,500)
Excess (Deficit) Fr. Operations	3,139	(5,031)	8,170	2,846

See Accompanying Text

PROPOSED CAPITAL EXPENDITURES

Telecommunication Expansion				4,178
Apple IIgs				1,500
Video "Projectors" or Other Display				4,000
Print Library Expansion				1,000
				10,678
Cash Available From Operations			10,346	
From Cash Reserves			332	
				10,678

TIPS & TECHNIQUES

by WAP's Membership

We sometimes overlook the large amount of expertise held by our members. As a way of tapping into this knowledge, 3x5 cards were distributed at a WAP meeting, and members contributed special tips on using their favorite software. Here is what resulted:

APPLE II TIPS

Application: AppleWriter

Use the glossary function for both automating control and avoiding the retyping of frequently used text. The glossary is available through the Control-G.

Application: AppleWorks

The spreadsheet has a default setting of automatic recalculate. To save time and frustration, set the mode to manual. Press open-apple-V, then select RECALCULATE, FREQUENCY and MANUAL.

Application: WordHandler

To convert a WordHandler file to Appleworks, use Copy II Plus. It works fine, except for a few meaningless characters scattered through the new text.

Application: SuperMacroworks (Beagle Bros.)

Excellent for making your own macros.

Application: ProDOS/ Bird's Better BYE or Proselect

Bird's Better BYE and Proselect display a menu of the next program to execute based upon the order that files are stored on a disk. I like to copy system files onto ProDOS disks in an order that is quick to access:

APPLEWORKS.SYSTEM

BASIC.SYSTEM

MS.SYSTEM

SE.OI

[other files not normally chosen.]

Application: Home Accountant

I have modified the HELLO program to skip the logo, main menu and go directly into the transaction module:

330 GOTO 1119

1119 X\$="1": GOTO 1160

MACINTOSH

Application: Finder

Holding down on the option key when clicking on the close box, closes all windows.

Application: MacWrite

Command-M will center a single line in a paragraph of non-centered lines, without needing to use a ruler for this format change.

Application: MacWrite

If you have tried to use a PICT format file from MacWrite in another application, the secret is to ignore the first 512 bytes.

Application: MacWrite

How to change the font of the date/page/time items in MacWrite 4.5's header or footer. Icons for these items can't be

selected, so they are usually printed with the default (Geneva) font. To switch these items to other fonts, open the header or footer window, hit a few carriage returns, place the icons, then select the spaces and icons, and then select fonts and attributes.

Application: MacPaint

To make a "3-D" tube on MacPaint, draw a small circle, lasso it, and drag it around while holding down the Option and Command keys. For best results, leave the circle white and leave the space between copies small.

Application: FullPaint

Shift-Command-Option-something turns any pixels within the marquee into the game of Life.

Application: Red Ryder 9.4

Change the "Delay between characters Transmitted" to 0.2 sec to allow pasting clipboard text to modem. This setting allows the receiving computer to accept the text.

Application: PageMaker

Option-Click toggles between actual and size to fit. The speed is in clicking on the area you want enlarged or reduced.

Application: OverVUE

It pays to learn and use the macro instructions. They're easy to master and save a lot of time. In larger databases especially, where a complex sort and equation routine would require constant attention for several minutes, you can start the macro and do something else while it runs.

Application: Word 1.0

Word refuses to quit to the Minifinder on an unenhanced 512K Mac. I needed to remove the Finder to make room on my disk, so I renamed the MiniFinder to "Finder." This can't be done directly on the desktop, so I used ResEdit to force the name change. The altered MiniFinder works fine, although it won't recognize other minifinders.

Application: Font/DA Mover

Use the Option key when opening Font/DA mover to open in DA Mode, with the ability to install DA's in an Application as well as in the System file.

Application: MacDraw

Learn to use the "Mode Box" in the lower left hand corner of the screen pallet. If you don't know about it, you can really get stuck. You click on the box just before selecting a line or fill attribute.

Application: MacDraw

The Duplicate command will space identical objects at an offset distance that you can specify. This is extremely handy for spacing the lines in a background grid, boxes in a block diagram, etc. Follow these steps: 1) select an object, 2) select duplicate from the Edit Menu (Command-D), 3) drag the new (identical) object to the offset you want from the original object, making sure that the new object stays selected, 4) Press Command-D as many times as you need objects.

Maintenance: Mouse

On the bottom of a mouse are two small plastic knobs, called

contd.

mouse feet. If they become worn, the mouse movements will become choppy. To fix this, glue BB's (airgun bullets) above the mouse feet. They work great and never get worn.

Application: Excel

To print out multiple spreadsheets (without waiting and initiating each one separately), select multiple sheets from the desktop and then select print from the menu. If you are printing "best" quality for many sheets, you can have dinner while you wait!

Application: Excel

Always put &L&T&C&F&R&D in your page header on page set-up. This gives you the date, title, and time on your spreadsheet printouts. ☺

HELP NEEDED WITH SOFTWARE

The following letter came from Mark Chmielewski, one of our Canadian members. Any assistance that any of you can offer would be appreciated.

"Attn: I-bought-some-bummer-software-the-companies-have-gone-belly-up-and-I-need-help department.

Our computer users group (known as CSA MUG - Canadian Standards Association Microcomputer Users Group—CSA is an organization similar to your U.S. Underwriters Lab.) purchased three software packages from a now non-existent company called Softlok. The concept of these software packages was that you can use the software, and if satisfied, upon purchase of the software, were given a 'Softlock' numerical code that would unlock the software and make it a truly interactive package.

Unfortunately, after following the instructions to the letter, the software packages bombed. The packages are:

- 1) Spellguard by Sorcim (a spell-checker);
s/n B5E11477C
- 2) Spellbinder by Lexisoft (a wordprocessing package);
s/n B4#11467G
- 3) Roots/M+ by ?? (a genealogy program)

I contacted Sorcim and was told that although they licensed the use of their software to Softlok, they wouldn't help me. Lexisoft no longer exists. Although we're not out a tremendous amount of money, we are a victim of "buyer beware." I would like to know if any fellow member out in Apple][+ land who may have a working copy of any of these software packages would consider selling me a working copy of any or all of the above-mentioned software packages.

Also, as we are a safety testing laboratory, we would be pleased to hear from any person or company involved in similar work who is using computers (especially Apple][+) and real world interface for test and measurement purposes. Please contact me—we would genuinely appreciate it." Mark P. Chmielewski, Special Acceptance/Inspection Services, Canadian Standards Association, 178 Rexdale Blvd., Rexdale, Ontario M3M-1P4, Canada. ☺

COUNTING THE BALLOTS: As Easy as A - B - //C

by Richard Rowell, Paul Schlosser, Kelly Smith, Dale Smith

We've always thought that the Apple //c is an excellent small office task-handler; its effectiveness was proved on Saturday June 20th, when three volunteers, Paul Schlosser, Kelly Smith and Dale Smith with Apple //c's under their arms, arrived to count ballots for the Washington Apple Pi annual elections.

Each keyboard had stickers placed over keys assigned to candidates. (There is no truth to the rumor that Lee Raesly was assigned "Q" for "quack"). Using a simple AppleWorks spreadsheet, shown below, ballot counters merely pressed a solid-Apple-<key> for each vote and had a running total of the count on-screen at all times. Solid-Apple-S (for slate) added one vote to the count for each of the five candidates who were running unopposed, when ballots were so marked.

	1 Tom Warrick.....	0	11 Lee Raesly.....	0
A B	2 _____	0	12 John Alden.....	0
p A	_____		13 Richard Rowell	0
p L	3 Raymond Hobbs...	0	14 Lynn R. Trusal...	0
l L	4 _____	0	15 Rich Mlodoch....	0
e O	_____		16 Jay Thal.....	0
WT	5 Robert Platt.....	0	17 Eric Rall.....	0
o	6 _____	0	18 Harvey Kaye.....	0
r C	_____		19 Lou Pastura.....	0
k O	7 Edward Myerson..	0	20 Priscilla Myerson	0
s U	8 _____	0	21 Bruce Field.....	0
N	_____		22 _____	0
T	9 Peter Combes.....	0	23 _____	0
E	10 _____	0	24 _____	0
R	_____		_____	

Pacific Technology Systems, Inc. of Rockville, MD designed and provided the spreadsheet, but the real contributor to this streamlined vote counting system was Super MacroWorks by the Beagle Bros. The macro function ability that Super MacroWorks adds to AppleWorks allowed this ballot counting utility to operate with single keypress simplicity, offering additional single key assignments for data entry, error correction, and printed report generation, all able to operate on a basic 128K no-frills Apple //c (or //e, IIgs, but alas not a /// ... sorry Dave Ottalini, no macro ability).

While the three volunteers deserve a hearty round of applause for undertaking the chore of confirming and counting 1,150 ballots, AppleWorks again demonstrated its day-to-day office usefulness.

The ballot counting utility could be easily adapted to handle most elections and is available for use by not-for-profit organizations. ☺

T ★ R ★ A ★ S ★ H

by Fred Seelig

[Closeup of Trapper John. Pan back. Voice off-camera...]

"Trapper John! My gracious, it's good to see you! Been, what, seven or eight years?"

"Father Mulcahy, what are you doing here?"

"Same thing you're doing, I have no doubt. It's the Lord's work, or the corporate equivalent, you might say."

"Ah, Father that Irish wit certainly hasn't changed these past years. What's Col. Potter trying to do over at the desk?"

"He's been muttering about that new computer for half an hour now. Colonel, I say, what is it that you are doing?"

"Hello, Padre. At the moment, I'm not doing much of anything. I feel like getting my old mule in here and kicking this here machine right up the side of its microchips. Horsefeathers. This thing won't even let me do anything. I have to wait a year for the operating system to appear on the shelves, so says that young salesman over there. Hell, I was fighting the Big One when he was still in diapers. Ah... I'll give this thing another minute, and if it doesn't work by then, I'll send it back to Requisitions and let them figure it out."

"Oh, my gracious! But that certainly is an impressive looking machine!"

"Padre, impressive looks belong on an automobile showroom floor. I just want something that works, for now."

[Cut to Major Burns, sneaking up behind Hot Lips Houlihan.]

"Frank, keep your hands to yourself! Honestly, every time you see me sitting behind this new computer you get so, so, beastly!"

"Oh, Margaret, I love it when you talk dirty. It's just the sight of you in front of that glowing full color bit mapped screen is just too much for an ordinary man to handle."

"Oh, grow up, Frank. These are corporate ads. I represent the corporate businesswoman. So knock off the sexual double entendres."

[Sighs] "I think that I liked the old Margaret better. If you're trying to impress Ms. Jane Doe Businesswoman, what's with the ultrablond hair and the ultratight skirt? I may not have much of a part in these commercials, but it's better than the cheesecake that you represent."

"Now, Frank, that was petty, cruel, and totally unwarranted. I'll see to it that you never ever get a speaking part in any of these commercials. Ever. Hah! And see if you ever so much as receive one red cent of residuals in the mail."

[She stomps off. He looks peeved, leaves in a snit.]

[Major Winchester looks over Radar O'Reilly's shoulders as he hunches over a computer.] "Radar, what in tarnation are you doing?"

"Well, sir, I'm just trying all of the sixteen quadrillion extended floating point mathematical operations that I can think of. Sir."

"Now why would you want to waste a perfectly good day at

the front for that? Don't you have mail to sort, or something?"

"Uh, no, Major. Didn't you hear? Intel, the company that makes the microprocessor chips that are used in these computers, found that some of the mathematics operations didn't work quite correctly. So if you do some astrophysical equations, or complex spreadsheets, your computer might give you the right answer, or it might give you the wrong answer, you just don't know. So I just, uh, wanted to see if I could get the computer to give me any wrong answers, sir."

"That's find, fine, Corporal, always good to see an enlisted man keeping himself occupied like that. Carry on, Corporal."

"Uh, oh, here comes Klinger. Looks like he's gone straight on us. Klinger, what's with the blue suit? No more Anne Klein dresses?"

"Gentlemen, I am a little sad to say that you will no more see Klinger in No-Nonsense Pantyhose. It's a thing of the past. The Company has ordered us to assume a wholesome look. Goodbye, hoop earrings. Goodbye, Peach blush. Goodbye, Maybelline Eye Liner. It's low-key ties and Brooks Brothers suits. The folks back in Toledo won't recognize me any more. Hello Madison Avenue, I welcome you with open arms! Veni, vidi, vici!"

"Gesundheit. Take two aspirin and call us in the morning. Better yet, don't call us at all."

[Camera tilts down to show Radar sitting at his computer, with Col. Potter looking over his shoulder. Others in soft blur in the background.]

"Colonel?"

"What is it, son?"

"I can't quite get this infernal mouse to work."

[Rest of cast, in unison] "Radar!!!"

"What's the matter?"

"Didn't they tell you, son? This isn't a mou..."

[Rest of cast, in unison] "Colonel!!!"

"...this is a 'pointing device.'"

"Oh." *[Long pause]* "You mean, we can't say the M word."

"Afraid not, son."

"Oh, gracious my, I should think not. Why, it would be as if God Himself would send down fire and brimstone on us Philistines, were we to say the M word. I'd best watch my language if I were you, Radar."

"Y- yes sir, Father! I didn't know that God, I mean, Armonk, cared so much about words."

"Oh, yes! Image is everything! Style, not substance! And here's another few to watch out for: Bit-mapped graphi..."

[Rest of cast, in unison] "Father Mulcahy!"

"... and desktop publish..."

Rest of cast, in unison] "Father Mulcahy!!!"

"... and that fruit that grows in orchards..."

[Rest of cast, in unison] "Father Mulcahy!!!"

☺

New
VERSION 1.1

THE NEW YORK TIMES:

"MicroPhone is a breakthrough in communications software..."

LOS ANGELES TIMES:

"The program is more sophisticated and easier to use than any...on either the PC or the Mac."

MACWORLD:

"...brings together the best traits of every Mac communications program."

INFOWORLD:

"MicroPhone is the easiest communications package we've seen."

With reviews like these who needs advertising?

They say the best advertising is word of mouth. So we're reprinting some of the multitude of words that have already been said about MicroPhone communications software for the Macintosh.

And what they're saying, universally, is that MicroPhone - created by Dennis Brothers - has far outdistanced all its predecessors. That for the novice, MicroPhone is the simplest telecom software ever devised. That for the expert, MicroPhone is the most powerful.

On-line for the lazy.

MicroPhone gives you the means to create infinitely elaborate macro (automated) routines with infinite simplicity. Its powerful script language is written in plain English, and it also features a recording mode that watches, saves, and repeats what you do. So no programming skills are required.

The upshot is that MicroPhone will save you time, hassle, and on-line fees by automating virtually every operation you now

have to key by hand. Log on procedures. File transfers. And, for a good example, E-mail retrieval routines.

At a single command from you, MicroPhone will dial your E-mail service, give your ID number and password. Navigate its way through the labyrinth to your mailbox. Check for mail. Log off if there is none. And if there is, MicroPhone will collect, print, and save all messages to your disk. Then, politely log off.

If you prefer, you can direct MicroPhone to initiate this sequence simply by inserting the disk. Or automatically, at any specified time, day, night. Or at regular intervals.

Anything else you need to do, from collecting stock quotes to sending and receiving files, is just as simple.

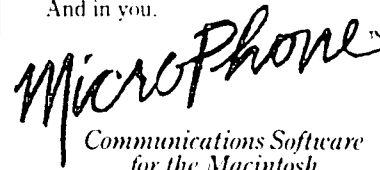
Try it out at home or office.

You can find out firsthand just what a remarkable program MicroPhone is. Without risking a cent. We give you a thirty-day moneyback guarantee, no questions asked. Which is virtually unprecedented in software.


Since MicroPhone is not copy protected, we obviously have vast confidence both in our program. And in you.

Let's get technical box.

- 50 to 57,600 Baud
- Supports XMODEM
- YMODEM
- ASCII
- 1K BLOCKS
- MACBINARY
- MACTERMINAL 1.1
- Emulates TTY
- VT52
- VT100
- Capture file On:OM
- Printer On:OM
- Auto log on scripts for information utilities provided
- Scripts Invoked by Button Menu Command Key
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Washington Apple Pi - August 1987 45

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LETTER TO THE EDITOR

from Applied Engineering

Dear Editor,

Compatibility of the Applied Engineering RamFactor board and the Apple][+ was the subject of a Letter to the Editor in the June 1987 issue of Washington Apple Pi. The letter was from Mr. D.R. Scorer who was dissatisfied with Applied Engineering and our customer support. The following will clarify the issues.

RamFactor is in fact compatible with the Apple products listed in our ads. It is also compatible with the Franklin Ace 1000 and Laser 128. All memory cards that install in slots 1-7 are actually high-speed, solid-state, RAM disks. RamFactor can be used as a single RAM disk or it can be partitioned as multiple RAM disks. With our battery backup, RamFactor can be used like a hard drive for instant-on capability. Our ads are clear on these points. What may not be clear is which version of AppleWorks can be modified for use with which computer.

RamFactor Expand, our original AppleWorks expander, worked only with version 1.3 of AppleWorks. (It works with earlier versions too, but you will not get an expanded desktop.) When AppleWorks 2.0 was announced, we created AW 2 Expander for use with Apple //e's and //c's. Because AppleWorks 2.0 was not intended to run on the Apple][+, we also restricted our expansion software to run only on 128K or larger Apple //e's, //c's and the IIGS. Subsequently, because of customer requests, we developed the AW 2 Expander to work on 64K Apple][+'s for AppleWorks versions 1.3 and 2.0 with a 256K or larger RamFactor. Note that, on the][+, spreadsheet exponential functions are not available unless an additional 16K card or the Applied Engineering TransWarp card is used. Our AW 2 Expander is now shipped with all of our expansion cards except RamFactor. The latest version 2.0.1 expands AppleWorks 1.3 and 2.0 on the Apple][+ and AppleWorks 2.0 on the //e, //c and the IIGS. AW 2 Expander for RamFactor, version 2.0.1, is now shipped with RamFactor boards and expands the same versions of AppleWorks. For users of earlier version of AppleWorks who own RamWorks and Z-Ram Ultra boards, Super Desktop Expander, version 5.3.1, is available (and is also currently shipped with these boards).

At the time our ads were written there was no AppleWorks 2.0. Although this product was announced earlier in the year, it was not released until September 1986 along with the announcement of the Apple IIGS. Our expander for AppleWorks 2.0 was released at the end of November 1986. The version for use with the Apple][+ was released April 21st 1987. Dealers are provided with updates but do not always implement them. We have several other products that use expansion software. It is important that the customer be aware of which products work with which revision levels. This is true with many other products now on the market as well as those from Applied Engineering. The problem is compounded each time a new release of a major product like AppleWorks occurs.

Experiences with busy customer service lines are frustrating. We have added more people to this area and have considerably improved response. Our lines are usually busiest on Monday and

Friday. Many people call these lines for non-technical reasons and this does not help the congestion. We are aware of the problems in our customer support area and are continuing to upgrade and improve our procedures. I'm sure that many readers (and our many thousands of customers) who have done business with Applied Engineering can verify that we do have one of the best technical support departments in the industry.

About answering letters, it is company policy to respond in a timely manner to all correspondence. At this point, there is no way to know what happened to the letter included in the June column. Had a follow-up letter been written (to a higher-level company official for instance), a reply would have been written and a lot of frustration would have been avoided. Our company policy demands a high level of customer support and timely response to customer inquiries. We do answer all mail received. But, because a reply can sometimes take 2-3 weeks, we prefer that customers telephone us when possible.

Applied Engineering makes every reasonable effort to satisfy its customers' reasonable demands and expectations. Sometimes it is difficult to describe in exact details with the limitations of a one-page ad how a particular product will work. Ads are meant to attract interest in our products and encourage further inquiry. To that end, we have a well-trained and able sales staff who can answer specific questions. Because Applied Engineering is devoted to good customer service, please be assured that that customer responses are considered when we develop promotional material. It is because ads are written in a general way, to cover a wide audience base, that we offer a 15-day, money-back guarantee on all hardware. As long as the customer returns the product to us within 15 days (fewer than 1% do) from the date it is received, we will issue a full refund for the price of the product. Regards.

Chuck Carpenter
Marketing Technical Support

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"SAY THANKS, AMERICA"

"Say Thanks, America" (STA) is a national school program to rebuild hope and values for young Americans. During the 1987-1988 school year, STA will launch its programs in the Washington area and render a "Capitol Salute of Thanks" to the people who build our hopes and ensure our liberties. As participants in the program, youth (Say Thanks Kids) under the direction of teachers will have the opportunity to "spotlight" people who serve as positive role models in the communities and render programs to "say special thanks" each month. Each year STA establishes an official theme and a national calendar of groups of people to whom they will "say thanks." The calendar of events for 1987-1991 will commemorate the Bicentennial of the U.S. Constitution. STA's program will focus on the people who build our hopes and ensure our liberties.

"Say Thanks, America" is recognized by the White House and supported by the Commission on the Bicentennial of the U.S. Constitution, National School Board Association, American Federation of Teachers and a host of others. STA is non-profit.

"Say Thanks, America" seeks "Mac Heroes" immediately to volunteer their services to establish and train staff for the following computer (Macintosh Plus) services and functions.

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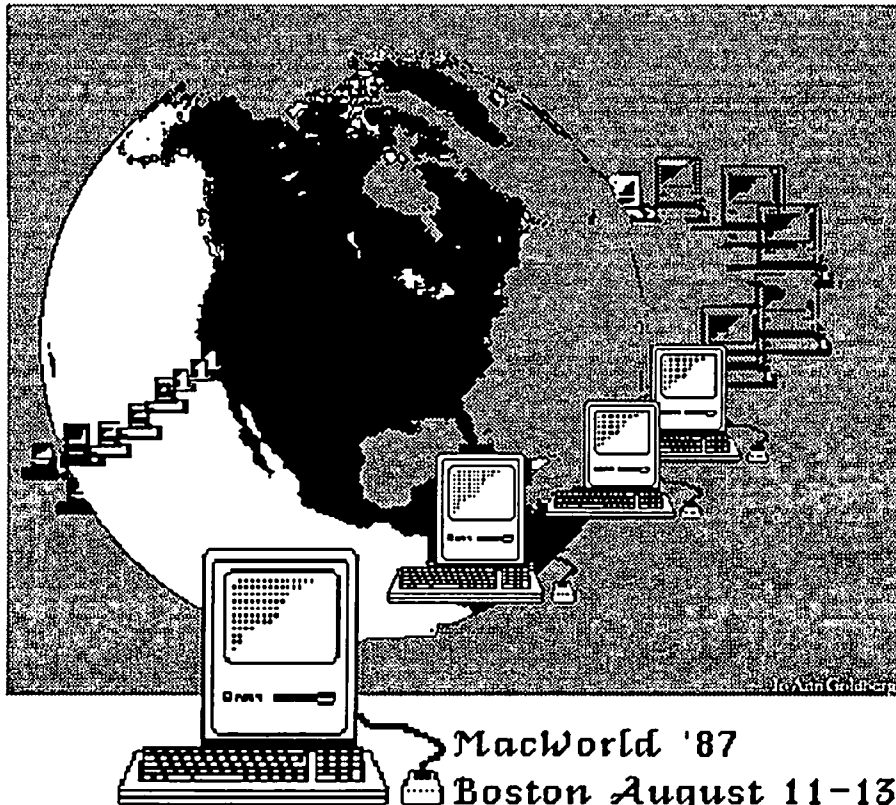
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Volunteers needed to help staff the Washington Apple Pi booth. Any time you can devote to this will be appreciated—1 hour to all day—whatever fits your schedule. Please call Bernie at the office.

MAC Q & A

by Jonathan E. Hardis

Leftovers: Rosemary Davis, who has a MacBottom 40 MB Hard Disk, wrote to say that technical support at MacBottom told her that the new system software (System 4.1, Finder 5.5) is not needed unless there is more than 32 MB of *data* on the hard disk. (In June, I repeated warnings from Apple that users with large capacity hard disks should back up their data, erase these disks, and change to System 4.1.) Independently of Ms. Davis' experiences, in the past month I also bought the same model of hard disk. When I called the company to ask if it would be okay to use the latest system software with their disk driver software, they told me that it would be a good idea.

As I understood the bug, the problem had to do with allocating space on the disk beyond the 32 MB point. It is possible, because of the way space is used up on the disk, that there can be less than 32 MB worth of data on the disk while some of that data lies beyond the 32 MB point. That is, there can be gaps, with some low-lying space on the disk unused. So extra caution is still advised. Yet anyone who takes the normal precaution of backing up their disks regularly needn't have sleepless nights over the question.

Q: We're thinking of upgrading our 128K Mac (which I suspect also has a voltage problem) as well as adding more memory to our MacPlus. Which packages would be best? We would like to do the work ourselves. We have no experience working with computers, but we're technically oriented.

A: I don't understand what you refer to as the "voltage problem", but I'll try to lay out today's options as I understand them.

Let's first dispose of the "problem" I think you are referring to. There has been a greater than desirable failure rate of the power supply (a.k.a. video, or analog) boards, especially in early production Macs before changes were made. If this board in your Mac fails, it costs roughly \$150 to fix it: \$120 to exchange your damaged board for a "service spare", usually a refurbished board from another Mac, and \$30 for labor. If you (1) are comfortable making your own diagnosis of trouble, (2) are willing to forgo the post-repair diagnostics available to the dealer and his 90 day warranty, and (3) know how to disconnect the high-voltage connection from the CRT without killing yourself with the stored charge, then you can do the work yourself and save the \$30. Replacing this board may be a hidden cost of upgrading an older Mac, as it *seems* to be the case that the trauma of upgrading pushes lots of them over the edge.

Anyone who uses their Mac in serious pursuits should seriously consider upgrading to at least the level of the Mac Plus. That is, they should have at least one 800K disk drive, a SCSI port, and the 128K ROMs with a megabyte of memory. I should point out to the newer members that I've traditionally shied away from pushing "the latest and greatest" just because it's there. The Mac Plus is now the "bottom of the line" product, and significant new products

and product improvements won't run on a 512K or 128K Mac. Also, the newest versions of System and Finder do not work (or in the case of the "512E" machine, are not recommended) on these models. This means that future releases won't work, either.

The simplest upgrade path to a Mac Plus is to buy one. The street price is now in the \$1500-1600 range, and you could first see what the old 128K Mac would fetch. I'd expect it to be worth a few hundred dollars. With this strategy, you get all the necessary hardware, a new power supply board, a new warranty, and even the larger keyboard. The only hidden cost is for two new cables (or adapters), which would cost about \$20 each. I think this deal costs about the same as upgrading part by part.

There are now three versions of the Mac ROMs: the original 64K ROM in the 128K and 512K models, the 128K ROM in the Mac Plus and 512E models, and the 256K ROM(s) that are used in the Mac SE and the Mac II. You can not buy the 256K ROM as an upgrade. The only way to upgrade from the 64K ROM to the 128K ROM is to buy it from an Apple dealer, due to copyright restrictions. But with a 128K ROM and System 4.1, the functional differences between the 128K and 256K ROMs will be loaded into main memory. This is what it will take to use current software. The memory cost is too great for 512K machines, necessitating at least 1 M these days.

Confused? Simply, the goal I recommend is to get the 128K ROMs and a megabyte of RAM. If you accept this goal, you must buy the ROM upgrade kit from a dealer. It costs about \$245, and includes both the 128K ROM and a new, 800K internal disk drive.

It is difficult to get to 1M of RAM into a 128K Mac. While there are many companies, some small, some large, and even some Apple dealers, who will do the surgery needed to convert a 128K Mac to a 512K Mac, it takes much more design skill to add 1MB of *totally usable* RAM to an older machine. Either also takes skill in the delicate operation of removing and resoldering ICs to a fragile circuit board. If you haven't done this sort of thing before, I don't recommend it as a beginner's project!

The only viable solution I can recommend (even though others at WAP are sure to disagree) is to bite the bullet and to get a new MacPlus logic board from an Apple dealer as well. This costs about \$500. There may well be good alternatives, but I don't know enough to point them out. (There is a side issue, addressed in the next question, as well.)

The next part of your question has to do with adding more memory to a Mac Plus, either the one bought that way or one that got that way through upgrades. Now, life is easier because memory is socketed. The two "gotchas" a do-it-yourselfer has to worry about are (1) adjusting the power supply voltage back to *exactly* 5 volts with an *accurate* voltmeter after the upgrade, and (2) breaking the tabs off the

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sockets that hold the memory chips in place. If you break them off, you are looking at a repair (usually a board swap) of the logic board.

There are two general classes of memory upgrade products. One is a straight replacement of the four memory "SIMMs" with the newer "1 MB SIMMs". This would be an upgrade of 1 MB to 4 MB, and these would fit in the case along with other, third-party products. The other class piggybacks the older "256 K SIMMs" together on a "daughter board". These are generally 1 MB to 2 MB upgrades. (Common wisdom is that there isn't enough reserve power to add 4 MB this way.) Some of these brands take up extra space in the case. On the other hand, using the older and more commonly available parts keeps the cost of this class of upgrade lower.

If you add or remove your own SIMMs on a Mac Plus, be aware that you may have to make other modifications as well. If any of the SIMMs are the 1 M variety, you have to remove the resistor labeled "R8" and "256K" on the motherboard. You can clip it off, if you don't mind making a permanent change, or you can unsolder one end, if you want to be able to put it back. If you convert to 2M by replacing the four rows of 256K SIMMs with two rows of 1M SIMMs, then you have to add a resistor to the (now empty) space labeled "R9". Moving R8 to R9 will do.

I have no experience with, and can not recommend by name, any particular brand. Some companies throw in extras, such as the tools needed to open the case or a fan. But after looking to see which brands the reputable stores and mail order houses sell, I don't think you can go too far wrong with any of them. (The mail order houses also carry the tools separately.)

Q: Do the third-party SCSI port add-on products (for models prior to the Mac Plus) act the same as Apple's?

A: Not always. Charlie McConathy at CMS, a hard disk company, reports that some of the third-party products don't always work with fast drives, certain terminations, and, in particular, some of his products. Also a new problem has arisen with the introduction of System 4.1 that only affects owners of the third-party SCSI port add-ons. The new Hierarchical Menus don't work.

The same chip on the Mac board that keeps the time also provides a small amount of memory that the clock battery preserves, even when the Mac is unplugged. This is called "Parameter RAM". It is used to store the preferences you set using the Chooser and Control Panel desk accessories. (It is also the thing that gets erased when you remove the battery for an hour, a famous cure-all.)

Well, it seems that on the Mac Plus and later models, those that Apple sells with the SCSI port, there is more parameter RAM than on the older models. The extra space is used to store, among other things, information about the delays needed for implementing the hierarchical menus. The cue the software uses to see whether that extra RAM is there is to see if the SCSI port is there. If you've added a third-party SCSI port, the inference is wrong and the menus don't work right.

While I expect Apple to come up with a fix in a later

release of System, in the meantime I can provide a small INIT (file) that will take care of the problem. (Thanks to Marcel Rivard and Steve Brecher for this information.)

Q: What's the story about adding more memory to the Mac II?

A: The Mac II has eight sockets for SIMMs. Each group of four needs to have the same type of SIMM in it, that is, either 256 KB or 1 MB, contributing 1 M or 4 M to the memory capacity of the machine, respectively. The Mac II comes with 4 256K SIMMs. Other possible configurations give 2 M, 4 M, 5 M, and 8 M, using the various combinations. If you want to install an additional 4 M of memory (making a total of 5 M), you first have to move the smaller SIMMs to the back sockets. Note that the Mac II requires faster memory than the other Macs do. The chips should be marked "-12", meaning 120 nanosecond (ns), instead of "-15" (150 ns), which are okay for the Mac Plus and the Mac SE. Mac II 256K SIMMs are NEC part MC-41256A8B-12.

Q: In John Boren's article, "Faster Printing with the ImageWriter II" in the May Journal, he related the method for bidirectional printing using the "Faster" setting. However, the bidirectional printing was squiggly. Can this be prevented?

A: No. That's why the method for turning bidirectional printing on and off is so obscure! It is not a recognized or supported feature. By the way, the alternate way to turn off the feature is to hold down Caps Lock, Shift, Option, and Command while pushing the Okay button.

Q: Help! I'm trying to add an Apple 800K floppy disk drive mechanism to my Mac II, but it doesn't work.

A: David Ramsey, who works at Apple looked into the matter. He reports that there are two versions of the 800 K drive mechanisms. The newer one, which is being installed on the SEs and the IIs, will work on anything. The older kind only works on the older machine models. Likewise, the old 400K disk drives won't work on the Mac II. (Note that we are discussing opening the case and mounting the disk drives internally. The Mac II has no connector for an external floppy.)

The easiest way to tell the new kind from the old kind is to try it. If you have an old one, it will fail to recognize or format Mac disks. However, David is *told* they can be made to work by cutting wires 9 and 20 on the connecting cable. (The wire with the stripe is number 1.) If you try this hearsay advise, I'm not responsible for what happens.

Q: Help! I'm trying to use a Seagate 251N hard disk on a Mac II, but it isn't being recognized.

A: Charles McConathy (at CMS) recommends cutting line 40 (the reset signal) on the 50 pin ribbon cable. (Apple's hard disks have special firmware.) By the way, the CMS line of hard disks for the Mac II and the Mac SE are being greeted with good reviews. (As always, I personally prefer to wait a year before deciding which brands of hard disks have lasting value.)

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Q: Are there third-party sources for the video memory Apple sells as the "8-bit" upgrade for their Mac II video card?

A: In last month's *Journal*, Jim Lanford recommended New Image Technology. Other sources include Orion Avionics, (213) 676-0880 (\$68 for the 8 chips), and IC Express, (800) 892-8889 (\$72).

Q: I'm trying to print a spreadsheet in Excel, using horizontal (landscape) orientation on legal size paper in the LaserWriter. The first two columns of the spreadsheet are chopped off. Adjusting the margins simply chopped off the other end, yet there is plenty of blank paper left.

A: Rich Goldberg suggests choosing "Page Setup", then push the Options button. Check the lowest box.

Q: I'm not happy with my Mac SE. The fan is much too loud, and the picture is distorted at the sides.

A: The word on the street is that Apple is aware of these types of complaints, and they are quietly working on some sort of "fixes" to keep everyone happy. Stay tuned.

Q: Where can I get the program "Passport", which lets a Mac read and write 3 1/2" Apple II disks?

A: The program is now called "Apple File Exchange", and it is available for \$13 from the Apple Programmers and Developers Association (206-251-6548). Membership is \$20, and I highly recommend joining for anyone interested in programming the Macintosh.

Q: Why does my dealer claim that the latest version of System is marked 2.0?

A: The system software that Apple provides is packaged as a set of disks, and each disk has a collective name. The disk marked "System Tools 2.0" is the latest version of that disk. One of the files on it is System 4.1, the latest version of that file. (The version numbers for the files can be found in the "Information" boxes that you can read while using Finder.)

By the way, System 4.1 wasn't tested by the developer community before Apple released it. (They were under pressure to put out a "Universal System File" for delivery with the Mac II.) As a result, there are a number of compatibility problems that will need to be fixed in a future release.

Q: Help! FKey Manager doesn't work on my Mac II.

A: A fix is due shortly. In the meanwhile, it seems that this package has interactions with other products, which makes it appear that *they* fail on the II. Remove PopKeys from the System file. At least part of the problem is that there is a bug in System 4.1. \$A0A is uninitialized. Stuffing \$14 in it manually (using the debugger, SM A0A 14) helps.

Q: I modified the Monaco 9 font so I could tell the "0" from the "O" more easily. Why doesn't this font work on the SE or the Mac II?

A: Monaco 9 is in the ROM of the newer machines, and so what you installed won't be used unless you go through a lot of extra trouble. (See the Resource Manager chapter in Inside

Macintosh IV.) A simpler solution is to rename and renumber the modified font. I also hear of a font named Whitestone, which is itself an already modified Monaco, though I don't know where to find it.

Q: Help! The "screen saver" program AutoBlack doesn't work on a Mac II.

A: Right. The Mac II doesn't have the alternate screen memory that the original Macs do, and that AutoBlack needs. However, another good screen saver called Pyro! is about to be released. It displays random fireworks at idle, which are in color on the Mac II. By the way, many games won't work on the Mac II for the same reason.

Q: Help! I tried using Red Ryder 9.4 on a Mac II, and now I can't boot from the internal hard disk. It must have mangled the Parameter RAM.

A: I can't verify your conclusion, but to reset Parameter RAM, hold down Option, Command, and Shift while invoking the Control Panel.

Q: Help! How do I install Tops on a disk with System 4.1?

A: The Tops Installer program copies obsolete resources into the System file. Don't use it! Instead, copy over the Tops files by dragging them, in the Finder, and use the latest Font/DA Mover to copy over the Tops DA.

Q: Is the color monitor that Apple is selling (soon) for the Mac II the same as the Sony MultiScan?

A: No. Despite rumors to the contrary, the Apple color monitor is unlike any color monitor already on the market. Those who have seen it continue to say it looks better. To quote Toby Farrand of Apple's Advanced Technology Group, "Aside from the actual tube, the Apple monitor is completely different [from the Sony MultiScan]. Apple's monitor has a higher video amplifier bandwidth, a tighter convergence spec, a tighter focus spec, a tighter spot size spec, a tighter raster positioning spec and a tighter tube defect spec. Apple's monitor also passes FCC class B (I think Sony's Multi-Scan is a class A device, appropriate only for business use.)"

By the way, SuperMac, whose large screen color monitor was shown at a recent WAP meeting, is getting a better type of display (made by Sony) as well. Finally, PCPC, the MacBottom people, are entering the color monitor market with their own product which is also supposed to look quite good. The problem with it, at least for now, is that only 8-bit (256 color) mode is supported.

Q: Help! How can I get SuperPaint to work on a Mac II?

A: The temporary cure for SuperPaint, as well as some of the other painting programs and games, is to use the 1-bit (2 color) display mode. You can choose it using the Control Panel when the Apple or SuperMac video board is installed.

By the way, you can assign colors to the objects in the draw layer. You can cut and paste from the paint layer to the draw layer in order to color sections of the picture. Charlie Jackson promises a color display in the next release (not soon). But for the time being, other programs that can display

contd.

PICTs (saved by SuperPaint) in color will have to do.

Q: Help! Some objects in my SuperPaint document don't print.

A: Charlie Jackson reports that there is such a bug, which has been very elusive. Try shuffling the document around a bit by using Send to Back and Bring to Front. Also, if you have a document on disk that has a reproducible problem, they'd very much like to see it.

In other SuperPaint notes, Silicon Beach Software took great pains to work around a problem in the earlier LaserWriter drivers that prevented the Paint and Draw layers from lining up correctly. However, now that Apple has fixed the latest LaserWriter driver so it does its job correctly, SuperPaint is overcorrecting. Call technical support for information on a patch.

Q: What causes Chooser to take a minute or two to come up?

A: Reportedly, noise or bad connections on the AppleTalk network can cause this symptom. Turn off AppleTalk (in the Control Panel) to see if that fixes it. (If so, it's time to start tinkering with the network connections.)

A related problem is when, on an AppleTalk network, all but one Mac can print to the LaserWriter. You know it isn't the Mac, since when you use a known good Mac at that location the problem remains. Your dealer can get the long instructions off of AppleLink to help in diagnosing the problem. But in a nutshell, Apple recommends checking any long, custom-wired cables for bad connections, checking the termination at the ends of the network, and swapping cables and connector boxes around.

Q: Can the Mac II video card be used on standard (NTSC) television equipment, such as video recorders?

A: Yes. Sort of. Conventional TV equipment doesn't have the resolution needed to display the whole picture from a Mac II. Yet, the designers of the video card designed it so it could produce an NTSC standard signal in some fashion. The trouble is, the Mac II software doesn't know about this, and so there is no easy way to use this feature.

Mark Barnwell, at Apple, has a short program that can kick the card into NTSC mode. But since the feature is currently unsupported, things will change when either the card design or the video software is next revised. If you have a good reason for wanting to see this made a supported feature, Mark would like to hear from you. Write him at Apple Computer, Developer Technical Support, 20525 Mariani Ave., MS-27T, Cupertino, CA 95014. Or, call him at (408) 973-6757.

Q: Help! MacTerminal 2.0 doesn't work with System 4.1.

A: Apple is rereleasing all of their products to update them for System 4.1 and the new Mac models. By the time you read this, your dealer should have MacTerminal 2.2, along with new versions of MacProject and MacDraw. Bring in your original master disk(s) for a free update. Updates for MacWrite and MacPaint are also in the works, but they may arrive later. In the meantime, to patch MacTerminal 2.0 to

work with System 4.1, use FEdit (or a similar program) to change the third occurrence of 02B6 to 0A78. (This won't fix all the troubles, such as not acting as you would expect with the new ADB keyboards.)

Quickies: Copy II Mac is up to version 6.5, which is needed for the Mac II ... If you have the "Big Picture" large screen product, be sure to get version 1.4 of the Big Picture INIT. The older versions don't work on a Mac SE. Also, ask about their "Double Feature" software, that let's you use the regular screen along with the big one ... On a Mac II, if there is an PICT 0 resource in the StartupScreen file, it is used to draw the startup screen. (This is a clue on how to make color startup screens.) If there is no PICT 0, the image in the data fork is displayed, centered, as it always has been. Note that an easy way to create a PICT resource is to paste into the Scrapbook. You should make sure that this resource is purgeable ... Macintalk and the programs that use it, such as the Talking Moose DA, don't work on the Mac II ... After a change of publisher, Thunder! version 1.1 is now shipping. Call Electronic Arts at 415-578-0316 for update information. It works with Works ... To use MS Works on a Mac II, use FEdit, find 3039, and change it to 203C... Ready Set Go version 4.0 is in the wind. People who bought after June 1 will get the upgrade for free. Others will have to pay about \$50. It is said to have all the features of XPress that were missing in 3.0. Expect an announcement by mid-August ... Corvus laid off their staff that were working on Apple compatible products ... If you turn off the 68020 instruction cache on the Mac II, AppleTalk (which depends critically on the instruction timings) will stop working ... Registered World Builder owners should be receiving version 1.1 in the mail, for free ... AppleShare owners should get the version 1.1 update from their dealers. By the way, InterMail or InBox can run on the same server Mac as AppleShare ... If the Apple hard disk on your Mac won't boot, run Apple's HD Setup from a floppy and select Update. This will reinstall the SCSI drivers which could have been wiped out. Reinstalling the drivers will not trash any data that is still present on the disk. Other brands of disks would have a similar procedure ... Jasmine and MacBottom hard disks don't work on the Mac II yet ... When you set the time in the Control Panel of System 4.1, you have to change something else, too, in order for the change to be made permanent ... If SuperSpool or SuperLaserSpool doesn't work, try leaving their files on the desktop (as opposed to in a disk folder). ☺



MacNovice Column

by Ralph J. Begleiter

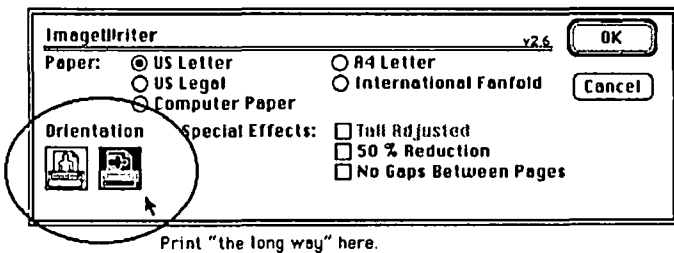
Vive la Différence!

Recently a friend who has used an IBM compatible computer for years told me he was planning to "figure out" how to print a multiple-page document on his machine. Until then, he'd only printed single page letters, artwork and spreadsheets. He said he'd have to review the instruction manual for the correct codes to enter so his computer would continue printing after page one, and to obtain multiple copies of a single page. It would take him awhile to check that all out, and then he'd demonstrate how well his new printer worked.

On another occasion, the same friend described (in a "eureka!" tone of voice) that he'd just bought a computer program that would enable him to print very wide spreadsheets on his 8-1/2" printer by turning the spreadsheet ninety degrees to print the "long way." He said this with great admiration for the software he'd just purchased.

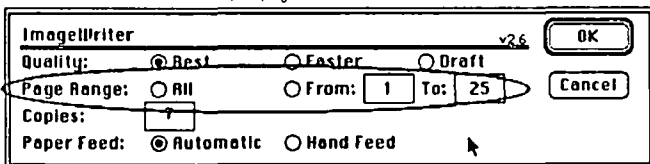
To my friend, these two tasks—printing "the long way" and printing multiple pages—are major accomplishments. They are achieved only by referring to the instruction manuals, buying additional software, and committing to memory some arcane codes which must be entered through the keyboard to tell his computer what to do.

As a MacNovice, you've never faced that problem. From the day you turned on your Mac, you were able, probably without even reading the instruction manual at all, to print a MacWrite document in multiple pages or along the so-called "landscape" dimension of the page, "the long way." All you did was choose PRINT from the FILE menu, and click a few choices in a simple dialog box:



Print "the long way" here.

Print multiple pages here.



Without even realizing it, MacNovices benefit daily from the most basic of Macintosh concepts: a simple, intuitive, consistent "user interface." MacNovices who've never used a computer before probably don't even appreciate the small miracles they accomplish every day because of this straightforward relationship between the machine (and its software) and the user.

Incidentally, my friend with the IBM-compatible also uses a

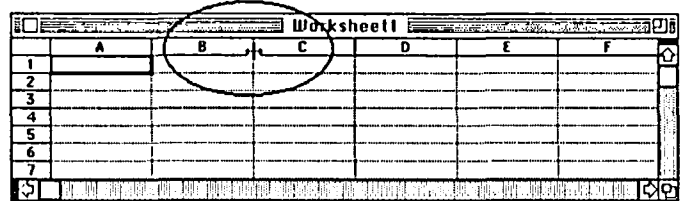
Macintosh—at work. So he *knows* how simple it would be to accomplish the same printing chores if he were at the Mac instead. Users who *can* make the comparison are confronted regularly with the absurdity of the hard-to-master user interface which predates the Mac.

Other examples of the comparison abound. But you've probably never appreciated them if you're a MacNovice, spoiled by the simplicity built into the software.

Simplicity

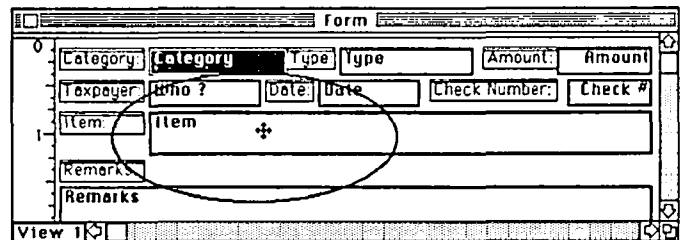
On virtually every major spreadsheet program, you don't have to enter a series of number-and-letter commands to change the width of a column. You simply point to the dividing line between columns, click, and drag the width of the column to where you want it. You can change it simply at any time to accommodate larger-than-expected numbers or text.

Point and drag here to change column sizes intuitively.



When you're working with a database on the Mac, you don't have to define in advance the length of the individual "fields" into which you'll be entering data. You don't have to know in advance how many different chunks of information you plan to enter. Using most Mac database software, you can make some educated guesses at the start, but you know you'll be able to change your choices at any time later on, without losing the data you may have already entered. You can even add "fields" without jeopardizing information you've already entered.

Often, on the Mac, you can make these changes without remembering *how*, simply by pointing and clicking and dragging the mouse. No need to recall confusing and complex number and letter codes.



Change the size, length, font, style or other attributes of any "field" intuitively by pointing, clicking and making menu choices.

Compatibility

Macintosh users, even MacNovices, have become used to the idea that it's possible to CUT and PASTE words, pictures, charts,

contd.

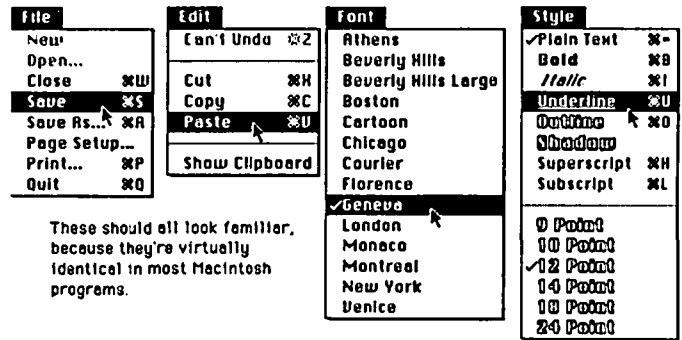
graphs, even (in spreadsheets) complex formulas. Using the EDIT menus is probably second nature to most Mac users. But in the non-Mac computer world, it's a chore to SELECT information for cutting and pasting. Codes must be "embedded" in the text of a document, for instance, telling the computer where a selection begins and ends. Cursors must be scrolled around the document to relocate the insertion point. These are tasks immensely simplified using the mouse. (Even one devoted cursor-user I know, who cursed the mouse when he started using a Mac-like Atari, has since come around to admitting that editing with the mouse is faster, simpler, more intuitive than the old method.)

But the beauty of the EDIT menu is not limited to editing within one software program. The beauty is magnified a thousand times when you realize that the EDIT menu is available, in identical form and function, in virtually every Macintosh program published. *This is the miracle of the Mac's user interface. It's possible to cut and paste among different programs, using exactly the same commands, exactly the same mouse and menu movements.*

And it's not just the EDIT menu. Notice the FILE and APPLE menus. Even FONT and STYLE menus almost always work the same way. No matter whether you're word-processing, drawing, painting or creating a spreadsheet or database.

Consistency

One of the banes of the IBM-and-compatible world is that programs don't share the same commands, the same functions.



These should all look familiar, because they're virtually identical in most Macintosh programs.

A command which performs a CUT in one program might well do something completely different in another. The PRINT command in a word processor may well perform an entirely different function in a spreadsheet program.

That was a difficulty which Macintosh creators worked hard to overcome in the first place. Apple is trying hard to maintain consistency of the user interface now. Publishers of programs are encouraged to adhere to carefully-thought out guidelines for the user interface, so that Mac users, even (especially) novices, can feel familiar in any program, even if they've just opened it for the first time.

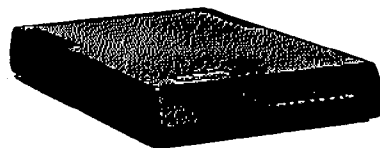
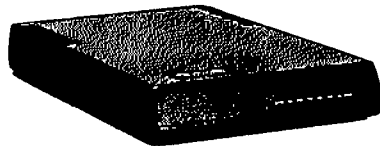
That's why the Mac looks and feels different from other IBM-compatible machines. Enjoy the feeling. Enjoy the familiarity. But don't take it for granted.

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MACINTOSH BITS AND BYTES

by Lynn R. Trusal



IBM and Hewlett Packard Endorse PostScript

IBM has endorsed Adobe Systems' PostScript language which will make it the de facto standard for the desk-top publishing and laser printer industry. This is a significant development in that IBM has decided not to develop and market its own language. It has not ruled out the adoption of other page-descriptive languages. In addition, Hewlett Packard laser printers are used by MS-DOS owners more than any other make, yet HP has already made the decision to use DDL by Imagen. DDL is currently not on the market (estimated release date of July 87). This decision will result in a greater number of MS-DOS programs being provided with PostScript drivers and perhaps more Apple LaserWriters being sold to offices with MS-DOS computers. Many IBM users already prefer the LaserWriter but the number will increase as more and more means are marketed to permit MS-DOS computers to print to the LaserWriter. A recent editorial in the March 24th issue of *PC Week* stated that IBM needed Adobe and Microsoft Windows more than they needed it. If IBM is to seriously challenge Apple in the desk-top publishing arena, it needs suitable hardware, software and an established page-descriptive language. Adobe Systems whose stock has already increased over 600% since it went public in 1986 should see further increases. Profits were up 150% for the most recent quarter.

InfoWorld recently reviewed a controller board that will turn any Canon based laser printer into a LaserWriter look alike. The board is made by the Laser Connection of Mobile, AL (205) 663-7223 and lists for \$2,995. It contains PostScript, 2 MB of RAM, 0.5 MB of ROM and the four LaserWriter fonts. *InfoWorld* gave it a 7.5 rating out of 10.0.

IBM has also endorsed PageMaker which it plans to bundle with Windows in a new desk-top publishing system consisting of one of the new IBM computers and its PostScript laser printer. I get the feeling that IBM needed PostScript (Adobe), Windows (Microsoft) and PageMaker (Aldus) more than they needed it. It seems like they are trying to gain a foothold in the desk-top publishing market before Apple is declared the winner in this important battle. If Apple was not a major player in this market, I am willing to bet that IBM would not be using any of these third-party products and would have developed its own products!

Even more recently, Hewlett-Packard has also decided to support PostScript in addition to endorsing DDL by Imagen. The DDL board will be available in July of this year to add this page-descriptive language to newer Hewlett-Packard laser printers. It will retail for under \$2,000. When these boards are added to existing Laserjet printers, their price will probably surpass the cost of the Apple LaserWriter printer. I guess it wasn't so expensive after all! Evidently Hewlett-Packard bowed to public pressure to also make their Laserjet printer compatible with PostScript. It is undecided who will market the PostScript add-on board but The Laser Connection appears to have the inside track since they are the only company outside Adobe licensed to sublicense PostScript to other vendors. (Source - *PC Week*, May 5, 1987)

So you want to sell the Macintosh II?

Many dealers will be clamoring to market the new Macintosh II when it rolls off the production line in May of this year, but many will be disappointed. Apple is licensing dealers to sell the top of the line Macintosh based on their past record and ability to sell, service and support the product. At first only 750 out of 1900 dealers will get to sell the Mac II while this number will expand to 1,100 dealers with time. Since the Macintosh II is aimed at engineering and business users, who are used to support for the products they buy, Apple does not want to get a black eye by botching the marketing of the Mac II. Apple's last effort at a direct sales force fell flat when dealers complained that it was directly competing with their retail efforts. Interest in the Mac II is high in many government agencies and I think it is clear that demand will outstrip supply for some time.

The Wicked Witch is Dead!

The wicked witch is dead and I want to congratulate the person who threw the bucket of water! What am I talking about, you say? Well, it seems the Army has changed its position on the MS-DOS standard. I quote as follows from the Government Computer News, June 5th issue, "Deputy Secretary of Defense William H. Taft has ordered the Army to drop standards that limited microcomputer buys to IBM Corp. PC-compatible hardware and UNIX-compatible or MS-DOS operating systems." The Army is preparing to rewrite its policies to conform to Taft's directive. The Army is not totally doing away with standardization, and it may propose additional standards if it finds existing regulations do not meet its needs. Complaints from Apple among others and concerns about federal statutes and regulations aimed at increasing competition also influenced the decision. The remaining question is will the Navy and Air Force follow the Army's lead. I'm not holding my breath on that one.

Is a Portable Macintosh Being Developed?

Rumor has it that Apple employees are wearing T-shirts that say, "Malibu, you can take it to the Beach with you." Malibu is apparently the code name for a prototype portable lab-top Macintosh that is back on the developmental track after being delayed for some time. There are apparently two prototypes, both of which use the 68000 CPU. Both have 1 Meg of RAM, a SCSI port and a mouse port. The low end would have one 3.5" drive and a high-contrast LCD screen. It is an active matrix LCD which is different from the super-twist LCD used in many of the current portables. The active-matrix LCD includes a thin-film transistor behind every pixel backed by an electrical circuit. This permits the circuit to be turned on and off instantly with no ghosting of the image. This new technique, is capable of generating contrast ratios as high as 30:1 compared to 12:1 in the current super-twist LCD. The upper end model of the lap-top would feature two drives or one floppy and a 20 M-byte hard disk, plus an optional electroluminescent display. Both models might also have a modular keyboard with numeric keypad and a trackball to control cursor movements. Both models might also contain the new Apple drive controller chip that permits Macin-

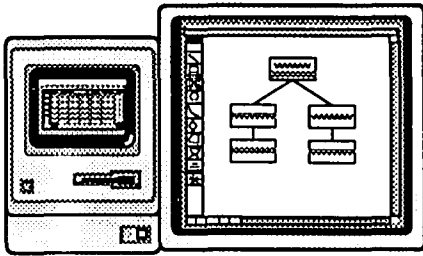
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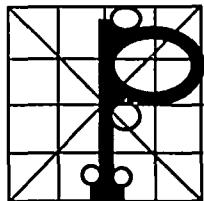
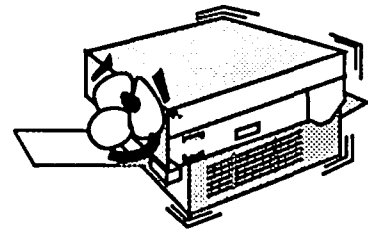
Macintosh workstations are available starting at \$10.00 per hour depending on hardware configurations. Price also includes use of the latest popular software.

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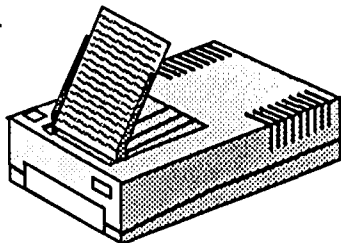
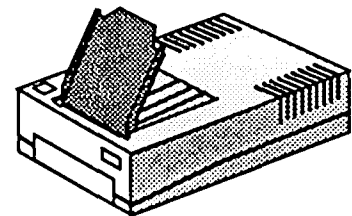
LaserFonts/LaserSampler II

MacTography sells all the currently available PostScript fonts. Call for a listing of fonts and prices. The **LaserSampler II**, published by MacTography, is a useful reference guide on all the current PostScript Fonts. Two Volume set **\$39.95**.

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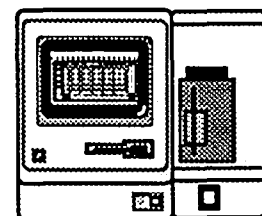


OCR Service—PC Scan Plus

With OCR software from Dest we can read typewritten pages into MacWrite or ASCII for use on the **Macintosh** or **IBM**. Self service or Full service. When Available we will have OCR from Abaton and New Image Technology.

IBM to Mac File Transfer

With the Dayna FT 100 we can transfer data from the IBM 5.25" disk to the 3.5" Macintosh format. Some programs can be transferred with formatting retained. Self service or Full service.



tosh drives to read IBM formatted 3.5" disks. The portables are rumored to have a list price of \$2,500. (Source - PC Week, June 2, 1987).

Macintosh Facts and Rumors of the Month

Apple Computer is developing its own Optical Character Scanner (OCR) that will be superior to any product currently on the market. The details are still sketchy but it should be able to scan both text and graphics and perhaps at a resolution of 600 to 1200 dpi. It would be capable of reading text output for Macintosh fonts such as the LaserWriter fonts and perhaps dot-matrix. If this rumor proves well founded, expect it late in 1987.

Servant version 1.0 should be available by the time you read this. The first official version has been late coming but what can you expect for a free product. I hope it is as good as beta versions indicated! Not to be outdone, Apple is about ready to release "Twitcher" which will combine elements of Switcher and the Finder into "Twitcher". Apple has apparently decided to use some of Servants code but not use Hertzfeld's product as is. "Juggler" is the code name being thrown around for the multi-tasking operating system Apple is developing for the Macintosh II.

Has the most successful shareware developer finally gone commercial? Rumors are circulating that Scott Watson may be ending his shareware version of Red Ryder. A soon to be released version 10.0 may be the last shareware version released. Say it isn't so Scott !!! He has apparently already made the same decision with Red Ryder Host (BBS software) which may no longer be offered free to registered users. Implementation of a graphics telecommunication interface (Nautilus) for both Red Ryder and Red Ryder Host has also been delayed. Another possibility is that users will still be able to download Red Ryder as shareware but will have to pay for the documentation by purchasing it from Scott.

It appears that a previous rumor on the death of the personal LaserWriter was premature. Apple is apparently ready to release the "Personal LaserWriter" which uses the new smaller Canon laser engine and uses QuickDraw routines in ROM but not contain PostScript. It has a throughput of 5-6 pages a minute but is faster putting out the first page. The new LaserWriter can also do page-first printing, stacking output in the proper order. It will probably have 2M bytes of RAM and be based on the same 68000 CPU. The personal LaserWriter may generate 35 million dollars in sales revenue for Apple per year.

Apple is also about to announce a new dot-matrix printer called the BusinessWriter which will be a 27-pin printer with a 15" wide-carriage and which will include PostScript. It will have a retail price of \$1,000. While it might be a poor man's LaserWriter, the quality of the output is rumored to be excellent.

Apple has apparently decided to put some of its over \$600 million dollars into specific acquisitions. Apple has formed the "Apple Strategic Investment Group" and made its first investment by buying a minority stake in Forethought, Inc. of Sunnyvale, CA, for one million dollars. Forethought is the author of "PowerPoint", a dynamic, just introduced presentation-graphics package for the Macintosh. Apple has more recently also invested in Touch Communications of Scotts Valley, CA which produces telecommunication software to link various makes of computers. Touch's software conforms to the OSI (open system

interconnect) format and will permit Macintoshes to connect to IBM or DEC workstations and minicomputers. The Macintosh portion of this link will not be marketed until later in 1987. I have to think such investments are good moves on Apple's part. By helping young companies remain viable which will in turn make the Macintosh more viable, Apple is feathering its own nest. Buying companies outright would be more expensive, drain cash needed for in-house R&D and perhaps lose the independent third-party development that has been a large reason for the success of the Macintosh.

I have to feel that General Computer is hurting and may find it difficult to survive. This hunch is not based on any inside information but I do know that two very large dealers have recently stopped selling Hyperdrives. If you are thinking of a hard disk purchase I would recommend looking to Apple, MacBottom or Rodime. All of these drives use the Rodime hard disk that appears to be very reliable. My Hyperdrive FX-20 is still performing ok except for an occasional high pitch whine when it is first turned on. I have also upgraded to the new system (4.1) and Finder (5.5) on the FX 20 and have had no problem. One word of caution: someone from General Computer told me that I needed to wait for a software upgrade this summer but I believe she thought I had an internal HyperDrive. Another WAP member has reported no problems in 5-10 FX-20 Hyperdrives with the upgraded software. If in doubt, call General Computer first. They now tell you to ask such questions of your HyperDrive dealer but the two I know don't sell them anymore.

Rodime is suing IBM and others because it says its patents for the 3.5" hard disk drives have been violated. Rodime says it has the only license to market 3.5" hard disk drives in the U.S.

Apple has appointed a new head of U.S. sales. He is Mr. Boesenbery, who has held previous positions with IBM and Data General. Apple has shipped 25,000 Mac SE units in the first six weeks after the product's release. This is the strongest sales for any Macintosh model to date. Apple is estimating it will ship 478,000 Macintosh computers in the U.S. in 1987 which is a 41% increase over 1986. By 1988, the Macintosh family of computers will account for 68% of total Apple revenue as opposed to the current 48% in 1986.

Apple and 3Com Corp. have announced that they have jointly developed an Ethernet network-interface card for the Mac II. The interface card will be called EtherTalk and will allow direct connection of the Mac II to a 10 Mbit-per-second Ethernet network.

Adobe has come up with a unique way of dramatically increasing the compliance of sending in the warranty cards and registering their new software product, Adobe Illustrator. The original copy of the program is copy-protected but if you mail in the registration card they send you a copy that is not copy protected. Obviously they are not as concerned with pirating as they are having owners register their purchase. You would think that most purchasers would automatically register software purchases but I estimate compliance is less than 50%. I have often gotten free upgrades and at the very least discounts or information on new products by simply mailing in the warranty cards. I encourage everyone to do so immediately after opening the box. Adobe is also the first company that includes a VHS VCR tape with the software program. The tape does a very good

contd.

job of illustrating what Adobe Illustrator does and includes a basic tutorial. I guess they can afford it at a retail price of \$495. It wouldn't pay to do so for a \$100 program but I encourage other software companies to consider including a VCR tape if their program is difficult to use and the price warrants it. I will give you my impression of this important program in the next few months. It suffices to say that I have not seen the ability to manipulate shapes and curves as well in any other Macintosh graphics program.

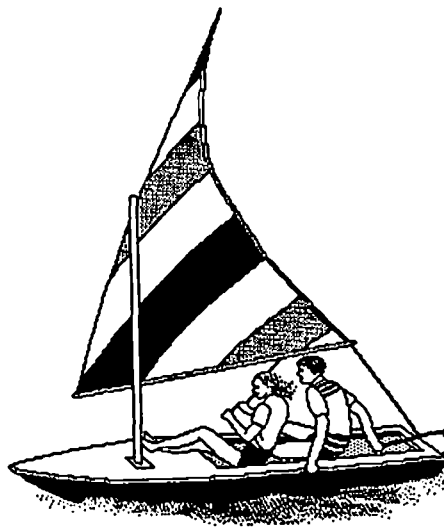
Walker Richer and Quinn is set to unveil a Reflection software product to connect Macintoshes to the HP 3000 super-minis. It will also include a VMS and Unix file transfer utility that will increase Mac-to-VAX connections. WR&Q is a Seattle software house whose products include Reflection which is a micro-to-mainframe connection.

Prime computer is also rumored to be on the verge of signing a strategic agreement with Apple Computer which may involve a economy-class Unix workstation. Although Prime has been rumored before to be working with Apple, there isn't enough information here to form a decent rumor.

ADC Modem Update

DAK is now selling the ADC modem that I have written about several times for \$129, including a \$25 CompuServe on-line bonus. This is reduced from the original price of \$169 and the later reduced price of \$149. Mine still works fine and is a good price for a 300/1200 baud Hayes compatible modem. Ordering information is as follows: DAK Industries, Inc., (800) 325-0800, order # 4334, \$129 plus \$6 shipping and handling. They also sell serial cables and serial cards for IBM or Apple II hookups. The above telephone number can give you the needed information.

Lynn R. Trusal is a Major in the U.S. Army and a research physiologist with the U.S. Army Medical Research Institute of Infectious Diseases, Ft. Detrick, Frederick, MD. He hasn't written any computer books, he doesn't own a consulting firm, he's never taken a computer course, he doesn't do programming, but he reads a hell of a lot and loves the Macintosh (not in the Biblical sense!). Take that Fred Seelig! ☺



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TECHNICAL WRITING ON THE MACINTOSH

by Rick Chapman

I just recently finished writing my Ph.D. dissertation on my Macintosh. Before I started to write the dissertation I spent a good deal of time investigating various word processors, equation formatters and graphics programs in search of the ideal combination for producing this type of technical document. I'm writing this article to describe some of my experiences and opinions. I hope that you'll find it a useful review of several alternatives for the production of technical documents.

My degree is in Physical Oceanography and my dissertation was highly theoretical in nature. Its 82 pages were divided into 11 sections, each with its own special formatting requirements. In addition, the dissertation contained 15 figures and over 60 equations. Several preliminary drafts were to be printed on my Imagewriter, but the final copy would have to be of the highest quality and would thus be printed on a LaserWriter. To dispel any suspense, I'll state up front that I ended up producing the entire document on the Mac using Microsoft Word3.0, Cricket Draw and some custom graphics software written in C. While I experienced some minor problems and frustrations with these software packages, I was able to accomplish all of my goals and finish my dissertation. Before discussing why I ended up using these products, I'd like to discuss some of the programs that I initially tried but for one reason or another rejected.

Equation Formatters

The first and most obvious requirement for my dissertation was a way of producing the equations that form the heart of the work. Typesetting equations is a real art and there are several ways that it can be approached on the Mac. My earliest attempts involved the use of some special fonts along with a standard word processor (e.g. MacWrite or Word 1.0) to produce equations. This works fine for simple formulae like $y = x^2/4$, but fails miserably when more complex equations are attempted. For example, the best an equation of the form

$$y = \int_0^{\infty} \frac{e^{-x}}{x^2} dx + \frac{1}{2}$$

could be typeset using Word 1.0 is

$$y = \int_0^{\infty} \frac{e^{-x}}{x^2} dx + \frac{1}{2}$$

The biggest problem here is that there is no good way to represent a vertical fraction. Of course there are also other problems, including the fact that equations typeset like this are very difficult to edit since spaces or tabs are used to arrange all of their terms. In addition, there are equation constructs which cannot be represented at all using standard word processors, such as matrices with the brackets around them, e.g.,

$$T = \begin{pmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{pmatrix}$$

This problem has prompted the development of several equation formatters or typesetters. These programs allow the user to enter an equation in some manner and then typeset that equation, creating a graphic which can then be pasted into your document, just like a graphic created in MacDraw. I purchased two of these programs, MacEqn and Expressionist (previously called Wienberg), to try out. These two programs turned out to be very similar. Both allow you to enter an equation on screen, edit that equation, and then create a graphic for pasting into your word processor. Both allow you to paste the graphic back into the program for additional editing. The graphic that is created is in the form of a PICT file that is MacDraw (but not MacPaint) compatible. This gives the benefit of providing a very high-quality output on the LaserWriter.

MacEqn, the oldest of the programs, is a desk accessory that allows you to enter equations using either menu choices or a set of keyboard equivalents to select particular equation constructs. Thus, to typeset a vertical fraction of 1/2, you would choose the fraction construct from the menu, type the number 1 for the numerator (hitting the ENTER key to indicate the end of the numerator), and then type the number 2. Editing is performed by pointing at a particular element to move the insertion point, and then typing the new material to be inserted or using the backspace key to delete previous entries.

Expressionist differs from MacEqn mainly in that it provides a graphical menu of equation constructs on the side of the equation editing window. I liked this scheme as I quickly got tired of choosing menus from MacEqn and I had a hard time remembering their key equivalents. I found the icon-based constructs in Expressionist easy to use and recognize. In addition the editing of equations was a little easier in Expressionist, aided by the fact that the editing point could be more easily selected.

Both programs do a good job of typesetting equations, but I found neither to be suitable for my needs. My major complaint with them was in equation editing. In particular, I lived in fear of my major professor suggesting a change of notation after all of the equations had been entered (e.g. changing all of my α 's to β 's); something he in fact did several times! With either of these programs, such a change would have meant reformatting each individual equation, one at a time. This could easily have taken several hours. These programs are very good for one or two equations embedded in a document and are still the only way that I know of to get equations into PageMaker. For the price, I'd rate both as very good values, but unfortunately I can't recommend either of them for use in producing long technical documents.

T_EX

No that is not a misprint, T_EX is the name of a typesetting program designed by Donald Knuth. It was originally designed

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several years ago, before the Macintosh was introduced, to provide a means for typesetting technical documents. Versions of the program are often found on minicomputers where users use standard text-only terminals to enter the descriptions for complex documents. The system uses a string of text characters, created using any word processor, to describe the complete layout of each page, paragraph, line and character. This text file is read into the T_EX program which converts it into instructions that the printer can understand. The user often doesn't see the way the page or equation will look until it is output to the printer. (Although most minicomputer versions support graphical output to devices like Textronix terminals).

There are several implementations of T_EX on the Macintosh including MacTex and Textures. Both implementations support output to the screen as well as the Imagewriter and LaserWriter. Although I didn't like the idea of abandoning the concept of what-you-see-is-what-you-get word processing, I bought the T_EX Book and borrowed a pre-release version of Textures from a friend to try it out.

I'll spare you the blow by blow description of my struggles with T_EX. Suffice it to say that T_EX is a very powerful system, which I found to be very difficult to learn. Formatting equations was relatively simple, but I found its tremendous wealth of formatting commands to be rather intimidating. So much so, that I never did figure out how to format a simple table of numbers. Overall, T_EX is capable of typesetting the most complex documents one can imagine, but the price you have to pay for this flexibility is a steep and long learning curve.

Now I know that there will be T_EX enthusiasts out there that will write in to say that I'm nuts. In the hopes of heading some of them off, let me say that as a graduate student, I was more interested in getting my dissertation produced than in learning how to typeset. I'm sure that once one learns T_EX that it can be a wonderful system, I just didn't want to spend the time to learn it.

Microsoft Word 3.0

I was an early purchaser of Word 1.0, and while it was more powerful than MacWrite, I found it to be slow and cumbersome. The fact is that although I did use it for several long documents, I never really liked it. Well, when I got a letter from Microsoft promising the moon and more in the form of Word3.0, I figured what the hell and sent in my \$99. Then, as my other choices for equation processing did not work out, my need of Word3.0 grew greater and greater.

When I got Word3.0, my prayers were answered. Here is a word processor that does it all. It is fast and relatively easy to use. It has very complete formatting capabilities. It can handle long documents with ease. It has the added features of outlining, spelling checker and table manipulation built-in. All this and IT DOES EQUATIONS!!! When I opened the manual, I flipped to the formula section and read about the equation capability. This was the first equation that I entered after powering up my system:

$$\rho \frac{Du}{Dt} + 2 \Omega \times u = -\nabla p - \rho g \hat{k} \quad (a)$$

This is a statement of the conservation of momentum in a frictionless shallow fluid on a rotating planet (Sorry but I couldn't help showing off a little!) This equation is entered as follows:

$$\rho \cdot \text{\F}(Du,Dt) + 2 \Omega \times u = -\nabla p - \rho g \cdot \text{\O}(k, \text{\S}\cdot \text{\UP4}(\wedge)) \quad (b)$$

The '\F' sequence on the left hand side of the equation tells Word 3.0 to form a fraction out of the two items found inside the following parentheses. The '\O' sequence on the right hand side tells Word3.0 to overlay the second item inside the parentheses on top of the first item. The second item is a '^' symbol which is superscripted 4 pixels by the '\S\UP4' sequence. Within Word3.0 equation constructs are designated by sequences of characters beginning with the special '\X' character (formed by pressing Option-Command-). This may look intimidating at first, but I found it to be quite simple to use in practice.

All of the special characters appear as shown in (b) when the equation is first being entered or whenever the Show Paragraphs option is selected. Otherwise, the typeset form of the equation (a) is shown. This makes editing equations fast and simple. Furthermore, because equations are just standard text within a regular Word3.0 document, all of the equations within a document can be globally edited using the standard Find and Change commands.

Although overall I'd give Word 3.0 a five-star rating, there are several minor bugs or problems in the program. Although they are little more than annoyances, I mention them just to show that no program is perfect. First, my copy of Word3.0 creates small temporary documents in the system folder on the startup disk, but never deletes them. These documents are usually small, but when 30 or 40 of them build up they can take up some space. Microsoft informed me that they are aware of this problem and are trying to track it down.

Second, there is something screwy with the way that leader tabs work. Leader tabs are used to fill in a portion of a line with dots, dashes or an underline. I used leader tabs within my table of contents (which Word3.0 automatically creates and fills in!) to place dots between the section titles and the page numbers. Unfortunately, this caused the spacing of the section titles to be thrown off, just as if extra spaces were being randomly thrown in. A Microsoft Technical Representative said that there was an occasional problem of this type when using leader tabs with non-LaserWriter fonts, but that they were not aware of any problem when standard Laser fonts were used. In any case, the work around is to insert hard spaces (using Option-Space) between the words before the leader tab to prevent Word3.0 from spacing things out.

Third, there is an option in the Section dialog box to make the first page of the section special, that is, to not print the standard headers, footers or page numbers for the first page of the section. This option works fine with regard to headers and footers, but does not always suppress the printing of page numbers at the beginning of sections. Apparently the program will only suppress the printing of the page number if the first page of the section is numbered 1. Otherwise the page number is printed as on all of the other pages. This was a problem since my dissertation was required to have all of the pages numbered at the top, except for the first page of each section; those were to be numbered at the bottom. I used this option to insert a special first

contd.

page footer, with the page number, throughout the document. When it printed out though the program printed the page numbers at the top and the bottom of the first page of each section (except for the very first section). A little white-out corrected the problem.

My final complaint is that the spelling checker objected to the spelling of certain "words" that it found within equations. Most often what the program identified as "words" turned out to be simple Greek variables with one or more alphanumeric subscripts. This made the spelling checker much harder to use on technical documents than it would be on regular text. In my opinion, the spelling checker should not treat any sequence containing either a number or a character in the Symbol font as a word.

Still, even with these complaints, I would not hesitate to recommend Word3.0 as the best all around solution to technical word processing.

Technical Drawing

The last major requirement that I had was for a way to produce high quality drawings and plots, suitable for use within the dissertation. My first thought was to use MacDraw since it is capable of producing reasonably high quality line drawings on the LaserWriter. Unfortunately MacDraw had a couple of drawbacks; its patterns used for polygon fills are rather crudely printed on the LaserWriter and it cannot easily handle text with super- and subscripts. For this reason I bought a copy of Cricket Draw, a program which promised significant improvements over MacDraw, especially in the area of text handling.

Cricket Draw has almost all of the capabilities of MacDraw, but adds such features as advanced text support including mixed fonts, styles and sizes within a single selection, an incredible variety of fills, a number of special effects such as graduated fills and starbursts, and full Postscript support. It is an impressive program both in size (>300K) and power. Unfortunately it is a new program and still needs to go through several revisions before it will work as consistently and as smoothly as MacDraw.

Let me say up front that the version I have been working with is the updated version 1.01; the original version 1.0 was almost useless. Much to Cricket Software's credit, they provided the corrected version to all owners as soon as they realized that the first version was inoperative.

With this new version, I have encountered problems copying and pasting selections from one image to the next. The copied selection generally gets pasted into the center of the viewing area, but I have had selections pasted outside of the useable area of the screen several times. These selections then show up on the screen when I've zoomed out to view the entire page, but they cannot be selected to move or cut. Another problem is that handles do not always show up on small objects when they are selected. Another problem with small objects in general is that they are not always selected when a selection box is drawn around them, especially when the viewing mode is not set to actual size.

Although the text formatting capabilities of Cricket Draw far exceed that of MacDraw, there is one area where MacDraw is superior and that is in the global editing of fonts, styles and sizes. To change all of the text in a MacDraw image to 12-point Helvetica you need only select all objects and then use the menus

to set the text to 12 point and Helvetica. The change will then be applied to all text that appears. Cricket Draw will not allow you to make a font, size, or style change to more than one text selection at a time. Thus to change all text to 12-point Helvetica using Cricket Draw you have to select each text object one at a time, type Command-E to edit the text, select the entire text selection with the mouse, type Command-T to set the text type and then choose 12-point and Helvetica from the dialog box that appears. If there are numerous text selections in an image, like numbers along an axis in a plot, then changing the text font and size can be a long and tedious process. I've complained about this "feature" to the people at Cricket and they responded that this was a compromise required to keep the program small enough to fit onto a 512K Mac. I view it as simply a poor design choice in an otherwise well designed program.

Data Plotting

The final piece of the puzzle was a way of producing the required data plots for the dissertation. The data itself was produced from a model running in the language C. My first thought was to import the data into a standard Mac graphics program such as Microsoft Chart or Cricket Graph. Unfortunately, I needed some rather complicated plots including polar and three-dimensional trajectory projections which the standard programs could not create.

Even when I did try to import the data for the simpler plots, things didn't quite work out. For example, one simple plot that I created had five curves overlaid within the plotting area. When I created this figure using Excel, it looked pretty good, but needed some minor relabelling. When I imported the figure into Cricket Draw the different styles used to distinguish the five curves were lost. Unfortunately, this is really neither program's fault; they are simply not 100% compatible with regard to line styles.

A succession of similar problems led me to produce my own plots using a plotting package written by another WAP member, Andy Scheck. This package provides a wealth of C functions for producing any type of plot one can imagine. The finished plots can be placed onto the clipboard in PICT format for pasting into other applications such as Cricket Draw. Thus the data was plotted from within the C language, but the plots were fully annotated within Cricket Draw. The drawback with this approach is that I had to write a program to produce each and every plot.

Final Comments

Using this system of software and hardware I managed to produce a final edited version of my dissertation in just two months from the day that I first started writing. (Naturally the actual research took a little longer.) My professors were amazed at not only the speed at which I produced my dissertation but also the visual quality of the final product. Living in the pre-Mesozoic age where IBM's rule the world, they had no idea that a desktop system could produce quality technical documents.

In summary, I'd say that recent software developments have made it possible to produce high-quality technical documents on the Macintosh computer and LaserWriter printer. I do not hesitate to recommend Word3.0 for technical writing, but suggest that some real power users may want to consider the T_EX alternative. The area of technical graphics could use some

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GUIDE TO FORMULAS IN WORD 3.0

by Harris J. Silverstone

General observations

Word 3.0 contains machinery for typing mathematical formulas, but the discussion in the manual is not very clear. This is an overview of that machinery with heavy reliance on examples.

There are 10 built-in "formula commands" invoked by typing "Opt- $\&$ - \backslash " and then one of the letters,

A, B, D, F, I, L, O, R, S, X,
where

- A = Array (matrix)
- B = Bracket (various styles, automatically sized to following text)
- D = Displace (forward or backward)
- F = Fraction
- I = Integral, product, summation, or the like
- L = List (alternate way for putting commas into formulas)
- O = Overstrike
- R = Radical (square root)
- S = Superscript and/or subscript
- X = Box, overline, underline, left line, right line, or any combination

These commands may have from 0 to 3 *arguments* (or more, in the case of *List*) and 0 to 6 *options*, the number depending on the command. Options are invoked by "Opt- $\&$ - \backslash " followed by a *two*-letter code. (Some options require additional information. See below.) Arguments, on the other hand, are (i) enclosed by parentheses and (ii) separated by commas. Parentheses are *mandatory* even when the number of arguments is zero. Commands may be nested and may take more than one line when typed in with "Show ¶" on, but the final printed formula (visible when "Show ¶" is off) must fit on a single line. Because parentheses and commas are part of the command syntax, their use as "ordinary characters" when part of an argument is slightly awkward. To use a comma or a parenthesis as text in an argument, the comma or parenthesis must be preceded by the "Opt- $\&$ - \backslash " character. An argument that consists of a text list containing commas can become a minor mess. The *List* command has the sole purpose to bypass typing "Opt- $\&$ - \backslash " before each comma (see the examples below). (A similar "fix" does not exist for parentheses.)

Note:

- Use "Full Menu".
- Use "Show ¶" for editing.
- Use "Hide ¶" to view formatted formula.
- " $\&$ -y" toggles "Show ¶" and "Hide ¶".
- Upper and lower case for a command are equally valid.

When editing with "Show ¶" on, the "Opt- $\&$ - \backslash " character is displayed on screen as a backslash preceded by a period, but with the period falling underneath the beginning of the backslash. In the discussion below, a similar representation (\backslash) has been constructed. Always keep in mind that " \backslash " means "Opt- $\&$ - \backslash ".

General syntax for "formula commands"

The style is as follows. There may be 0 to 6 options and 0 to several arguments.

\backslash Formula command letter. \backslash Option letters
... \backslash Option letters(argument, ...,argument)

Preliminary examples

(The purpose of these first two examples and of all examples that follow is to show how the formula commands work, not how to coax out the best looking results.)

$$\backslash I(0,\infty,x dx) = x^2/2 \quad \text{gives} \quad \int_0^{\infty} x dx = x^2/2$$

$$\backslash I\backslash n(0,\infty,x dx) = x^2/2 \quad \text{gives} \quad \int_0^{\infty} x dx = x^2/2$$

Syntax & examples of each formula command

A(rray) Options: AL, AR, AC, COn, VS_n, HS_n
(align left, align right, center, n columns, vertical space n points, horizontal space n points)

		a	b	c
$\backslash A\backslash ac\backslash vs12\backslash hs12\backslash co3(a,b,c,d,e,f,g,h,i)$	gives	d	e	f
		g	h	i
$\backslash A\backslash ac\backslash vs6\backslash hs6\backslash co2(111,123,3,4)$	gives	111	123	
		3	4	
$\backslash A\backslash al\backslash vs6\backslash hs6\backslash co2(111,123,3,4)$	gives	111	123	
		3	4	
$\backslash A\backslash ar\backslash vs6\backslash hs6\backslash co2(111,123,3,4)$	gives	111	123	
		3	4	

B(racket) Options: LC \backslash c, RC \backslash c, BC \backslash c
(left character, right character, both characters [but notice the "[(<" examples]; notice also the " \backslash " before the "c")

$\backslash B(a)$	gives	(a)
$\backslash B\backslash lc\backslash (a)$	gives	[a
$\backslash B\backslash rc\backslash [(a)$	gives	a[
$\backslash B\backslash bc\backslash (a)$	gives	[a]
$\backslash B\backslash bc\backslash [(a)$	gives	[a]
$\backslash B\backslash bc\backslash [(a)$	gives	(a)
$\backslash B\backslash bc\backslash <(a)$	gives	<a>

To get the comma into "0,∞" one needs to precede the "," by \ (or use List):

$\backslash B\backslash c\backslash(\backslash r c\backslash)(0,\infty)$	gives	$[0]$
$\backslash B\backslash c\backslash(\backslash r c\backslash)(0\backslash,\infty)$	gives	$[0,\infty]$
$\backslash B\backslash c\backslash(\backslash r c\backslash)(\backslash L(0,\infty))$	gives	$[0,\infty]$
$\backslash B\backslash b c\backslash\{(\backslash A\backslash a c\backslash v s 12\backslash h s 12\backslash c o 2(11,12,3,4))\}$	gives	$\left\{ \begin{array}{cc} 11 & 12 \\ 3 & 4 \end{array} \right\}$

D(isplace) Options: FOn, BAn, LI
(forward n points, backwards n points, draw line)

$h\backslash D\backslash f o 6()$	gives	$h /$
$h\backslash D\backslash b a 7()$	gives	h
$h\backslash D\backslash f o 6\backslash l i()$	gives	h_\backslash
$h\backslash D\backslash b a 9\backslash l i()$	gives	$_h$

F(raction)

$\backslash F(\text{numerator}, \text{denominator})$ gives $\frac{\text{numerator}}{\text{denominator}}$

I(ntegral) Options: SU, PR, IN, FC\c, VC\c
(summation, product, in-line limits, fixed-height character "c", variable-height character "c" – "integral" is really a misnomer for this command)

$\backslash I(a,b,c)$	gives	$\int_a^b c$
$\backslash I\backslash s u(a,b,c)$	gives	$\sum_a^b c$
$\backslash I\backslash p r(a,b,c)$	gives	$\prod_a^b c$
$\backslash I\backslash i n(a,b,c)$	gives	$\int_a^b c$
$\backslash I\backslash f c\backslash A(a,b, \backslash I(1,2,c))$	gives	$\int_a^b \int_c^2 A$
$\backslash I\backslash v c\backslash A(x,y, \backslash I(1,2,c))$	gives	$\int_x^y \int_c^2 A$
$\backslash I\backslash v c\backslash A\backslash i n(a,b, \backslash I(1,2,c))$	gives	$\int_a^b \int_c^2 A$

L(ist)

$\backslash L(x,y, z)$ gives x,y, z

Note how to use \L to get the comma in "n,m", i.e., to include commas as text.

$\backslash L\backslash s u(\backslash L(n,m=0),\infty, a_{nm}x^n y^m)$ gives $\sum_{n,m=0}^{\infty} a_{nm}x^n y^m$

O(verstrike) Options: AL, AR, AC
(align left, align right, align center)

$\backslash O(-h- /)$	gives	$\overline{-h-}$
$\backslash O\backslash a c(-h- /)$	gives	$\overline{-h-}$
$\backslash O\backslash a r(-h- /)$	gives	$\overline{-h-}$
$\backslash O\backslash a l(-h- /)$	gives	$\overline{-h-}$

R(adical)

$\backslash R(yz)$	gives	\sqrt{yz}
$\backslash R(x,yz)$	gives	$\sqrt[x]{yz}$

S(uperscript or Subscript) Options: UPn, DOn
(up n points, down n points. According to the manual, when two arguments are used, the super- and subscripts are left adjusted. In fact they come out centered. Also, with two arguments, both UP and DO are ignored.)

$a\backslash S(111,2)$	gives	$a \begin{matrix} 111 \\ 2 \end{matrix}$
$a\backslash S(1)$	gives	a^1
$a\backslash S\backslash d o 12(88)$	gives	a_{88}
$a\backslash S\backslash u p 1(111,2)$	gives	$a \begin{matrix} 111 \\ 2 \end{matrix}$
$a\backslash S\backslash u p 6\backslash d o 12(111,2)$	gives	$a \begin{matrix} 111 \\ 2 \end{matrix}$

X(Box) Options: TO, BO, LE, RI
(top, bottom, left, right)

$\backslash X(a)$	gives	\boxed{a}
$\backslash X\backslash t o(a)$	gives	\overline{a}
$\backslash X\backslash b o(a)$	gives	\underline{a}
$\backslash X\backslash l e(a)$	gives	$\left a \right.$
$\backslash X\backslash r i(a)$	gives	$\left. a \right $
$\backslash X\backslash l e\backslash b o\backslash t o(a)$	gives	\boxed{a}
$\backslash X(\text{hello} - \text{ciao})$	gives	$\boxed{\text{hello} - \text{ciao}}$
$\backslash X()$	gives	\square

BITS AND PIECES

by Peter Trinder

The Great SE Fan Controversy: Part Two.

Tom Warrick's editorial about the SE fan is very interesting. I would like to add a comment. My friend who makes the Qisk hard disk here in England took his Apple fan out and replaced it with the one he fits to his hard drives. This is a standard type of rotary that is used in many disk drives. He made a metal shroud after the style of the Apple one and found it still a bit noisy. He always puts a 20 ohm resistor in line to slow the fan down a bit and this actually seems to make it a bit cooler! Finally he looked at the bars in the back of the case and filed these so that they were a bit more aerodynamic, and lo and behold the machine is now acceptably quite!

On my TurboMax the fan is one of the square framed rotaries and it is running at full speed. I intend to try slowing it down with a resistor but want to get the internal drive in first and then check temps before tinkering with the fan speed.

This leads me on to a postscript to my MacMemory article. I said that the Max2 was not shipped fitted in the UK. I have been ticked off by my good friend Stefan Youngs who heads MacEurope and is the UK agent for MacMemory here. They ship a Max2 already fitted to an Apple Board and you return the one out of your Mac for credit. So this is similar to the arrangements in the US.

I notice that you have raised the point about dealers checking the power supply voltages when repairing and upgrading Macs. This is something I insist on for every Mac that goes out of our workshops. The difference in some of the readings is quite remarkable. Further to this, I read an article, in fact a second part of an article, in MacTutor (July) on the subject of Mac power supply/analog boards. My board started to play up and I lost video. It came back when I tapped the left side of the case. This was OK for a while then eventually it would only work when I pressed the side in. This is not a recommended position described in the Macintosh Manual and it gets rather tiring; furthermore typing with one hand is not very productive! We took the board out and examined it with a magnifying glass. We found that there were fatigue cracks round the joints of the heavier components. The hot/cold expansion of two years of being turned on and off daily had caused some joints to go hard and eventually crack. Less than five minutes with an iron had everything back as right as rain again. So before you shell out on a \$100 board replacement see if you can either get your dealer or friendly engineer to check the joints out first. It takes no longer than a board swap, and could take less because you don't need to discharge the tube. ☺

Technical Writing contd. from pg 60

improvement. I find Cricket Draw to be an improvement over MacDraw in most areas, but the combination of a few bugs, poor support for global text editing and a relatively high price leads me to suggest caution before you rush out and buy a copy. Still, I expect that given some time, Cricket Software will improve Cricket Draw to the level of some of their other products. Finally, I see a real need for some advanced charting package for those that do not want to program. In the meantime, scientists and engineers will just have to either program or make do with what they have.

Programs Reviewed

MacEqn - Software for Recognition Technologies, 110 University Park, Rochester, NY 14620, (716) 461-0923, \$40

Expressionist - Allan Bonadio Associates, 1579 Dolores St., San Francisco, CA 94100, (415) 282-5864, \$54.95

MacTex - FTL Systems, Inc., 234 Eguntun Ave. E. Suite 205, Toronto, Ontario, Canada M4P 1K5, (416) 487-2142, \$750

Textures - Addison-Wesley Publishing Co., Educational Media Systems Division, Reading, MA 01867, (617) 944-6795, \$495

Microsoft Word3.0 - Microsoft, 16011 NE 36th Way, Box 97017, Redmond, WA 98073, (206) 882-8089, \$395

Cricket Draw - Cricket Software, 3508 Market St, Suite 206, Philadelphia, PA 19104, (800) 345-8112, \$295. ☺

MacSource

a mostly Mac store...

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QUARK XPRESS: A Review

by Jay Rohr



It is appropriate to "XPress" gratitude directly to Journal Editor, Bernie Urban, and also indirectly to Marty Milrod for the honor of allowing me the privilege of reviewing Quark XPress by the July deadline date, at Bernie's request. This had been one of those programs of promise and rumor up for serious purchasing consideration. With the opportunity to try it first hand before deciding to buy or not to buy, yours truly jumped before shelling out for such a mega-bucks program.

It may be added that Messrs. Urban and Milrod could not have picked a more qualified person to handle the project—this said humbly but truthfully—because of my daily involvement with graphics, design, composition, layout and paste-up work, typography, and an intimate working knowledge of the state-of-the-art Linotron 300 typesetter. WAP knows its people well.

CRITERIA FOR REVIEW

For the purposes of this review, simplification was a goal for the general reader wherever possible, and technical only when absolutely necessary. Broader, more detailed amplifications could be extended on most of the subjects covered. Unavoidable comparisons with other programs are stated when either appropriate or obvious. Criteria for reviewing Quark XPress lies neither in the corporate nor the desktop publishing arena per se, but in the value of the program itself for the individual user on the Macintosh.

A critic in the latest issue of Macazine bemoaned the complexity of some of the newer programs compared with the originals, and stated that, because of this, the Mac is becoming less user friendly. But this overlooks the inadequacy of the older programs and their severe limitations for PostScript translation. Developers and Apple thankfully are in a growing, expanding market, here to stay. If the potential of this technology is not built upon, Apple would not exist. It so happens that the potential of this dynamic Macintosh tool has just recently been recognized for what it is, and progress is its building block. This brings us to XPress.

TECHNICAL DATA AND GOOFS

Quark XPress: version 1.02R, 387K program. Dictionary, 170K; Frame Editor, 62.5K; XPress Help, 61K. Basic Apple LaserWriter screen fonts loaded.

Typos (typographical errors) in the 3-ring manual occur on pages 1-7 (boxed should be boxes), 1-17 (wil should be will), 3-1 (artwork left off cover page for section 3), 5-54 page number in section 3 should read 3-54, and I-3 Index (Guidelines should read Guidelines). In the Smyth tutorial in Section 1, page 1-23, there was no text in the small text box under the oval on screen as was shown in the manual illustration. Only the Text Overflow box was visible. This could temporarily throw off someone trying to learn the program since Text Overflows had not been discussed at this point in the tutorial.

In PageMaker 2.0, a document was saved in Microsoft Word (3.0) format in order to import it into Quark XPress. XPress could not read this version of Word, and said so. The imported file thus had to be converted into a Text Only file in order to be

recognized by XPress. Import and export are not listed in the XPress index. Looking up specific programs for importing and exporting gives the same results: they are not there. But tucked away in the middle of the manual in Section 3 is a one paragraph reference to importing MacWrite and M'Word files, with or without formats, almost as if this were an afterthought. In one of the Appendices is a reference to EPSF and PICT graphic files. If the program developers gave much thought and concern about these abilities, the manual did not display it. The PageMaker manual, on the other hand, voluminous as it is, went to great lengths describing importing/exporting features as well as their file filter process for various other programs.

THE 2ND TUTORIAL

After successfully piecing together the elements described within the 2nd XPress tutorial, the LaserWriter Plus took a good half hour to print out "Hammond's Candies" template newsletter. The long delay was due in large part to the heavy graphics nature of the file. At print-out, the right side and the bottom edges chopped some of the copy. Please note that this tutorial was showing an example of a template to be used over and again by Hammond's; it was their guide, and our guide on setting up templates. The adjustments would not have been that difficult to make in order to correct the chopping of some characters in the stories, but that is not the point. As a viable LaserWriter or ImageWriter template file, it doesn't cut the cake: it's not a good one. But it could have been if someone had taken the time to print it first to check its usefulness as a working master template. Nor is it explicable why a single rule suddenly becomes a double rule at the bottom left-hand side of page 1 on this template.

GRAPHICS

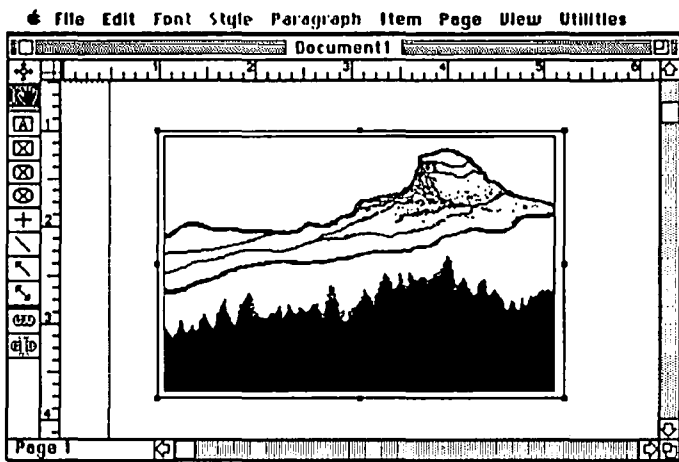
Both an EPSF (Encapsulated Post Script File) and a PICT file from Cricket Draw were attempted as Import files into an XPress document. The EPSF file picked up fine, and a selected frame of 3 points thickness was placed around it successfully. The PICT file did not drop into the Picture Frame device used by XPress to accept graphics files. Even with maximum expansion and scrolling with the hand, the PICT file just wasn't there.

WORKING XPRESS

For the PageMaker (PM), MacPublisher, and ReadySetGo (RSG) user, the XPress menu at first glance seems to offer nothing new or outstanding. As a matter of fact, many of the features of these other page layout programs seem very familiar when seen in XPress, as if all the best ingredients of these were combined into one program. As the Acta outliner has its daughters, XPress has its "children" or "siblings." Using Text Boxes and Graphics Boxes (much like RSG), instead of the venetian blinds of PM, any text or graphic residing within the bounds of that box is called a "child." Because of the nature of the program functions, deleting some of these elements is not simply a matter of Command X. It takes a few times working with files to get used to the delete functions.

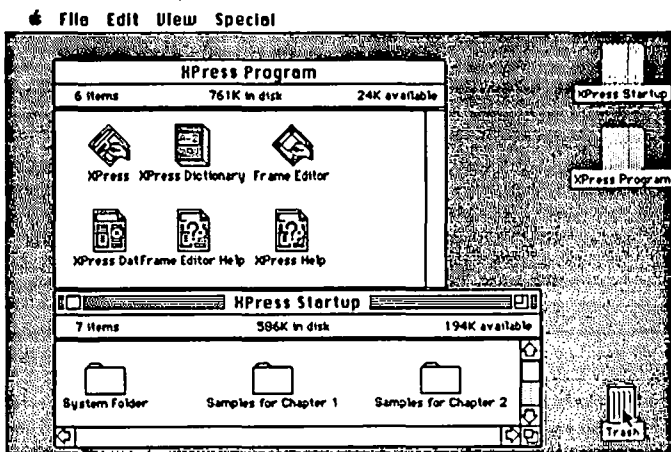
Using the familiar tools on the left side of the screen, the user will find that he/she has to keep re-selecting them each time a line

contd.



or box is drawn. But if homework is done and the manual is read, the user finds that depressing the Option key when selecting a tool will keep that tool selected for repetitive tasks until another tool is selected.

New tools include the top tool for moving Active boxes around the screen. The Editing Tool combines an I-beam with the hand, and is used for either text editing or for moving graphics WITHIN a box, but never out of it. In other words, the concept is that a sibling can never be separated from its "parent" box, but the box can be expanded and manipulated. Two other new tools appear at the bottom end: the linking chain, and the broken (unlink) chain. These link columns of textual matter from one frame to another. The important thing to remember about XPress is that these chains do not have to be sequential boxes, but can be ANY box on ANY page of ANY size that the user defines as a link for that story or article within that document.



BUILDING BLOCKS

Perhaps we are witness to a pattern developing in these newer generation of programs. It's more like a building block structure of ideas amplified from previous ideas, and then welded into more of the potential of which the Mac is capable. GraphicWorks 1.1 has done it with MacDraw and MacPaint while throwing in some newer tools—most notably the airbrush and the sophisticated PostScript/LaserWriter manipulations. PageMaker 2.0 has built upon the corpse of their own PM 1.2 whose files now have to be translated into the completely new 2.0 version with a little bit of pain as far as type and leading are concerned. ReadySetGo3 is such a great improvement over the older ver-

sions that it would be foolish to now use the older versions. And, of course, there is Microsoft's powerful Excel running circles around the formidable Microsoft Multiplan.

The list goes on. But notice above, that many of the software development companies that survive are constantly improving their own products based both on user response and advance-discoveries made with other programs. And many of these companies do this at risk of sounding the death knell for their own previous versions by rewriting them entirely. This is good from a user's point of view. If it temporarily causes some pain and confusion, bear in mind that these adjustments have to be made by the better developers in response to user problems and requests (us) and in response to new System, Finder, LaserWriter, LaserWriter Prep, and font file refinements that are not only important, but necessary upgrades toward better quality and craftsmanship in our environment.

Quark, a new company, asked questions of page layout users, and had some ideas of their own to implement. As a result, XPress was produced. And though their menus look familiar, and the Mac interface is followed more than just closely, XPress, like CricketDraw, is full of hidden menus and shocking surprises.

SIMILARITIES

Text, picture boxes (grid boxes), and the Modify dialog box in XPress are reminiscent of RSG. The SnapTo Guides, the Tab (dot or dash or any character) Leaders, Reverse type, Ruler Guidelines horizontally and vertically for placement of objects, the ability to create Default pages are reminiscent of PM. The Picture Boxes in XPress have somewhat the aura of MacPublisherII without the confusion. But from this point on, and aside from some of the moot minus points described at the beginning of this review, the comparison stops here.

To say that XPress is a significant advance in page description and layout manipulation, to say that it resides in the forefront of what a computer program should be, to state that it is a professional tool (not merely because of the price but because of its value), to say that it is a precision tool exploiting much of the power of the Mac and the LaserWriter/Linotron—all these may very well be understatements!

THE DIFFERENCE

Is XPress a user-friendly program? If one is familiar with the basics of other page layout programs, the answer has to be "yes." If one is just beginning to enter into desktop publishing graphics, a little delving into the Glossary of the manual would be enlightening, plus exercising with the step-by-step tutorials would translate user-friendliness into a fairly easy, learnable program. Envy the newcomer who has this application as the first page layout program, because most of the peculiarities and bad habits learned from the other page description programs, necessary manual adjustments, most of the frustrations and disappointments, trials and errors, are evident in this one. What we have in our hands with XPress is a refinement of tools and functions in masterly style.

From a personal standpoint with a graphics design and typographic background, XPress is it—the closest program to matching knowledge of type and graphics. This is further substantiated by Allied Corp., makers of the Linotron ImageSetters, as we'll see further on.

contd.

Is it worth learning, if you know little or nothing about desktop publishing, graphics and type? Well, let's see: it can be mentioned that what you, as a single user with this program can accomplish is what it takes a crew of special people to do—i.e., an art director, a designer to spec type, a layout artist, a paste-up artist, a graphic artist or illustrator, and a typographer. Quark XPress thus puts in a single user's hand an electronic program or device that would normally take 5 people to produce manually in their respective fields. Such a tool this is! Like someone once said, "So you tell me if it's worth learning!"

ALLIED CORPORATION

The reference to Allied, which I alluded to above, rests in this. I was shown some Macintosh printouts from a Linotron 300 typesetter using Quark XPress combined with Adobe's Illustrator on June 25, 1987. These examples are, by now, in every salesman's portfolio. The link between Macs and Allied's Linotron with their raster image processor (RIP) is well known. What is NEW is the inclusion of Quark and Illustrator in their sample files. And what must be remembered here is not only that Linotron series is the state-of-the-art, highest resolution typesetter in the world, but also the inclusion and, more importantly, RECOGNITION of the Macintosh as a serious typesetting and graphics-producing input terminal for the Linotron as well as for any typesetter equipment using RIPs, such as the newly announced 600 series by AM's Varityper.

The samples, done on the highest resolution possible (over 2600 dots per inch) were unbelievable. One of them showed an image of a VW with halftones drawn in Illustrator, and the other a page layout with XPress and the Illustrator eagle floating in the middle of the page, the type flowing effortlessly around it, with all the correct kerning, letterspacing, dropped caps and run-arounds any graphics artist could want. Is Allied promoting Quark XPress? You bet it is, because it comes closest to Allied's highest standards of typography. (Allied-Linotype invented Helvetica and a host of other typefaces, and has the largest collection of owned, patented, copyrighted fonts in the world.)

Kerning, or the ability to proportionately space and design pleasing characters of type (such as tucking a lower case "a" under the lid of an uppercase "T"), can be tightened in increments of 1/100ths of an "em" space in XPress, which translates to a control of 1/1000ths! of an "em" space when output on the Linotron 300. (An "em" space is the space of an uppercase "M" in the point size being used.) In a previous article I explained how difficult this function was to perform in PageMaker 1.2. PageMaker's version 2.0, however, corrects this but the control only relates to several kerning pairs with only a quarter of the control that is available in XPress for LaserWriter output.

QUARK XPRESS—A COURSE IN TYPOGRAPHY

True kerning and letterspacing are available in XPress. So is Tracking. Tracking is a feature for text manipulation used on the Linotron 300 typesetter. It changes the white spacing between characters, loosening or tightening these spaces, until it is turned off. Zero tracking is normal; 1 tracking is tighter; 2 and 3 are very tight letter spacing. XPress uses this highly advanced typesetting feature for controlling character widths, either from a dialog box affecting the selected copy, or with keystroke commands Command Shift] (more white spacing) or Command Shift { (less or

tighter spacing). In the keystroke commands, this is similar to kerning.

Also available on the most advanced typesetting systems using digitized fonts is a function known as Horizontal and Vertical Scaling. Translated, this means you have the ability to alter the type by expanding it or condensing it in increments of your choosing. In this manner, one is often able to create unique characters out of any given font style. XPress also has this feature. For example, if the text selected is a size of 10 point, a Command Shift] expands the type horizontally so that, although the depth remains the same 10 point size, the width becomes expanded or spread out. Command Shift [, on the other hand, condenses type, particularly useful within tight tabular matter where the desired size is needed for legibility but that size will not fit within a particular defined measure. Condensed type, like Helvetica Condensed (or Helvetica Narrow) squeezes the type characters closer together while still maintaining the original point size.

Again, these functions, until XPress came on the scene, were only available on very expensive typesetting equipment using digitized fonts. (The word "digitized" being used here is not to be confused with digitized art or graphics by any stretch of the imagination.)

A brief look at the menu options in XPress does not reveal the many hidden features of this program. For instance, if you were to look at the line menu or the box menu, one may think at first that this is all there is to choose from these menus, as is the case in RSG or PM. Not true of XPress. Any line thickness can be defined in the Line Specification box when lines are selected. Additionally, there are over 20 frame options available. What is unique with these frames is the ability to designate almost any size for the thickness of some of these frames, with the minimum size on most of them 3 points recommended.

The Frame Editor, something new, is the equivalent of another application residing within XPress. Thus, the Frame Editor must reside on the same disk or in the same folder as the program. The Frame Editor allows one to both create and edit frames within a document. The algorithmic frames, however, cannot be edited. These frames can then be used to set off either textual or graphic matter for a more pleasing page appearance.

The Picture Boxes are like static camera lenses or mirrors through which the user uses the hand to position a graphic. If the graphic is too large or too small, the frame itself can be enlarged or reduced by clicking outside of it and moving its handle with the finger-pointing tool that appears when on the handle itself. Very slick designing went into this program.

Graphics pictures, especially bit-mapped pictures which have previously been the ruination of many an otherwise fine application, seem to snap into place AND print exactly where they were placed in XPress—i.e., both on the screen and at print-out. This, as opposed to all the MacPublisher and RSG program versions that seemed to have great difficulty resolving placement of graphics, where the screen and modify box say one thing, but the LaserWriter printout gives you something quite different and unwanted, and goes cross-eyed on you. (PageMaker 1.2 and 2.0 seem fairly accurate in their handling of graphics, with the 2.0 version's ability to scale into snap-to increments for the best LaserWriter printout of graphics.)

contd.

To set up a template in PageMaker 1.2, one had to leave a "kernel" (at least one character of "fake" type) to tell it what point size and style the text is to be in a particular place on the template. Once the desired text is typed into this block, one would have to go back and delete said "kernel" character if one remembers to do so. XPress handles templates in an entirely different manner: text specifications remain within text boxes as a part of that text box, and no "fake" characters or "kernels" are needed. This may have been one reason Quark went the route of Boxes rather than the open blinds of PageMaker. The boxes allow for greater manipulation, linking and definition.

Another reason for Text Boxes in XPress is the numbering of linked chains in stories or articles when there is more than one article in a publication. This allows for easy identification of which text boxes belong to which story. Commands 4, 3, and 2 remember "continued on" and "continued from" page numbers automatically. Pages themselves can be renumbered in XPress, and the creation of Default pages allows the user to set up formats for page appearance or for particular publications in advance.

A word of warning: do not blink while placing text into XPress! The text flow and graphics runarounds are THAT fast! It is truly difficult to keep an eye on all that is happening when text is placed onto a page. In other cases, a text block can occur on page one and be linked to another block on page 5, 7 and 9, in whatever size or shape the text block is defined (or the graphics placed within that box), and often the user will not see this happen.

CLICK CLICK

Within a text block, one click places the insertion bar into a static position. Most are familiar with this operation. Two clicks selects the whole word; 3 clicks selects the whole line; 4 clicks selects the whole paragraph, and 5 clicks selects the whole story, no matter where that story flows from page to page, or on the same page.

Our friends at CACI Graphics Services in Fairfax, VA who ran their ad on page 57 of the May '87 issue of the WAP Journal would have had much better word spacing within their type had they used Quark XPress with their Allied Linotron 300 output. Both the Linotron salesman and I noticed this ad and compared the samples Allied produced with Quark XPress and their Linotronic output with this particular ad. There was no comparison. XPress generated far superior output or type generation, and it's pretty certain Dick will show CACI samples if they ask him. The ad appears to have been produced from either RSG or PM 1.2, with particular reference to the bold body text and the extreme white spacing around the words. Where were the hyphens to tighten the word spacing on these lines? Or in this instance, why not use ragged right copy. Either would have solved the problem and helped to make their ad more legible and eye-pleasing.

Quark XPress combines the best of all the page layout programs, fixes and adjusts most of the peculiarities in these programs, synthesizes them, makes the operation as "ergonomic" to the user as possible, adds super refinements and touches that make this not only an extremely fast application but one that is custom designed and custom-g geared, if you will, for precision operation and control of both graphics and text. Slick, clean, and professional are the words best describing it.

The developers under the team leadership of Tim Gill certainly made an art form out of horizontal and vertical spacing. And they certainly know the Macintosh and typography: no question about it. The manual and its tutorials are very clear and simple, with the suggestions made at the beginning of this review to include additional information about importing and exporting files, as well as some expansion on PostScript abilities. All praise and all encouragement must go toward their efforts along with the hope that with such a foundation application as XPress, new developments will be addressed by them as these developments occur in the world of the Macintosh for upgrades and further refinements toward that quality and craftsmanship we all seek, and they so well understood. Quark XPress is a powerful, major find and major contribution to the Macintosh.

The JustText approach to page layout programming was, of course, typographical, combined with PostScript abilities—an attempt to define the Mac as a typesetting input terminal. XPress is the culmination of this program, without the complex parameter coding typesetters are used to, interfaced with the simplicity and user friendliness of the Macintosh. The developers of XPress, therefore, successfully bypassed these structured typesetting codes (with which they were obviously familiar) by addressing the power and capabilities of the Macintosh itself. No mean feat.

Graphics designers, publishers, art directors, and typographers all across the country are among those who will love this program because they will immediately see it for what it is—the tool of choice for excellence in production. And for desktop publishers, the office or individual environment, and general Mac enthusiast, I would heartily recommend saving one's money to buy this gem: it is a major advance in page design and publications production. It would be even nicer if the price came down and the copy protection were removed—at least it is protected in the version I have, allowing only a numbered amount of installations and removals.

(Jay Rohr has a private practice as a Macintosh consultant and tutor, and has set up Mac systems in newspaper offices and graphics studios for 2 years. His specialty is graphics, commercial art and typography.) ☺

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	Excelling on Your Mac
	Part 14
	by David Morganstein

John had an interesting problem you might encounter. He had constructed a pair of linked worksheets. The first sheet contained the detail and the second sheet the aggregate values. Several of the cells in the aggregate sheet were connected to the detail sheet. While his problem arose when he inserted a row (or column) in the detail sheet, let's first see how the linking works and then look at a solution.

In the following screen shot you see a piece of the detail sheet on the left (invoice #3345) and the aggregate sheet on the right. We'll just link in one value, the total amount of the invoice. We obtain the total of the prices times the quantities as we showed last month, using an array function. The price column has been named "Price" and the quantity column named "Quantity"—aren't mnemonics wonderful? The total dollars appear as $\{=SUM(PRICE*QUANTITY)\}$, an array function. (Remember to hold down the command key when entering array functions. If the curly braces do not appear, the formula was not entered properly.)

B9	$\{=SUM(Price*Quantity)\}$	
----	----------------------------	--

Detail			Aggregate		
	A	B		A	B
1	Inv. #	3345	1		
2			2	Inv. #	Total \$'s
3	Price	Quantity	3	3345	\$4,543.75
4	\$12.50	150	4		
5	\$3.50	200	5		
6	\$4.25	325	6		
7	\$11.75	50	7		
8			8		
9	Total	\$4,543.75	9		
10			10		
11			11		

On to the Aggregate sheet. To link cell B9 in the detail sheet to cell B3 in the aggregate sheet, select B3 in the aggregate sheet and type an equal sign. Then select the detail sheet and click on cell B9. Here you see the result. When you clicked in cell B9 of the detail sheet, Excel entered its name in the formula bar. Cell B3 in the aggregate sheet has the formula $\{=Detail!B9\}$. As B9 of Detail changes, B3 of Aggregate will follow along.

B3	$\{=Detail!B9\}$	
----	------------------	--

Detail			Aggregate		
	A	B		A	B
1	Inv. #	3345	1		
2			2	Inv. #	Total \$'s
3	Price	Quantity	3	3345	\$4,543.75
4	\$12.50	150	4		

This works for now, but only so long as no rows are added above B9 or columns entered to the left of it. If rows or columns are entered then the absolute name $\$B\9 will not change and the formula $\{=Detail!\$B\$9\}$ will point to the wrong cell in Detail. In

the shot below, a row was entered above row three. The total now appears in cell B10 of the detail while the aggregate sheet still refers to $\$B\9 . This is known as a "gotcha".

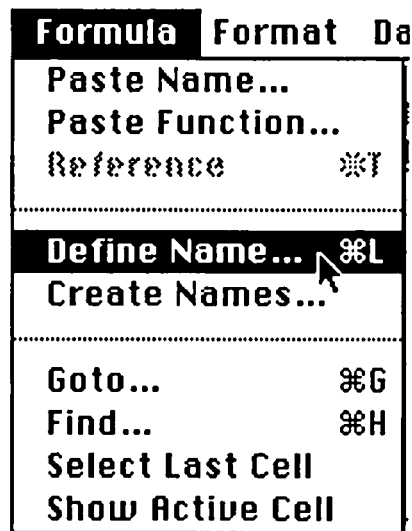
B3	$\{=Detail!\$B\$9\}$	
----	----------------------	--

Detail			Aggregate		
	A	B		A	B
1	Inv. #	3345	1		
2			2	Inv. #	Total \$'s
3			3	3345	\$0.00
4	Price	Quantity	4		
5	\$12.50	150	5		
6	\$3.50	200	6		
7	\$4.25	325	7		
8	\$11.75	50	8		
9			9		
10	Total	\$4,543.75	10		

See what I mean? "Well," you might think, "how about changing the reference $\$B\9 to be relative?" (that is, "B9"). Generally, Excel is good at adjusting relative references when rows or columns are added or deleted. Sounds like a good idea, but it doesn't work. John and I tried this. Unfortunately, relative references to a second sheet are not updated when the referenced cell is displaced. **Exercise for the Reader: Try it yourself!** Is there a way around this quandary? But of course!

The answer in this case, unlike so many others, has nothing to do with the Option key. The same solution we found for keeping charts straight works here as well. You may recall a discussion some months back about the way charts are inadvertently destroyed when rows and columns are added above or to the left of referenced cells. We solved that problem by naming the cells used to create the chart. We can solve this problem the same way. Instead of using Excel's description of $\{=Detail!\$B\$9\}$, we'll name the Total cell (How about calling it something like, oh, say, "Total"?) and use the name as a reference in the Aggregate sheet.

To name a cell, select it and choose Define Name under the Formula menu.



If the cell you choose had a label to the left of it or above it, Excel will suggest that as the name for the selected cell. As you

contd. on pg 73

MUSEMENTS

by Fred Seelig

Brooding, that's what I've been doing. Brooding, brooding. A lot of sullen looks given strangers. Fingertips drumming upon temples.

Let me give you an idea of what the month was like: A dear friend, well-intentioned, mentions to me in rhapsodic terms, oh, you must see *A Room With A View*. So, fine, I trudge into Erol's and get it for the evening. I hate it. Boring flick. But, she says, that film won the Oscar or Emmy or whatever, and have you no taste? Well, for someone who thinks that *Rambo* was a little on the wordy side...

Then, June 18, 11:30 p.m., a pop, a hiss, and the video picture curls up and dies. I frantically save all documents and turn off the hard disk before the Mac dies gasping in my arms. Take it in to Clinton Computers in Tyson's. I should have known it was going to be expensive. The vultures were hanging around, circling my car, leering at me.

Now here I sit this evening of July 2, 1987. I crank out this column and settle back to watch David Letterman. But there is no David Letterman, even though it's Thursday evening, because some idiot programmer preempts Dave, Paul, Larry 'Bud' Melman, The Fugitive Guy, and all the cats in the band for Women's Wimbledon tennis. I can hardly stand it. Martina's gonna win it again, so where's the suspense? I wanted to watch Viewer Mail. Oh, it's been a terrible month.

Mea Culpa

First off, I've made a whole lot of errors in past Musement columns. Most of them can be passed off as egregious misspellings. Some have not been so easy to ignore. One was the Case of the Missing Fonts.

The Missing Icon Font

In WAP's April 1987 Journal, I said that the Icon font was found on WAP diskette # 23. Well, it is on disk #23, but it seems only my copy has it on there. This was a copy of a friend's disk (and you know who you are, darling). So lots of people call nice Gena Urban and all of the other nice folks at the WAP offices, demanding disk #23 for the fonts, and they are told that the Icon font isn't on there, and they say, well, Seelig wrote that it was on there, and where is it, and isn't this guy a jerk, and the poor office people hate my guts now, so I try to stay away from the office now in case some telephone crazed disk librarian comes at me with a piano wire garrotte.

MindWrite Review Redux

And then, MindWrite's Susan Raab, a sunny blond Californian, (I guess you might say she's attractive, if you go for gorgeous blond tan California girls—I don't—I like their minds, of course) writes in reply to my Dresden-firebombing of their word processor in the June WAPJ. We had a conversation a few weeks before that, and I discovered that MindWork, or AthenaSoft, or whatever the company's name is, is made up of plain old nice type working folk depending solely on the revenues that MindWrite brings in for shelter, food, clothing... you know, the bare necessities of life.

So then here comes this review that compares MindWrite

with something lower than a snake's belly. Great, now I feel like a schmuck destroying someone's livelihood. Massive guilt feelings created. I wear black all month. I imagine Susan Raab's pretty little blond children of the future looking hungrily out of magazine pages with rice bowls in hand. Won't you help them? Sally Struthers will ask. These are the poor innocent victims of a vicious smear campaign against my mom's software company, perpetrated by some low-life creepoid by the name of FRED SEELIG, letters in 96 point bold italic red letters.

And then, I find out that I didn't send the registration card for MindWrite when I got it last summer, so MindWork & Co. thinks I am your typical average software pirate, when in fact my disk set states that I own Serial No #10001640. (This leads one to believe that I am either the ten-millionth user of MindWrite or the 1640th. The second seems more likely.) But they think I've ripped them off and trashed their software efforts, when in fact only the latter has occurred. I'm sorry, I really am.

Susan Raab was kind enough to send me a disk with the corrected version of MindWrite (seems that early versions had some defects in them...). But now I feel like a double schmuck, since MS Word 3.0 has become the fave word processor. So I send all MindWrite disks back, even the paid-for originals, hoping like crazy to appease my guilty conscience. But it ain't gonna work. Only several years of diligent psychiatric treatment will overcome the tremendous psychic damage done. Suddenly Van Gogh's paintings seem so reasonable. And the ear thing, so right.

The Macintosh SE: Ambivalent Feelings

The Mac SEs aren't bad. Most of the technical problems with earlier Macintoshes have been corrected. Some new ones have been introduced—but in software, an easy thing to fix. So why aren't we ga-ga about the new Macs?

Let's start with the good points. There's a small and quiet fan that blows air right over the power supply. The power supply itself is rated for 100 Watts, in contrast to the suspect Mac Plus power supply that was rated at 65 Watts. The power supply in the SE is thus beefier and runs cooler in one stroke. I didn't like not having air slots on the top of the SE. It ruined the lines of the machine. The slots were not only functional to the cooling of the earlier Macs, they added to the looks of the chassis. In the SE the slots were eliminated. It looked ugly but this was a smart design decision.

Most of us who own earlier Macs are guilty of laying books, notes, etc., on top of the Macs. But that's a no-no, because they cover up slots through which the hot air escapes. As a result heat builds up inside the Mac, and pretty soon it's Hello Mr. Apple Dealer Can You Fix My Power Supply? Eliminating the top slots and inserting a fan caused the cooling to be provided all of the time. Now users can stack stuff on top of their Mac SEs with impunity, since it doesn't interfere with their machine's cooling.

Speed. Boot time is fast. Seconds, not hours. Applications launch with a snap. Reminds me of those Maxell commercials, where the guy is sitting in his chair, in front of the speakers, and

contd.

he turns on the sound and the whole room gets blown away. Save times are fast. The internal hard disk drive is fast. The drive is rugged, too. I've tested it using very tentative bumps and drops while running—no problems whatsoever.

Chooser works great now, and the Control Panel seems to know when an operational Mac is on the AppleTalk net automatically. By contrast, with earlier software it was always a guessing game if the Mac really knew if it was on AppleTalk or not. Chooser works within applications, now.

Adding the slot was smart. Apple said that they wanted to design a board that was going to make the Mac work like an IBM compatible. Har de har har. Apple may have designed such a board, but all of the smart third party vendors (Levco, MacMemory, SuperMac Tech) flushed that idea and proceeded to design what everyone else really wanted: a board that would add a 68020 microprocessor, a 68881 numerical coprocessor, and lots of memory, so it would make the Mac run faster than Tammy Faye's makeup.

On the down side, let's face it, the keyboard is still too small and the keys too close together. The spacebar is designed for people with inhumanly small thumbs. And what's the deal with the Apple key? The Apple key used to be the cloverleaf or command key. Now it's a big key with both an Apple and a cloverleaf logo on it. I guess this is to somehow lure old Apple II users into trying the Mac (Apple II keyboards have an Apple key). Sheesh.

In fact the whole bottom left corner of the keyboard feels totally wrong. I loved having the option and command keys in the lower left corner, because they were both used so much and they were both accessible. Do you know what the keyboard designers put in the lower left corner of the Mac SE keyboard? The Caps Lock key. If that isn't the most singularly useless key on the keyboard I don't know what is. An ESCape key and a big oversized Reset key were added. The manual is clueless about the functions of these keys. The manual is a big help. "Different applications use the Esc/Reset key in different ways. See your applications manual for more information."

The mouse is really horrible. It's too small. It has a short cord that keeps it hanging around the keyboard like a teenager hanging around shopping malls.

The wisdom of having the keyboard cord attached to the back of the Mac SE I is totally inscrutable. Why did they do this? To emulate IBM, which has a similar arrangement?

Software compatibility between the Mac Plus and the SE is pretty good, for the standard business packages like MacWrite, Excel, Word 3, and the Cricket stuff. MacDraw has exhibited some puzzling bugs when printing via AppleTalk to the Laser-Printer. Deja Vu is buggy. Switcher has had problems, although I didn't determine whether it was Switcher or the applications that ran under it. Tempo is buggy. Here's an interesting one: SuperMac Technologies shipped a Dataframe 40XP with Super Spool version 3.1 df. It didn't work with the SE. SuperMac Tech said that the software people knew that 3.1 had problems with the SE's ROMs and that they would send version 3.4, which contained corrections. Three weeks later, they sent version 3.1 again, which still didn't work. Latest I heard, SuperMac was recommending using Finder 5.5, which I know caused some System bombs that version 5.4 didn't.

And there you have it. The good, the bad, and the ugly. The SE is electronically much better than the Mac Plus, but stylistically worse. The software compatibility issue is not resolved, but a shakeout will take a year. I think that it's a darned good business machine. I just don't know if it'll attract the cult following that the Mac and Mac Plus did.

Goodbye Louie

Louis de Broglie died in February. He was one of the giants of modern physics. A French physicist, he speculated, in 1924, that particles of mass would exhibit wave-like properties. (In fact, he submitted this novel idea in his Ph.D. dissertation.) He was proven right, and with one broad sweep his theory unified the understanding of the relationship of mass and energy which Albert Einstein began with his 1906 paper on the quantization of energy levels.

I admired his bold intuitive leap. P. Tipler's *Foundations of Modern Physics* states that "this suggestion was highly speculative; there was no evidence at that time for any wave aspects of electrons." The textbook has a picture of de Broglie sitting behind his desk, finger crutched on his chin, tie askew, wild black hair sticking straight up. He looks amazed that his simple idea caused such a stir. He won the Nobel Prize for theoretical physics in 1929.

In 1906 Einstein speculated that energy waves could be thought of as discrete particles. There were numerous reasons why this should be so, chief among them being Max Planck's discovery of a theoretical explanation of the mysterious black-body radiation frequency distribution a few years earlier. De Broglie reasoned that if waves behaved as particles, then particles could behave as waves, as incredibly condensed electromagnetic waves. This simple reasoning process led directly to such physics oddities as electron diffraction and to such useful instruments as the scanning electromagnetic microscope.

An electron with an energy of 10 electron-volts (or eV in physics parlance) has a de Broglie wavelength of 3.9 Angstroms. Sixty years ago such a distance seemed fantastically small. Today physicists speak calmly of single atom layers on surfaces of crystals, of manipulating atoms within distances of 100 Angstroms or less. With 1 Mbit DRAMs around the corner and 64 MBIT DRAM memory chips envisioned a few years away, suddenly de Broglie wavelengths seem no longer so small. Indeed, our whole semiconductor technology that enables us to compute on Macintoshes today owes its theoretical background to turn-of-the-century physicists such as Louis de Broglie.

And while we're on the subject of physics...

Cryogenics, Schmyogenics

Look, I'm sick of physicists getting all excited about the revolution in high temperature superconductors. It's wasted entirely too much ink in *Science News*, the *New York Times Science* section, and most of the major tabloids that wouldn't know a superconductor even if it bit large chunks out of their ad revenues.

So here's what I'm going to do. As a service to the rest of humanity that is desperately hoping for some peace and quiet and that is hoping never, ever to hear about the 3 a.m. hastily called superconductor conferences in West Nowheresville, N.H., I am issuing the following press release:

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(Vienna, VA.) Seelig Superconductoronics, a privately held R&D firm, has announced a superconductor that will work at room temperature (290 Kelvin) and at astonishingly high current densities. Dr. Frederick von Seelig, the noted high tech physicist, heralds this as the beginning of a new era of electronics, an era of cheap, clean, and humane electrical power. He also hopes Stockholm takes note.

There are a few bugs to be worked out, however. For one thing, the superconductor is expensive, and for another, it doesn't last long.

It is made of a yttrium-gadolinium-lanthanum-niobium-einsteinium alloy that costs \$120 million per ounce and has a half life of 4.2 microseconds.

Nevertheless, prospects are bright. Seelig Super employees hope to milk the discovery for at least a year and get asked to attend three, possibly four conference proceedings. The SDI research office will underwrite all research, attracted as it is to the cost of the exotic material. IPOs begin next week, causing frenzied stockbrokers to dump all their IBM holdings to acquire stock in Seelig Superconductoronics.

It's a good dream, but not a great one. Somehow, I have difficulty believing that researchers would get discouraged reading my press release. I think that those pesky physicists just plain won't go away. They'll keep doing their research at really warm temperatures like -77° Centigrade and get excited about their superconducting rings and then I'll have to read all about it in the next week's issue of the Wall Street Journal.

If you didn't understand one thing about these last few paragraphs, don't worry. You didn't miss a thing.

Microsoft's Word 3.0

I got a copy of MS Word 3.0 earlier today [NOTE: Written some time ago, possibly Before Vanna White] and have been playing with it ever since. It's entrancing. There are so many capabilities built in. Adventure games were never this good. Every level lower reveals more goodies in the Microsoft goodie bag. I love the spelling checker. I love the speed. The numerical keypad can be used in two modes. When you press the CLEAR key (UL of numerical keypad) you see a small N appearing in the upper right hand corner of the screen. The keypad functions in the numerical mode. Pressing CLEAR again takes the N off and allows you to use the keypad as a cursor controller. A super duper turbo cursor. You can select words, or move up or down, or to the end of the line, or to the beginning, or move and select. Or you can move to any of the three previous places that your cursor was, using the Go Back key (zero on the numerical keypad).

If you are a recent Word convert, you'll probably want to reread such recent magazine copies such as MacUser's March 1987 issue containing Word reviews by Sharon Z. Aker and Doug Clapp.

WORD 3.0 Summary Sheet

I have written a five page summary sheet of most of MS Word 3.0's keystroke commands. Persons interested in a copy should send a SASE to Fred Seelig, Mac Consultants, P.O. Box 244,

Vienna, VA. 22180, and I'll send you a copy absolutely free of charge. Such a deal!

Tangent Technology's PC Mac Keyboard

Icon Review is selling Tangent Technology's PC Mac keyboard for the Mac Plus and earlier Macs for \$119. Every writer that is doing some serious word crunching should buy this or a similar keyboard. It's that much better than the Mac Plus keyboard.

Let me give you my first impressions: It's very light. Feels flimsy. IBM keyboard layout, so there's no Option key and no command (cloverleaf) key. Instead, you use the CTRL key as the command key, and the ALT key as the option key. My hands automatically go to the wrong places at first, but after a while you get used to the different layout. This is not an insurmountable problem.

Key feel: mushy and light. You can definitely type faster with the flatter keyboard, but it's not like the IBM keyboard with the nice clicking sound.

Clear	=	/	*
7	8	9	-
4	5	6	+
1	2	3	ENTER
0			

Clear	-	+ /	* /
7 Home	8 ↑	9 PgUp	/
4 ←	5	6 →	
1 End	2 ↓	3 PgDn	ENTER
0 Ins	Del		

Figure 1. The Mac Plus (L) and the Tangent Technologies (R) keypads. Note the rearrangement of the keypads. MS Word 3.0 enthusiasts should note that the keypad is perfect for use with Word. The four symbols in the upper right hand corner are cursor control keys which are always active. The symbols +, *, /, and comma (,) cannot be typed using the numerical keypad keys that are dedicated to be the cursor control keys. You must use the regular keypad equivalent keys for these symbols. MS Word 3 uses both these keys and the 2/4/6/8 keys as cursor control keys.

The numerical operators (+, -, /, *) are arranged differently on the keypad. See Figure 1. Unless you work for Peat, Marwick and Mitchell (the all-Mac accounting firm) and you're so used to the old style keypad you won't miss the rearrangement very much, if at all. The cursor control keys are in the upper right hand corner—much more logical and easily accessible place for them than where they are on the Mac Plus keyboard.

There are three lights on the upper right hand side of the keyboard: Caps Lock, Num Lock, and Scroll Lock. The latter two don't work. This is just plain old lazy design. It would have been nice, for example, to use the Num Lock while using MS Word when you don't know if the numerical keypad is used in the numerical mode or in the cursor control mode. TT says that these lights don't work "as there are no Macintosh equivalents at this time." Bushwah.

The keyboard is Switcher-compatible, sort of. You can switch between applications all right with CTRL-] and CTRL-[. But if you don't have the Always Convert Clipboard option set, then CTRL-ALT-[(which should convert the clipboard between applications) does not work.

contd.

Included for your \$119 is a disk called PC MacKey. It allows you to redefine the keyboard for macro commands.

Select All Varies	F1 A/M	F6 X/F	Cut Find
Copy Group	F2 C/G	F7 V/S	Paste Save
Bold Italic	F3 B/I	F8 P/U	Plain Underscore
New Print	F4 N/P	F9 O/E	Open Eject
Information Close	F5 I/W	F10 D/Q	Duplicate Quit

Figure 2. Function and alt-function keys F1-F10 and their usual definitions. The bottom functions are accessible by pressing down the ALT key simultaneously with the Fkey.

Select All Paragraph...	F1 A/M	F6 X/F	Cut Find
Copy Go To...	F2 C/G	F7 V/S	Paste Save
Styles... Insert Graphics...	F3 B/I	F8 P/U	Print Outlining
New Print	F4 N/P	F9 O/E	Open Footnote...
Insert Graphics... Close	F5 I/W	F10 D/Q	Character... Quit

Figure 3. Function and alt-function keys F1-F10 for MS Word 3.0.

At the right hand side of the Tangent Tech keyboard exist ten function keys. These make it worth the price of the keyboard. In a few quick keystrokes you can edit almost any document quickly and efficiently and with a minimum of contortion of your left hand. No more need to hold down three or four function keys to get the action you want. Function keys automate the mundane portions of the computer: saving files, printing, getting info, grouping (nice for MacDraw), duplicating (MacDraw), and word formatting like bold/italic/underline. I wish that they would have given us the superscript and subscript features on the Fkeys, but that can be easily reprogrammed with Tempo.

The shift keys on the right and the left hand sides are both oversized. That means that you can actually use the right hand shift key. This key is so small on the Mac+ keyboard that it is unusable.

There are raised dashes in the F and J keys to give a good feel for Home typing position. The numerical keypad has a raised dot on the 5 key, the central one. There's a shelf above the keys, ideal for the propping of books and manuals while typing.

Now for the bad news. The PC Mac Key keyboard doesn't fit into a normal carrying case. I have a Mountain Equipment carrying case (Icon Review stocks it) and it can fit a Mac Plus and an HD-20 hard disk in it. But the TT keyboard is about 1 1/2

inches too long for the case. It can, however, be carried snugly underneath the carrying straps with very little overhang.

Bad news #2. This one's also related to carrying cases. The connecting cord can unplug from the Mac, but it doesn't unplug from the TT keyboard.

Bad news #3. The TT keyboard doesn't work with the new SEs because of their stupid Apple Desktop Bus and those connectors that they use. Grrrr. This is no fault of the keyboard makers. Rather, this is Apple changing standards again. Some serious headbanging should occur over in Cupertino.

Aesthetically speaking the keyboard is light, the keys don't have as good a feel as do IBM AT keyboard keys, and the color is not exactly the buff color that the Mac Plus is. Tangent Technologies has a ways to go before its keyboard could be considered to be perfected for the Mac environment. But the keyboard does help you type fast. If you feel the need for speed, you'll consider this keyboard. If you like Word 3 and if you have a Mac Plus then this is the one for you. I am keeping mine. The Mac Plus keyboard is sold.

OS/2 Adventures

Hi! I'm Larry the Liar, er, ah, Lawrence Olivier, yeah. And I'm your IBM Sales Flunkie, er, Sales Support, yeah, that's it. Say, there's been a lot of bad press lately about IBM and MicroSoft releasing their grand operating system, OS/2, sometime in late 1989 (EE Times, June 15, 1987, page 4, "MicroSoft: It'll Take Three Years To Finish Off OS/2"). Well, I'm here to tell you that that's absolutely false! And who should know better than me about falsehoods, eh? Yeah... No, IBM is really going to release OS/2 in four yea..., er, uh, weeks, yeah, that's it! And boy are they going to show Apple a thing or two! Yeah, finally their overprice... er, underpriced PS/2 machines will be able to do the same things as the Mac Two can do! Er, that's more than the Mac II can do! Yeah, that's it, that's the ticket!

Dave Bunnell's Mug Shot

Just got the latest version of MacWorld. Oh, I know... I told everyone not to subscribe, because David Bunnell, MacWorld's publisher is also the publisher of PC World, because MacWorld used to have really out of date stuff (that's changed) and because MacWorld is much more boring than MacUser is. But I have kept on reading it, my love for the Mac overcoming the magazine's obvious deficiencies. The mag's full-color glossies of the Mac II were enough to keep me hooked for about a year.

But I still have a problem with the mag. I can never, ever read the editorial page. I read the Table of Contents. I flip through the middle section looking for some intriguing screen dumps, perhaps a few quickie reviews, perhaps a few techie articles. But if, accidentally, I happen to get to the front of the magazine and flip to the wrong page... Arrrrrrggggghhhhhh! It's him! Sitting there, with cheek resting too smugly on one fist, smiling that awful smile, month after month, front tooth asnaggle. Oh, I can't stand it! Why can't David Bunnell have a kind of half-shadow photo of himself, looking mysterious and worldly? Why must his expression be that In-Your-Face look of his?

Am I the only one with this problem? Can other readers seriously read his monthly blurb and be able to ignore his photo?

His editorials are another thing I have an aversion to. He's always dropping names. The man doesn't know the meaning of shame. "I was just talking to Bill Gates the other day..." and

contd.

"John Sculley called me for a recommendation for a great sushi bar and I said hey Jack, can't go wrong with Mushy Sushy..." I mean, let's take a reality break here, Dave-O. People aren't calling you because you're a nice guy. You're the editor of the third most important Mac mag around (second is MacUser). They're kissing your gluteus maximally so you won't shaft their product in some future issue.

The Mac SE Keyboard

Have noticed that the SE's keyboard will unexpectedly quit working. The only proven method of fixing this problem, short of turning off the machine, is to disconnect the keyboard and reconnect it. Reason for this is that the problem seems to be bus-associated. The wonderful-sounding Apple Desktop Bus that was developed for the SE turns out to have some bugs in it. By disconnecting the keyboard you are turning off the power to the keyboard, and by reconnecting it you are reinitializing the keyboard into the network.

International Datawares

International Datawares sounds like a shell corporation that was formed to run arms down to South America, but these folks are really legit. They give us Diskette Gazette every month absolutely free of charge. They just celebrated their first year anniversary this last month. This outfit is a genuine pleasure to work with. Here's a hero story.

I ordered two copies of FileMaker Plus, the Macintosh Bible, a few boxes of disks (Sony, DSDD: 1 box of ten for \$15.50!), an ImageWriter ribbon (\$3.90) and a few other odds & ends. ID sends a box, but only one copy of FileMaker Plus. I call out there right away on their 800 number. They say, hmmm, if the invoice says we shipped two we probably did. What was the weight of the package? I tell them, and they get apologetic and say, oops, we put together a package here with your things, and we did slight you a FileMaker Plus package. So they UPS another package out right away. The invoice says "6/18/87 - CUSTOMER RECEIVED ONLY ONE FILEMAKER PLUS, VERIFIED BY WEIGHT; SEND OUT ASAP! MR. SEELIG, WE APOLOGIZE FOR THIS INCONVENIENCE./DD." I dunno, it sort of warms the cockles of my heart knowing that there are still companies out there that work the way they're supposed to. And I haven't heard that kind of story about any IBM-type vendors lately.

Diskette Gazette, International Datawares, Inc., 2278 Trade Zone Blvd., San Jose, CA 95131.

Mac II Garners Rave Reviews!

InfoWorld gives the Macintosh II a 9.0 in its June 8, 1987 issue. In this issue it also reviews PageMaker 2.0. PM2 gets an 8.0. The 9.0 is an outstanding score for the always finicky reviewers. The 8.0 is a pretty good one, considering it's Mac software. There seems to be a bias toward MS-DOS software in the review process of the InfoWorld panel, but that's the grain of salt that you take when you read their reviews. The Mac II came away remarkably unscathed.

I had a chance to play with a Mac II at the Tyson's Corner Clinton Computer and found it to be fast and solid feeling. I thought that the next computer would be an SE, but now it's gonna be the II. Dave Winer, of Living VideoText fame, was absolutely right: it is a lust machine. You don't have the money, you can't afford it, and suddenly, it's Las Vegas feeling again,

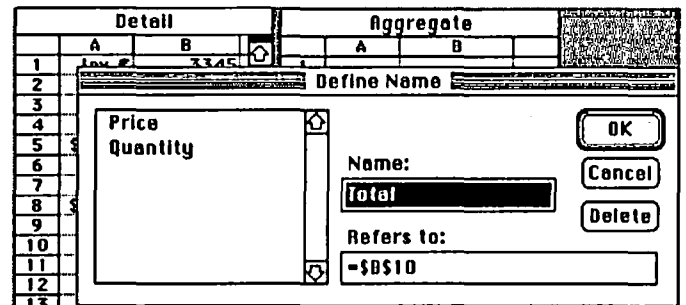
and you've just gotten that third mortgage on your house and kids to buy it.

Fred Seelig would like to introduce legislature to the 101st Congress banning the use of the letters S, T, R, L, N, and E on all future TV game shows. Actually, he would like to introduce legislature restricting the use of the letters I, B, and M, but thinks that a snowball's chance in hell is better than his.

Mr. Seelig is the president of Mac Consultants, a company dedicated to helping small business users utilize their Macintoshes more effectively.

Excelling contd. from pg 68

can see below, Excel suggests "Total" for the name of cell \$B\$10. You need only click ok and the cell will be named "Total". All that remains is to change the reference in the Aggregate sheet from "=Detail!\$B\$9" to "=Detail!Total". Now when a row is inserted above "Total" or a column is inserted to the left of "Total", the Aggregate sheet will continue to reference the correct cell regardless of its row or column. Excel updates references to named cells as the size of the sheet changes. What is more important, John can remain another happy Excel user! (And so can you...)



Undocumented Features. There seems to be a new "feature" in V1.04. On the MacPlus and the 512E using Sys4.1/Finder5.5, Fkeys no longer work! They work fine on the SE using the latest system/finder, but not the 128K ROM machines. (I haven't tried this with older 64K ROM Macs.) Please let me know if you find this to be the case. I have////// tried three different 128K ROM Macs and I can't use command-shift 1 or 2 to eject disks, command-shift 3 or 4 to make screen shots or use other Fkeys I have installed. Fortunately, the desk accessory Camera which takes screen shots after a prescribed time period continues to work, or else I couldn't have prepared the accompanying graphics for this article!

Improvements. What improvements would you like to see in Excel? I have sent a wish list to Microsoft with the following thoughts but would appreciate your input as well for a second list. (I can tell you this, they are listening!!)

- Use memory beyond one Meg.
- Multiple fonts and font sizes
- User specified delimiters for import/export of files (for upload and download to mainframe)
- Dynamic linkage of titles to spreadsheet
- Better macro support for charts
- Multiple charts per page
- Automatically executing macros (load and go)

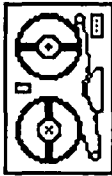
Enjoy!

DEVELOPER'S VIEW...

9 Track SCSI Tape Drive, 68020 Accelerators - Radius vs Levco

by Jim Lanford

Qualstar 9 Track SCSI Tape Drive.



One of our customers sent us a 9 track reel of tape containing some beautiful color graphics images. Each of the pictures has a resolution of 512 by 386 with the color information stored in 32 bits per pixel. Our task was to convert the images to Mac II color PICT format.

The first problem was how to get these images from the tape to the Mac II. Since the Mac II was announced, we have received a number of requests to move data via a 9 track tape to the Mac II. During our market research, we discovered the Qualstar Model 1054 9 Track SCSI Tape Drive. With this tape drive, we were able to move the images and then successfully convert them to Mac II color PICT format. We are still taken aback when we cut and paste full color (256 colors) into and out of the scrapbook.

The Qualstar uses standard 10 1/2" reels (1/2" tape). It reads and writes standard 1600/3200 BPI tapes with any block size up to 64K. Most ANSI data interchange tapes are written at 1600 BPI so this tape drive seemed perfect. It is a very nice drive which comes ready to hook up to any Macintosh with a SCSI port.

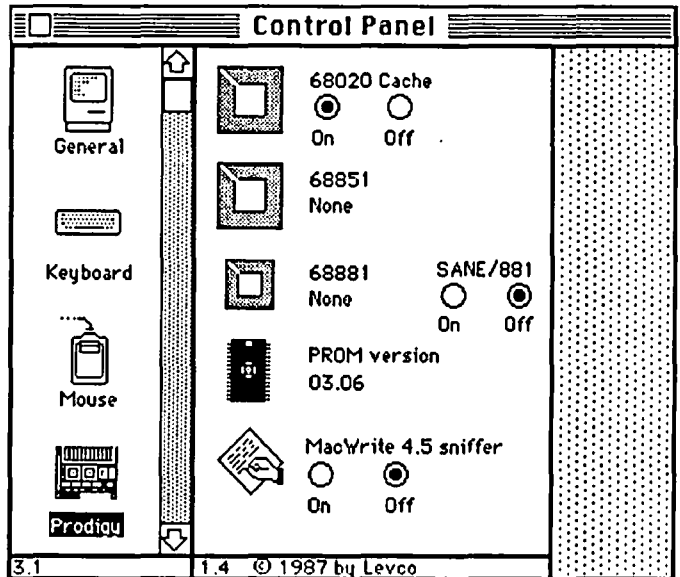
Included with the drive is a SCSI cable, Transport Manual, SCSI interface Manual (only needed if you want to write your own driver) and tape utility software with its manual. The software follows the full Macintosh user interface. You just need to "know your tape". That is: what kind of data are on your tape, block length, delimiters etc. These settings are entered into the tape utility and may be saved as configuration files. This allows each of your different tapes to have the settings entered once and loaded from disk as needed. The utility also contains a tape block dump feature which is useful for determining the format of tapes you are uncertain about. This feature is not for novice users.

The tape drive is small enough to sit on a desk beside your Mac. (W: 12.25" H: 21.50" D: 89.25") The drive mechanism uses a microprocessor controller. Its weight is only 39 pounds in the shipping box. This allows the drive to be shipped UPS Red or Federal express to those of you who want to buy one and want it the next day. Qualstar quotes immediate delivery. We've been so pleased with the performance of this tape drive that we will be marketing it as an option with our system.

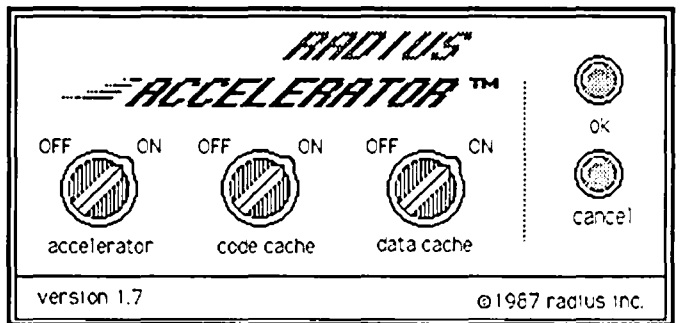
Qualstar has been selling a PC version of this drive for several years and has several thousand installed to date. The list price of the SCSI version of the drive is \$3995 plus shipping. It is probably a safe assumption that not enough WAP members would need a drive to warrant a group buy. Qualstar has agreed to give \$200 off list to WAP members who want one. When you call, ask for Barry and give him your WAP number. Qualstar (818) 882-5822.

68020 Accelerators: Radius vs Levco.

Micro Dynamics has been programming the 68020 for 6 months before Levco first shipped their Prodigy 4. Our 68020 did not run Macintosh software, but did have a 16 MegHz 68020, 68881, 2 Meg RAM, 4 serial ports, SCSI port, Parallel port and timer. We paid \$2000 for our GMX-20. When the Levco Prodigy 4 came out with about the same specifications except it ran inside the Mac, we were interested, except for the \$8000 price tag. When the Levco Prodigy SE came out for \$2000 we bought one. The price is now about \$1550.



Dump of the Levco control panel



Approximation of Radius control panel

The Radius Accelerator was just released for \$1000. We bought one of the first ones. Burl Smith, the original Macintosh hardware engineer, designed the hardware, and Andy Hertzfield wrote the firmware. So now Micro Dynamics has two Macintosh IIs, and two 68020 Accelerator cards. How do they compare? Bill Hole (a WAP member and a member of our software team) ran the following benchmarks. Benchmarks are only partial indicators of performance and should not be taken as absolute comparisons.

contd.

	A	B	C	D	E	F	G
1					SE/Radius		
2		Mac Plus	Mac SE	SE/Prodigy	Accelerator	Mac II	
3	Compile MARS (1)	0:09:23	0:08:03	0:02:35	0:02:35	0:02:31	
4	Empty Loop (2)	0:01:18	0:01:02	0:00:17	0:00:15	0:00:17	
5	Sieve (3)	0:02:35	0:02:06	0:00:40	0:00:32	0:00:40	
6	Byte Sieve (4)	0:00:57	0:00:46	0:00:11	0:00:10	0:00:12	
7	Byte Sort (5)	0:01:27	0:01:12	0:00:23	0:00:19	0:00:19	
8	Byte Sort (6)	0:01:40	0:01:24	0:00:27	0:00:25	0:00:28	
9	Sine Calc (7)	0:05:57	0:06:01	0:02:24	0:02:11	0:02:10	
10	Sombrero (8)	0:31:54	0:32:07	0:12:39	0:11:41	0:15:46	
11							
12	1	Compile MARS Retrieve					
13	2	Empty Loop in MacForth Plus (10,000,000 iterations)					
14	3	Sieve in MacForth Plus (100 iterations)					
15	4	Byte Sieve in Lightspeed C (100 iterations) (timed with watch)					
16	5	Byte Sort in Lightspeed C (100 iterations without print) (timed with watch)					
17	6	Byte Sort in Lightspeed C (100 iterations with print) (timed with watch)					
18	7	Sine Calculation (25,000 iterations) (Apple MC68881 Demo Program v1.3)					
19	8	Sombrero Graph (Apple MC68881 Demo Program v1.3)					

Bill Hole's remarks: We ran only two of the Byte benchmarks: the sort and the sieve. The sort was run twice, once with Byte's print statement included which indicates the progress of the benchmark, and once without. The program listing published in Byte includes this print statement, but the results included with it are not consistent with other results we obtained.

Our results on the sieve for our three 68020 machines were slightly faster than Byte's results, whereas our results for the sort were slower if the print statement was included and almost identical to Byte's when the print was deleted. This leads me to believe that Byte did not use the print statement, but I don't know for sure.

Our results for the SE are significantly faster than those obtained by Byte. Could Lightspeed C be that much faster on a plain 68000 than Consulair C? The reports I have heard indicate that they are comparable in execution speed. I'm suspicious of Byte's results for the SE.

Whereas Byte used the Consulair C compiler v5.01 and the Consulair 68020/68881 compiler, we used Lightspeed C for these benchmarks.

Jim again: We will send a copy of this article to both Radius and Levco. If they (or any of you) have some benchmarks which will show some strength of their cards, we will run them and give more results here next time.

One feature we enjoy about the Radius Accelerator, that we wish the Levco also had, is the ability to turn the Accelerator off so that the Macintosh runs in native 68000 mode. This is useful for running software which is not 68020 compatible or uses software timing loops. We use it for software testing. The main thing which can trip software developed on a 68020 is that odd address word boundaries bomb on a standard 68000 (they are legal on the 68020).

MacWrite runs on the Prodigy and Radius with no modifications. To run MacWrite on the Mac II, you must put an INIT resource file called WriteFix in the System Folder. I am using MacWrite on the Mac II to write this article.

Which accelerator card is for you? Cards other than the Levco and Radius have reliability and compatibility problems with many programs. Programs which use AppleTalk break many of the available Accelerator cards. The Levco and Radius cards are both excellent cards. If cost is the issue the Radius is the clear choice. If you will need more than 4 Meg RAM, the ability of the Prodigy SE to expand to 32 Meg RAM might appeal to you. Our bench marks suggest that the performance of the

Mac II, Levco and Radius are about equal. Considering the \$550 price difference, the ability to turn off the card, and the fact it will run with the the Radius Full Page Display, we will be buying several more Radius Accelerator cards.

Radius (408)434-1010; Levco (619)457-2011.

Lots of Ram.

If you really need RAM, remember that the Mac II will expand to 2 Giga-bytes. Today the only Nu-BUS RAM card I am aware of is the National Semiconductor 16 Meg card. The video card uses one slot. This leaves room for 5 RAM cards, giving 80 Meg RAM in the Mac II Nu-BUS. The National cards cost \$7,000 each. Five cards will cost \$35,000. This makes \$20,000 for a 2 Giga-byte WORM drive seem more reasonable. All of this will be getting cheaper, but if you need it today, it is nice to know it is available.

Call for Color Images.

If anyone knows of a source of public domain color image data on 9 track tape, please call us at Micro Dynamics (301)589-6300. For those of you getting your Mac IIs and are planning to work with color, our experience has shown you will need at least 40 Mega-bytes of disk and at least 4 Mega-bytes of RAM. Both of ours have 2 Megs of RAM and 20 Meg hard disks. This configuration was fine until we started working with color.

Misc.

The SONY Multi-Scan monitor (1302) monitor we use on our Mac II does have a slight (but acceptable) inward bow on the left and right sides of the screen. If you try to hook up one yourself be sure that you use a shielded cable or you will have interference and an unacceptable picture. SONY has figured out that there is a market for their monitors and they are offering a Mac II cable for their Monitor.

Some of you have called to ask about converting the 5 Mega-byte Techmar to SCSI. We have only been able to successfully format the 10 Mega-byte drive that came with the Techmar. We have also pull out a 5 Mega-byte drive and successfully replaced it with a 40 Mega-byte drive using the Adaptec 4000a SCSI controller card.

Jim Lanford is the architect of MacLabeler™, Micro Dynamics MARS™, PostHaste™, and other software for the Macintosh II. He has implemented ground stations for Spartan I and other real-time 68020-based testing systems for various satellites. Jim is president of Micro Dynamics, Ltd., the largest Macintosh software company in the DC area.

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Prodigy Prime	\$1615	Mac Plus, 68020, 1 Meg Ram fan, pwr supply
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	\$425	Additional 1 Meg Ram
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Includes 15% Wap Discount **Dave Ferris 202-332-9109**

Softviews by David Morganstein



APL*PLUS. (STSC, Rockville, MD) This is going to be a unique review. With other application reviews I've prepared, the product has been something you the reader could imagine needing. Perhaps, a word processor, or a hard disk utility, maybe a graphics package. Since this review describes a computer language, I have to take two steps. First, for the many people who don't know what the APL language is, I've got to explain it. Second, having convinced you why APL is a unique and special computer language worth knowing about, I've got to assess how well STSC has packaged APL for the Mac.

APL (A Programming Language) was not the first computer language I encountered. But compared to FORTRAN or Basic it's a dream. It can do in a single line something that most other languages require reams of code to perform. It supports variables which are multi-dimensional arrays. You don't even have to DIMension these arrays before using them. Their shape can be changed from one point in the program to another. You can do massive numbers of mathematical operations with a just a couple of symbols. While my use of APL has always been limited to scientific number-crunching applications, as you will see in some of the following examples, there are virtually no business problems which it can not handle. It offers a wide variety of string handling functions.

Given this glowing overview, why is it you have never heard of APL before? I believe the answer to this very understandable question is that the price for APL's power is complexity. It has many, many powerful operators which must be studied to be understood and which must be understood to use. To enter these operators at the keyboard requires the use of special symbols. Standard teletypes on mainframes could not generate these special symbols. Terminals would have to be equipped with unique character generator ROMs to provide for the display of these unique symbols. However, the Mac is an ideal host for APL since it has no problem displaying its unique fonts.

Let me show you a few examples of APL's power. Let's begin with computing a simple mean, that is, the sum of a set of values divided by the number of values. In basic you would have to DIMension an array to hold the values and then you would write a loop to add them up. Finally, you would divide the sum by the total number. For example,

```
DIM X(100)
REMARK enter the data into the X-array somehow
SUM=0
FOR I= 1 TO 100
SUM=SUM + X(I)
NEXT I
PRINT SUM/N
```

In APL you can accomplish this with:

```
+/X+rX
```

A lot easier, don't you agree? As an aside, the rX means the number of items in X (actually the rank of X, which in this case is a vector of some length with rank equal to the number of items). The +/ says add up the elements of the array that follows.

Among APL's many operators are those which take the inverse of a matrix, which multiply two arrays together or which deal out random numbers. Each of these complex operations is accomplished with only a few symbols. Much of APL is designed in such a way that the programming construct of a loop (DO loop, FOR NEXT loop, DO WHILE, etc) are unnecessary. It is rare to see an index in an APL program. In most cases, numerical operations which would require many lines of code containing loops and indices can be done in a just a few operations using APL.

Imagine writing a program that prints out a calendar for a specific month of a specific year. Admittedly, the logic behind such a program is not easy to see. But you will agree that you probably can't solve such a problem in Basic, Pascal or C in just a couple of lines. How about this:

```
▽ Q+CALENDAR M;DIO;T
[1] aPCALENDAR mm yy -- Print calendar for specified month and year
[2] DERROR <2*ρ,M>'LENGTH ERROR'
[3] DIO+1 ◊ T+M+M[ρM],1 ◊ M+1◊3+M
[4] DERROR<21033≥ 0 12 ΔM[3 1]>'NOT BEFORE OCT 1752'
[5] Q+100|M[1 3]+ 1 0 +◊ 0 12 τ^3+ 0 12 ΔM[3 1]>[2]
[6] Q+7|M[2]+Q+(1^0.2+2.6×M[1])+(1Q+4)-f1.75×M[3]+100
[7] M<T[2]◊ 4 6 9 11>+T[2]=2>×3--/0= 4 100 400 4000 |1ρT
[8] Q+'BIB' DINT 6 7 ρ42+Qρ0),τ31-M
[9] Q+' SUN MON TUES WED THUR FRI SAT',[1]Q
[10] M+'JANUARY FEBRUARY MARCH APRIL MAY
[11] M+M,'JUNE JULY AUGUST SEPTEMBER OCTOBER
[12] M<(12 9 ρM,'NOVEMBER DECEMBER '>T[2];|
[13] M<M' '>+M ◊ M+M,τT[1] ◊ M<(2+1(35-ρM)+2)ρ' ')M
[14] Q+' ',[1](35+M),[1]Q
```

Now, I'll be the first to admit that this program is not transparent. It takes quite an investment to learn the APL language. It takes a while to see how to use matrix operations to solve problems. The result though is sheer beauty. The language is compact and the APL environment quite supportive to the programmer. Later I'll say a bit about STSC's efforts to make APL work on the Mac. Just for your interest, here is what you get when you say CALENDAR 3 1987, using the above function to obtain a display of the month of March, 1987:

```
MARCH 1987
SUN MON TUES WED THUR FRI SAT
  1  2  3  4  5  6  7
  8  9 10 11 12 13 14
 15 16 17 18 19 20 21
 22 23 24 25 26 27 28
 29 30 31
```

contd.

APL is an interpreter. It is not as fast as running a compiled program. However, a lot of programming can be done in very little time. For many of us writing programs to solve a single problem, it is the development time, not the running time that matters.

When you start APL, you are in a "clear workspace". This workspace can contain programs (denoted functions) and variables. You can save a workspace with the accompanying variables and functions, and reload it tomorrow, picking up where you left off. APL is modular. Each function is created by itself. One function can call another. Variables can be numeric or character. They can be global, that is available at the workspace level, or they can be declared local so that they exist only within a function. Below, I have loaded the workspace STATS into APL. Then I issued the command ")fns" to list the functions in the workspace. Lastly the command ")vars" is given to list all the global variables.

```
>LOAD DF40:Languages:APL:STATS
DF40:Languages:APL:STATS SAVED 06/13/87 16:52:14
>fns
DIE      DIE2    MEAN      STDEV
>vars
DATA     I        X        Y        Z
```

To see the value of a variable you just type its name. If it is an array, all the elements will be listed in a neatly formatted order. If the variable is a matrix with several dimensions the elements will appear in an organized display, without the need for formatting commands. Let's make an array containing the numbers 1 to 60 and form it into a three by four by five matrix.

```
x←160
x←3 4 5 ρ x
x
 1  2  3  4  5
 6  7  8  9 10
11 12 13 14 15
16 17 18 19 20

21 22 23 24 25
26 27 28 29 30
31 32 33 34 35
36 37 38 39 40

41 42 43 44 45
46 47 48 49 50
51 52 53 54 55
56 57 58 59 60
```

The first line assigns the number from 1 to 60 to the variable x. The second reshapes x into a 3 by 4 by 5 matrix. The third line says display x. Try doing the same thing in Basic...I'll wait...

STSC Implementation. There are currently three implementations of APL that I am aware of for the Mac. (The others are MacAPL by Leptonic Systems Co. and APL.68000 by Spencer Organization, Inc. You may have seen ads for Porta-APL. This version was purchased by STSC and formed the heart of APL*PLUS.) The STSC version supports all the APL functions. It is well documented, as described below. There are a few changes I would make, which I will describe later. I am sure STSC will consider these and other changes if the demand

is great enough for the APL language on the Mac.

The STSC Mac implementation does not allow you to create stand-alone programs. Your functions can only work within the APL*PLUS environment. I know that stand-alone APL programs are possible since STSC markets STATGRAPHICS, a statistical package written in APL for the MS-DOS world. Presumably a run-time package could be developed for the Mac.

This version does provide graphics capabilities. Things like lines, ovals, arcs, and polygons can be drawn. Unfortunately, there is not a separate graphics window so your drawings overwrite the command screen and scroll off the top. Pen patterns and background patterns can be set. To help learn about graphics, STSC has included several workspaces, DRAW and PLOTDEMO, which contain examples useful to the learner.

To direct output to the printer, you issue a command after which all output goes to the printer. When you want the output to come back to the screen, you issue a different command. Unfortunately, I was not able to get APL*PLUS to work with my Imagewriter. This may be due to the fact that it has a network card and requires the Appletalk Imagewriter driver. It would be nice if these actions could be initiated from a menu.

Many APL programmer's are used to working in a main-frame environment, filled with libraries of routines. These routines might be provided by the system or they may be workspaces created by the user. STSC has built into APL*PLUS a terminal emulator. With this utility, you can log into your favorite APL system and download existing programs. (STSC does not provide such libraries itself.) To support the downloading of files, under the FILE menu you will find Export and Import commands which allow transferring between foreign systems. The terminal emulator is fairly simple and does not offer Xmodem or Kermit protocols which perform error checking of file transfers.

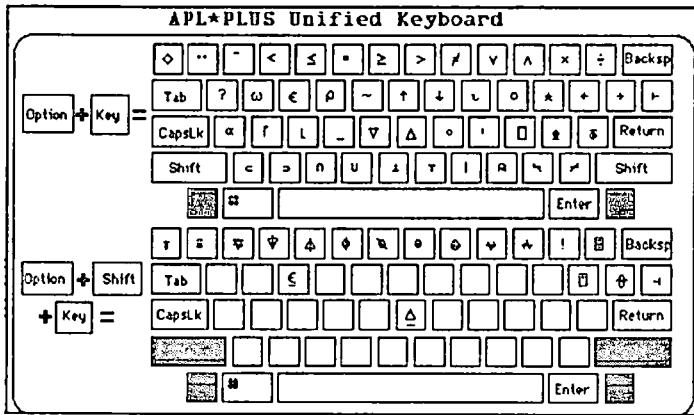
APL*PLUS provides support for the clipboard. Data can put into or taken out of the clipboard using provided functions. (Unfortunately, these functions are not named Copy and Paste...) It also offers Mouse functions, sound and access to standard dialog boxes to obtain the pathnames of data files.

Some knowledgeable programmers will appreciate the support for an interface with machine language programs. Array arguments can be passed to and retrieved from machine language routines.

Documentation. Well STSC hasn't scrimped here. The package comes with three thorough manuals. You get a User's Guide, a Reference Manual and an introduction to the APL language. Each is well-written and professionally published. I should point out that the introductory guide is written for APL in general and contains no specific discussion of its use on the Macintosh. However, the User's Guide and Reference Manual take great pains to describe the use of APL within the Mac environment. STSC also provide gummed labels for sticking on your keyboard to help learn the special keystrokes needed to enter APL functions. One handy item found under the Apple is a picture of the APL keyboard which can also help with remembering the required keystrokes.

STSC does not offer on-line help with the language other than the keyboard map. To be fair, I don't know of any other language package that does. The APL*PLUS package does offer step and

contd.



trace functions to facilitate debugging functions.

Things I Would Change. For one, you can not edit directly on the screen. You can not cut and paste commands that have been given. (STSC has provided for easy editing of functions by issuing an APL symbol followed by the function name, the same approach found in mainframe environments. This takes you into a full-screen editor for changing functions but doesn't help with commands.) Second, the current version does not scroll. There are neither vertical nor horizontal scroll bars. As output is generated, it disappears off the top of the screen. Third, to make entry of special characters easier, I'd like to see STSC add an on-screen clickable keypad. While there may not be a whole lot of room on a nine inch screen, there'd be plenty of space on some of the fancy bigger screens coming our way. Even so, it would make entry of APL symbols much easier. As it is, you have to learn what combination of keystrokes are needed for the myriad of special symbols. Having to rely on calling up the keyboard help screen is not a workable solution. Support for a separate graphics window would be helpful.

Summary. The STSC implementation is not copy-protected. It is about as easy to work in as any APL environment I have used. Some of the suggestions made earlier would improve its ease of use. Since STSC has been marketing APL services for a long time, they knew what they were doing in putting this package together. STSC, 2115 E. Jefferson St., Rockville, MD. 20852. Phone (800) 592-0050. Price \$395.00.

AEC-SIG (Architecture-Engineering-Construction)

Anyone interested in forming an AEC SIG please meet in the cafeteria after the September regular meeting. After the recent AEC Systems conference, held last month, it appears that AEC software developers are finally taking the MAC seriously as a professional tool. If you would like further information, or if you can't make the September meeting, please call Warren Simmons during the day at (703) 836-7766.

PREVENTING BOMBS WITH THE NEW SYSTEM/ FINDER

by David Morganstein

Last month, Tom Warrick discussed the new system and finder and included Apple's suggestions as to who should upgrade to the latest 5.5/4.1 pair. If you are one of the many who received an unqualified yes, you may also be among those for whom MacFlow, MacZap Recover and possible other programs no longer work. Succinctly, when launched, they bomb. If so, you will be able to get many of them working again with the following suggestion. That is, if you are adventuresome enough to try changing bytes in hexadecimal!

Use a sector editor such as the well-known Fedit+, no longer sold as shareware. Locate the hex codes \$02B6 and change them to \$0A78 (the dollar sign signifies that the number is in hex). For Mac Flow, you will find several of these; change them all. For ZAP MFS Recover, use the same approach. However, for Mac Zap HFS Recover, you will find three; change only the first two. I suspect this approach will salvage other programs as well.

The story behind this little fiasco is simple. A long time ago, Apple held sacrosanct the location, \$02B6. It was to be used for the "never to see the light of day" MacBasic (much to the dismay of our talented Rich Norling who wrote an excellent book on the subject. I have an autographed copy which will be worth a fortune some day...but that is another story.) After Apple (caving in to the demand of Microsoft) squashed the project, a number of software developers (like Micro Analyst and Mainstay) chose to use this special location in their program (after all, a memory location is a memory location). Well, woe unto those who listen not to Apple who decided to pull \$02B6 out of hiding with the latest update.

Good Luck!

WORD 3.0 COMMAND SUMMARY

by Tom Warrick

Microsoft Word 3.0 for the Macintosh is the most powerful word processing program now available for the Mac. In order to allow frequent users of Word 3.0 to work more productively, Word has keyboard equivalents to its menu commands, but the power (and complexity) of Word means that it has a *lot* of them. The Word 3.0 command summary, reproduced on the next page, is an effort by our office to bring those keyboard commands to within the reach of people who are new both to Word 3.0 and to the Macintosh itself. If you think it would be useful, please photocopy it. (It would be unthinkable to tear a page out of the WAP Journal!)

contd

Microsoft® Word 3.0 Short Cuts

Documents:

- ⌘ **N** Start a *new* document
- ⌘ **O** *Open* an existing document
- ⌘ **W** *Close* a document window
- ⌘ **S** *Save* a document
- ⌘ **P** *Print* a document
- ⌘ **J** *Repaginate* a document (but if you have problems after pagination, use Shift Repaginate [using the mouse] to force a complete repagination)
- ⌘ **L** *Spell-check* a document (beginning at the insertion point)
- ⌘ **E** Put a *footnote* at the insertion point
- Shift to see footnotes (or hold down
- Option Shift and drag down the black rectangle above the vertical scroll bar)
- ⌘ **S**

Option ⌘ M Select entire document (select headers, footers and footnotes separately)

Display:

- ⌘ **Y** Show ¶, i.e., returns, spaces and tabs
- ⌘ **R** Show *Ruler*

Moving Quickly:

- ⌘ **F** *Find*
- ⌘ **H** *Change* (find then replace)
Special characters in Find and Change:
 - ^**t** Search or replace Tab
 - ^**p** Search or replace Return (“paragraph”)
 - ^**s** Search or replace Required space
- ⌘ **G** *Go* to page #

Use the arrow keys ←→↑↓ and...

Regular	7 <i>Beg. of Line</i>	8 <i>Up Line</i>	9 <i>Up Screen</i>
⌘	<i>Previous Sentence</i>	<i>Previous ¶</i>	<i>Beginning of Doc.</i>
Regular	4 <i>Left 1 Char.</i>	5	6 <i>Right 1 Char.</i>
⌘	<i>Left 1 Word</i>	<i>Top Left of Screen</i>	<i>Right 1 Word</i>
Regular	1 <i>End of Line</i>	2 <i>Down Line</i>	3 <i>Down Screen</i>
⌘	<i>Next Sentence</i>	<i>Next ¶</i>	<i>End of Doc.</i>

Glossary (phrase library):

- ⌘ **K** To add a phrase (before doing ⌘ **K**, copy the phrase itself to the Clipboard)
- ⌘ Backspace (plus the phrase name) to insert a phrase

Edit:

- ⌘ **H** *Cut* selected text to clipboard (**H**=scissors)
- ⌘ **C** *Copy* selected text to clipboard
- ⌘ **U** *Paste* clipboard contents at insertion point (**U**=paste pot)

Special Characters:

- Option Space Required (non-breaking) space
- Option - Optional hyphen
- ⌘ ` Non-breaking hyphen (` is on the same key as ~)
- Shift Enter Insert a page break

Formats-Characters:

- Shift ⌘ **B** *Bold*
- Shift ⌘ **I** *Italic*
- Shift ⌘ **U** *Underline*
(Note: ⌘ **B**, ⌘ **I** and ⌘ **U** turn formats off as well as on.)

- ⌘ > Make selected text the next larger size
- ⌘ < Make selected text the next smaller size
- ⌘ **D** Character formats (detailed)
- ⌘ **B** Select a Style

Formats-Paragraph:

- Shift ⌘ **C** *Center*
- Shift ⌘ **L** *Left* justify
- Shift ⌘ **J** *Flush justify* (justify both left and right margins)
- Shift ⌘ **R** *Right* justify (ragged left margin)
- ⌘ **M** Paragraph formats (detailed)

In Dialog Boxes:

- Return Select the “outlined” option
- Tab Move to next edit field (in the **Open...** and **Save as...** dialog boxes, Tab is the same as pressing the **Drive** button.)
- Y** Select *Yes*
- N** Select *No*
- ⌘ . (**period**) *Cancel* or stop
- C** *Cancel* (sometimes)

(For *Find* and *Change* dialog boxes, see previous column.)

by Thomas S. Warrick ☞

USING RAMSTART 2.0+ WITH THE LASERWRITER

by Jim Reese

Several months ago I purchased a 2M upgrade for my Mac+ and obtained a copy of the RamStart2.0+ software from GENIE. This software creates a RAM disk on the Mac. You can specify the size of the RAM disk you want and the set of files to be automatically copied to the RAM disk after it is created. I quickly became addicted to using an 800K or 1M RAM disk with programs like Word 3.0, MacDraw, FileMaker Plus, and Red Ryder. Best of all, RamStart is free!

Last month my company purchased a LaserWriter. Naturally, I hauled my Mac into work and connected it to the LaserWriter to give the latter a try. I booted up my MacDraw disk which created a RAM disk, copied MacDraw on to it, and started MacDraw. I loaded in a file and tried to print it on the LaserWriter. Utter failure! The window which is supposed to report the progress of the printing operation on the LaserWriter appeared for less than one second and then disappeared. All attempts to print failed.

I decided to try an experiment. I rebooted the disk but did not create a RAM disk, running MacDraw from the diskette instead. This time everything worked fine—the LaserWriter printed as expected. Back to the desktop. I tried to run RamStart to create the RAM disk again, but this time it failed to work. I got an error message instead of the window used to specify the size of the RAM disk. Hmm. Could there be some conflict between the RAM disk software and the LaserWriter software? Some research was in order.

Dan Weston's book *The Complete Book of Macintosh Assembly Programming Volume II* contains a chapter about how to create a RAM disk. (Interestingly enough it's called "RAM Disk +".) He explains that the software for a RAM disk is called a "device driver". Device drivers are used by the Mac operating system to control "devices" like disk drives and printers. A RAM disk driver uses a portion of the Mac's internal memory to store files instead of a physical disk drive. Among other things a device driver must be assigned a number known as a "resource ID number".

A quick perusal of the section of *Inside Macintosh* about device drivers then followed. An interesting figure appears on page 192 of volume II. It describes something called the "unit table". The text beneath the figure states the following:

"Warning: Any new drivers contained in resource files should have resource IDs that don't conflict with the unit numbers of existing drivers—unless you want an existing driver to be replaced."

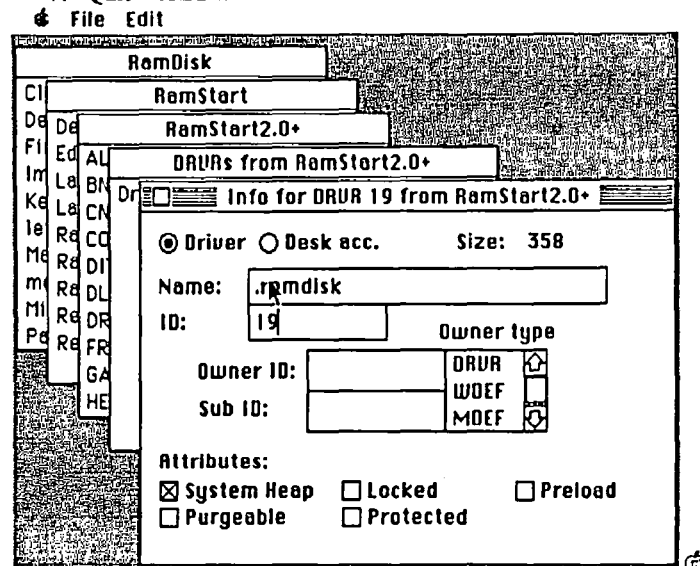
Could it be that the RAM disk driver that the RamStart program tries to install violates the rule? I decided to make a quick check using ResEdit. Sure enough it did! The RAM disk driver in the RamStart2.0+ file was assigned an ID of 10. According to the unit table in the *Inside Macintosh* figure, unit number 10 is assigned to one of two AppleTalk drivers. Since the Mac uses AppleTalk to communicate with the LaserWriter, the

problems with printing were explained.

According to the way I read *Inside Macintosh* any ID above 18 is safe for a device driver, so I changed the RAM disk driver's ID to 19. (Weston's book says that any ID above 10 should work.) I then repeated my MacDraw printing test while running from the RAM disk. Everything worked fine.

If you have a copy of RamStart2.0+ and want to use it with a LaserWriter, you will need to make the change I described above. To do this you need a copy of the program ResEdit 1.0.1 which is available from both GENIE and CompuServe. Follow these steps.

1. Start up ResEdit and insert a diskette containing a copy of RamStart2.0+. Use a working copy, not your only copy.
2. Select the name "RamStart2.0+" in the window that appears when the diskette is inserted, and either select "Open" from the File menu or double click on the name.
3. In the window labelled "RamStart2.0+" that appears select the name "DRVR", and either select "Open" from the File menu or double click on the name.
4. A window appears labeled "DRVRs from RamStart2.0+" which contains the single line "Driver ".ramdisk" ID = 10". Select this line, and then select "Get Info" from the File menu.
5. A window labeled "Info for DRVR 10 from RamStart2.0+" appears. In the field labeled "ID" change the value 10 to 19. The screen should now look similar to the figure below. Click the close box in the upper left corner of the window.
6. Click on the close box for the "DRVRs from RamStart2.0+" window and the "RamStart2.0+" window. When a dialog box asks if you wish to save RamStart2.0+, click the "Yes" button.
7. Quit ResEdit.



ELEGANT DESK ACCESSORIES

by David E. Condit

SmartScrap[™] & *The Clipper*[™] are heralded by Solutions, Inc. as a "Pair of Elegant Desk Accessories", and they are correct—both are solid and reliable Desk Accessories. The limitations of the original Apple provided Scrapbook DA are well known. Although it was a welcome addition to our original use of the Macintosh we all quickly had ideas on how it could have served us better. *SmartScrap* incorporates these ideas, and is what we always wanted in a Scrapbook DA: the ability to create and view multiple Scrapbooks, the ability to see a graphic index of our entire scrapbook, a resizable window, and finally for graphics or text larger than the window we can now scroll the Scrapbook window. *Clipper* is a DA aimed at the businessman and desktop publisher for sizing, cropping, and accurately selecting a graphic to insert into a business letter or page layout. *Clipper* will allow you to accurately measure the size of the space for your graphic, and then you can copy your entire graphic to the clipboard and scale or crop it to the exact size you need.

SmartScrap DA

The *SmartScrap* DA opens to the first page of your Scrapbook and installs its own menu in the menu bar. The menu allows you to create new Scrapbooks, switch Scrapbooks and most importantly, show a Table of Contents for your Scrapbook. This is one of the really nice touches to *SmartScrap*.

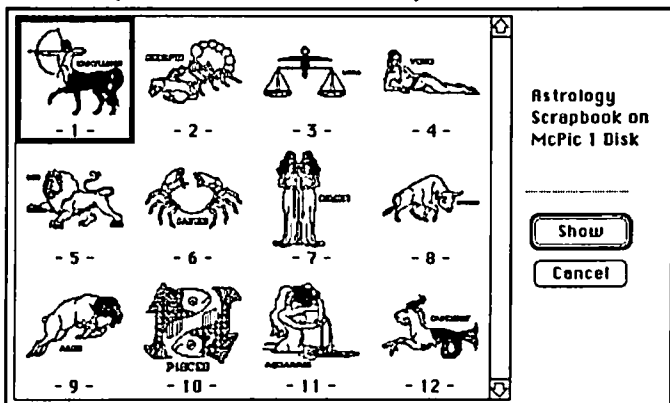


Figure 1: The Table of Contents Window

The *SmartScrap* documentation states it could possibly take up to 5 minutes for the program to create a Table of Contents, although normally it takes less than a minute. Once you have created the Table of Contents you can call it up anytime you would like. It allows you to view the contents of the Scrapbook in miniature, and a double-click on any graphic or text will take you directly to that page in the Scrapbook. This super feature allows you to quickly scan your entire Scrapbook looking for that special graphic you need. The DA also allows you to resize and scroll the contents of a Scrapbook page. Gone are the days when you could only see a small portion of the graphic you wanted to copy—with *SmartScrap* you can resize the entire window or scroll through the entire page.

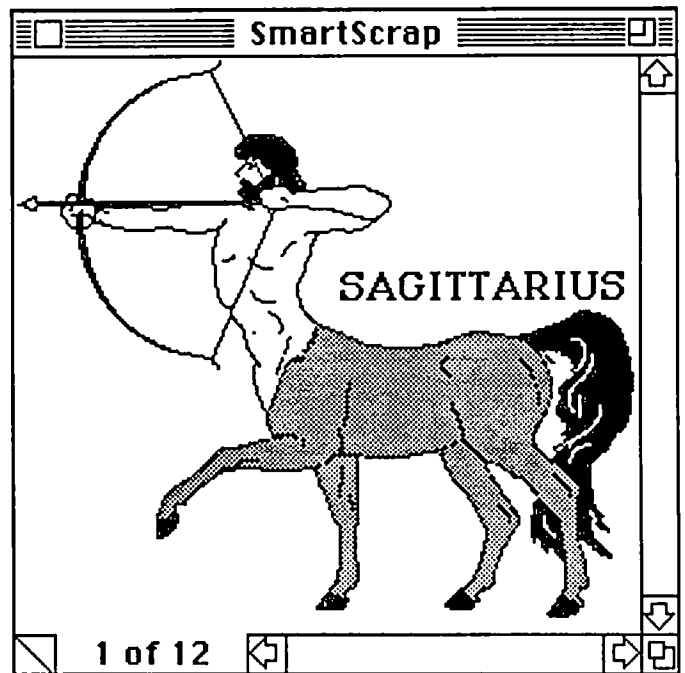


Figure 2: A Resized Window

SmartScrap even has a grow box to quickly resize the window to full screen. The pages are actually controlled much as the original Notepad was—click on the dog-eared page to go forward and backward. If you have very many pages to your Scrapbook you will soon realize the convenience of the Table of Contents, for instead of clicking on the scroll bar, or even on the dog-eared page, using the Table of Contents you can quickly double-click to the page you want. If you have always wanted the ability to select part of the Scrapbook page, either graphic or text, you can now thank Solutions for that ability. You can scroll to any part of the graphic or text you would like to copy, select it with the standard selection rectangle or text I-beam, and copy just that portion for inclusion in your document.

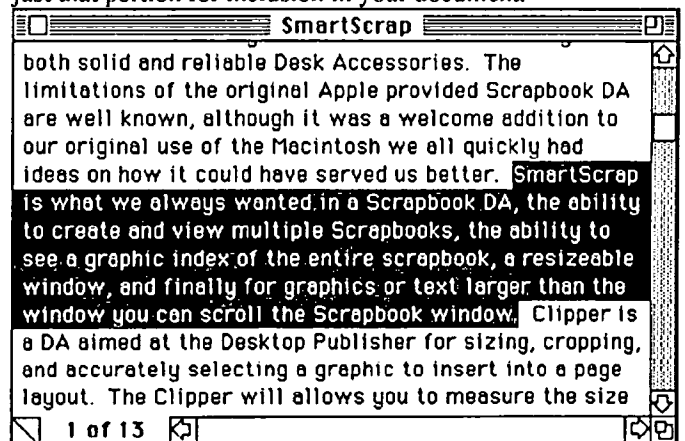


Figure 3: A Partial Text Selection

An additional "elegant" touch is auto scrolling when selecting text or graphics. If your entire Scrapbook page won't fit in the window the window will auto scroll as you select text or graphics. Unfortunately the text saved in *SmartScrap* does not retain formatting and font information, requiring you to reformat the text once you have pasted the text into another program.

contd.

The Clipper DA

As the name implies, *Clipper* is a DA that enhances the abilities of the clipboard, adding capabilities that many of us have wanted. *The Clipper* allows you to trim and scale any graphic that has been copied to the clipboard. You can use it to determine the exact size of graphic you need for your business letter or newsletter. The transparent *Clipper* window can be resized to exactly measure the size and then with the trimming and scaling capabilities of this DA you can edit it to exact size.

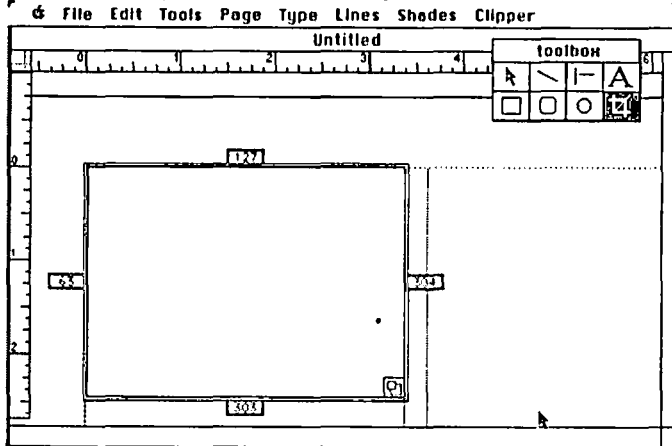


Figure 4: The Clipper Measurement Window

Desktop publishers will especially appreciate the ability to resize and crop graphics for maximum effect. To aid in exact selection for trimming, *Clipper* has a "Slow Scroll" mode for exact positioning of graphics prior to trimming. The *Clipper* window has two selectable modes, show Contents to allow manipulation of the Clipboard, and hide Contents for measuring the size of graphic you need.

Shortcomings

One serious shortcoming of the program is the possibility of deleting your current Scrapbook if you create a new one. When creating a new scrapbook, the program prompts you for a name, and if you don't supply a name your new scrapbook is named "Scrapbook File". This can result in deleting your current "Scrapbook File" if you are not careful. The program does not ask you if you want to replace your original "Scrapbook File." If you are saving the Scrapbook to another folder this can result in deleting your original. Minor enhancements that would improve the programs include a default setting that opens *SmartScrap* to the Table of Contents, and the ability to retain formatting of text in *SmartScrap*.

Do I Really Need It?

For anyone who uses the Scrapbook for cutting and pasting graphics or text between programs *SmartScrap* is a must-have program. It really makes it much easier to find, select, and transfer graphics and text. The Table of Contents capability will give most people the cataloging capabilities they need for their graphics files, eliminating the need for additional programs. *Clipper* is a more specialized program catering to desktop publishers and business users, adding additional enhancements to the standard Clipboard. The cost of *SmartScrap* & *The Clipper* is high for stand alone Desk Accessories, but by mail order the program is a good buy.

SmartScrap & The Clipper. Solutions, Inc., 29 Main Street, P.O. Box 989, Montpelier, VT 05602. \$59.95, Not Copy Protected.

CALENDARMAKER: A Review

(Ed. Note: This article came without the author's name attached and therefore we cannot give proper credit at this time.)

CalendarMaker by Donald Brown of C E Software is a real gem of a program for those of us who have busy schedules or have trouble remembering appointments and important dates. To make it even better, the program is distributed as shareware so you can test drive it before you put out your hard-earned dollars.

Speaking of dollars, this very versatile program only costs \$30 and when you send in your money, they send you a printed manual and a bonus program called IconMover which allows you to:

- A. create and modify icons;
- B. create and transfer icons between icon files;
- C. scrounge icons from resource files and paint files;
and
- D. save icons in the resource format.

The manual is excellent and reflects a highly professional approach to documentation. It's clear and concise and is written in non-technical language for the common man. Richard Skeic should be congratulated for a job well done.

CalendarMaker allows you to make three styles of calendars—a pictorial calendar with a half page picture you can import from MacPaint and a half page calendar month; a full page calendar month, or if you wish, a one page calendar with two months on it. I have found the full page calendar very useful at work for agendas, meetings and appointments. I print the calendar on 11 x 15 computer size paper, which allows plenty of room for text in each day's box, and then reduce it to a standard 8 1/2 x 11 on a photocopying machine.

The program lets you add icons to dates as a graphic reminder of the importance of the date, or if you wish, you can enter up to 255 characters of text to each date.

The CalendarMaker comes with over 100 predefined icons in such areas as personalities, symbols, logos, pictures and games and activities. If these don't suit you or if you want to be creative, you can create your own with the powerful icon editor which has been included.

The text portion is equally powerful. It gives you the ability to select left, right, or middle justification. Moreover, you can select the font, size and style for the month, dates, weekdays and text. You can even make changes on a day-by-day basis!

You get all this and color too! With an ImageWriter II, you may print most elements or the calendar in full color.

All in all I would evaluate this program as an exceptional value for the money, and now that I've used it, I don't know how I got along without it.

MAC DISKETERIA NOTES

by Martin Milrod

Contest Announcement

Our erstwhile professional pedant, the GameSIG Chairman Emeritus Ron Wartow, has agreed to judge a contest of World Builder™ games to be developed by WAP members. (It was the only way we could keep Ron out of the contest.)

Submit your ingenious, and terribly clever World Builder game by Labor day, on a Mac disk to the office. Please mark the outside of your disk or envelope with the words "World Builder Contest" so that the office staff can just place it into Ron's receptacle.

Mac Disk 97 Errata

There is a minor problem with using the Palencia Font on Disk 97, due to space limitations on the disk. The "Open Suitcase" Palencia Icon should be opened and the "Extracted" Palencia Font should be saved onto another disk (with about 100K of free space). The "Palencia" Icon on Disk 97 has only 4 point sizes; the "Extracted" version includes point sizes from 9 to 48.

New August Disks

We have five new disks for August. We will be going to the MacExpo in Boston and this should help us prepare for another season of Mac Disks that we hope you will find helpful. Also, decisions will have been made on implementing a new, functional reorganization of disks and whether to produce 800K disks. We'll announce these decisions in this column as soon as they are made.

Mac Disk 105: Fun & Games XXIII

Air Warrior & Other Games

NFL Football (Version 2.2) A football strategy game, where you are the coach. In the beginning of the game, you control the selection of some of the major player-types, including quarterback, receivers, and runners. During the course of the game, you pick each offensive or defensive play. Operating instructions are self-explanatory. *Shareware - \$9.00.*

Lotto (Version .10) A Lotto simulation game, but we never really got the point. Perhaps the point is to show how unlikely it is that you would ever win one of these games, thereby discouraging people from wasting their money on them?

Panic (Version 1.0) A self-described "silly game" resembling Space Invaders. Find the instructions in the "About Panic..." command under the Apple menu.

HangMan-9.0 A somewhat more sophisticated version of the old word game. This computerized version offers multiple categories, including states, state capitals, countries, Presidents, composers, astronomy, instruments, TV, and user-defined words. You can also vary the number of wrong guesses allowed (6, 8, 10, or 12). Wrong guesses produce some interesting graphics on the screen. *Shareware - "Any Amount."*

Air Warrior 0.6b f

Air Warrior 0.6b An aerial flight and combat simulator.

This one really blows your mind! The program on this disk is a fairly unremarkable flight simulator in the tradition of the commercial program by that name. You can fly a collection of World War I and II airplanes with a combination of mouse and keyboard commands, and it's not too hard to get off the ground and cruise the area. (Landing is another story!) But what really sets this apart is the fact that the flight program is designed to work interactively with other "pilots" connected to the GENie information service. Using the built-in communications module in the program, you can quickly and easily make the connection with GENie and enter a whole new world of computer aces. Through this system you can dogfight with other "air warriors" across the country. (Use the communications module to dial the 800 number provided in the program to make the connection with GENie by following the instructions provided. Of course, you have to be a GENie subscriber to play the game, and we drew the line on this annotation business when GENie asked me for our credit card number.) There are even radio frequencies to communicate with other pilots and "conference rooms" to shoot the breeze with your fellow air warriors on the ground.

Air Warrior Instructions A nine-page MacWrite file that provides detailed instructions on flying your airplanes, as well as a description of the world of the "air warrior" on GENie. This was originally a text download from GENie, which your friendly annotator has reformatted as a MacWrite file.

Mac Disk 106: Fun & Games XXIV Strategy Games & More

Guess The object of the game is to guess the four-letter words randomly selected by the Mac. (No, not those kind of four-letter words!) You get ten chances and, along the way, clues about the correct letters and positions in your previous guesses. You can get on-screen instructions from the game screen by hitting the space bar or the return key—or most any key other than the letter keys. *Shareware - \$5.00.*

Air Traffic Controller 1.0 As the name suggests, this is an air traffic controller simulation—and a pretty sophisticated one at that. You have a radar screen and a status and command panel for monitoring and controlling the headings and altitudes of a steady succession of aircraft entering and exiting your sector. Press the on-screen Help button to get 17 pages of detailed on-screen instructions. The FAA may be hiring again soon, so this may be a good way to brush up for an interview!

Iggy Iggopolis Construct "electric fences" that will pen your adversary in a corner of the playing screen. It's a little frantic, but I can see that there's some strategy involved. Type "?" to get some brief instructions.

Brickles 7.0 A variation on the old Break-Out theme. You can vary speed and lots of other variables. *Shareware - \$5.00 or \$10.00.*

contd.

1000 Miles f

1000 Miles An auto racing game based on the card game Mille Bornes by Parker Brothers. This isn't an arcade-style game, but rather a game of strategy and chance in which you play against your Mac. It's strangely addictive. *Shareware - \$10.00.*

1000 Miles.doc An illustrated six-page MacWrite file that provides instructions for playing 1000 Miles.

(Memory f)

Memory (Version 2.0) A matching game in the style of Concentration, but without the puzzle. Match pairs of familiar Macintosh icons, playing against either a friend or the Mac. Fortunately, the Mac was almost as forgetful as we were at the lowest level of difficulty, giving us a chance to stay competitive. The game offers five levels of difficulty, and different collections of icons, called "decks," are available in the game section of CompuServe. Check the "About Memory" command under the Apple menu to get on-screen instructions. *Shareware - \$10.00.*

Casino A different set of icons for the Memory game, based on playing cards, dice, and telepathic recognition symbols.

Symmetry Another set of icons for Memory, based on symmetrical variations of simple figures.

Icons of Doom! A set of icons for Memory based on the adventure game "Dungeon of Doom."

Mac Disk 107: DAs X Mostly Utility DAs

Amort da.Acc. Calculates the various elements of a typical loan, and prints an amortization schedule. Neat!

Compact 1 and Compact 2 These DA's apparently compact something, but they are more than a little mysterious in the absence of documentation.

Compress It Saves a compressed copy of a file. *Shareware - \$15.00*

Checksum Named File Checker 1.0 in the window, this DA displays the size of a file's data and resource forks and its checksum.

Clicker This DA for program developers from the Boston Computer Society displays the current location of the mouse, the location where you last clicked it, and the relative displacement between the two.

Commander 2.0 Displays the Hayes modem (and compatibles) AT commands and S Registers.

DoodlePad An expandable blank window in which you can doodle with the mouse as with the pencil in MacPaint, but with no fancy features at all. (Cut from the Edit window will clear the pad.)

Formfeed da Advances the Imagewriter like hitting the formfeed button when pressed. *Shareware - No check is too small.*

Laser Envelope da Prints the contents of the clipboard to the Laserwriter, so can be used to print envelopes easily.

MenuFonts v.1.0 demo da A demo of a DA which, if run while an application with a standard font menu is open, displays the names of the installed fonts in the styles of those fonts. (Geneva in Geneva, Chicago in Chicago, etc.) The demo displays only the first three fonts in your system. *Shareware \$15.00 for the full program.*

Area Code Stuff f

Area Code Displays the state, a representative city, and time zone for individual area codes. It doesn't work properly in HFS unless you use ResEdit as described in the file Area Code HFS Fix to install the full pathname for the Area Code File in the DA.

AutoLog 3.0 Stuff f

Autolog Performs log-on macros while a terminal emulator such as MacTerminal™ is active. Autolog should work with most terminal emulators. See the extensive documentation about how it works. *Shareware - What you think it is worth.*

Cray5Stuff2.1 f

dCad Calculator Version 5 (2.1) of Desktop CAD's dCAD Calculator, which provides advanced scientific and programmer functions, as well as a quick-reference ASCII table. Two versions of the program are available: an application, used as any other standard program, and a desk accessory. The documentation is useful and nicely formatted for printing. *Shareware - \$8.00.*

MegaWatch f

MegaWatcher Tracks the loading and unloading of resources. You may specify any resource type (CODE is the default), and MegaWatcher will keep a continuous display of all resources of that type. You can determine the size, location, and status (in memory, locked, and/or purgeable) of each resource.

ParmBlasterStuff f

ParmBlaster When you select this DA, although nothing appears to have changed, ParmBlaster clears the Macintosh or Mac XL's parameter RAM. All of the Control Panel desk accessory's settings (volume, mouse tracking, keypress sensitivity, etc.) have been reset to Ø. This does not affect the date and time, however. If AppleTalk was connected, it will be disconnected after executing ParmBlaster.

Popupstuff f

Popup Allows you to access the menubar from anywhere on the screen. It works with (probably) any menu in (probably) any application. It is especially useful on large screens. It has been successfully run on the Radius and Mac II. (According to the documentation, that is; the Pi hasn't delivered our Radius and Mac II yet.) *Shareware - \$10.00 (\$25.00 for code.)*

RasNixStuff f

RasNIX A pseudo-UNIX emulator, which allows you to examine and manipulate (to some extent) the files on your disks. RasNIX provides a command-line-oriented shell, and supports several standard UNIX commands (as well as some Mac specific commands).

WN-Text f

WN-Text The current version of WriteNow has no ability to convert a WN document to Text or vice-versa except through the clipboard, an omission solved by this DA. The documentation is in "Write Now" format. If you don't have the program and want to read the document, run the WN to Text conversion feature of the DA. *Shareware - \$5.00; \$15.00 for an update.*

WORD3.0DA's f

Word 3.0 DA's Four DA screenfulls of Word 3.0 keyboard equivalents; easier to access than Word's help data.

Mac Disk 108: Fun & Games XXV With NetTrek Life Hack 1.0 A new implementation of an old favorite.

contd.

What's new here is the ability to freeze some of the dots which make up the Life population, leading to different combinations. Has a number of options to experiment with. Nim A fairly simple implementation of an old "don't be the last to move" game against the computer, which will display sarcastic comments about your playing ability.

Trek f

NetTrek Try to conquer the known universe before any four of your colleagues on your AppleTalk network do. "Beam me up, Scotty!" *Shareware - \$25.00.*

Daleks 2.0 f

Daleks 2.0 Here you are again, up against those darn robots! This is the current version of an old favorite last seen on our Disk 16. There is some documentation from the early implementation by Johan Strandberg. This inept robot stalker takes the suggestion that scores of 1,000 or so are routine as hyperbole, but who knows?

Daleks DA Another implementation, this time as a DA. *Shareware - \$25.00.*

Mac Disk 109: Sounds II with SoundInit

FZ Frank Zappa from "Grand Wazoo" uttering his famous "Great Googly Moogly (sp?)".

Hal "I am completely operational and all of my circuits are functioning." from "2001, A Space Odyssey".

Hi This is a nice friendly greeting from your Mac. *M a n i c Monday* The popular tune by Bangles.

Number Nine, Number Nine This segment from the "Number 9... Number 9" segment of the Beatles "White Album" played backwards.

Now here's... Rocket "Rocky" the Squirrel sez... *Stooge Intro* From the old movies with Larry, Moe and ...

Walk Like an Egyptian Another popular tune by Bangles.

SoundInit f

SoundInit Place this Init in your System Folder and it will play any digitized sound file named StartUpSound that is also in your System Folder. The documentation,

SoundInit.doc was excerpted from the Randomizer Init documentation which will be on a future WAP disk. ☺

IIGS DISKETTERIA NEWS

by David Todd

This month WAP offers its third GS disk along with a non-library disk.

/WAP2003 FREETERM

FreetermGS: An easy to use communications program which uses the mouse and SuperHiRes screen. A GS with 512K minimum is required. Only the built in ports are supported. 300/1200/2400 baud. Supports Xmodem CRC or Checksum. BinaryII translation is automatic.

Macpaint to GS: Reads a Macpaint file and allows sections to be converted to SHR format. Requires the MacPaint file to be on a ProDOS disk.

MAC trans GS: Will copy the files of your choice from a 400K Mac disk onto a ProDOS disk!

SHR Convert ver. 1.1: Updated version adds to the number of file types that can be converted. SHR pics may now be saved in different formats.

Peeker: Execute this file to connect the built in memory checker CDA.

Mouselabel: A simple mouse driven label printer.

Mouse Sound: A modification of a sound demo that appeared in the Jan '87 A+ magazine. This version allows the waveform to be shaped by the mouse.

Display: Allows you to see SHR screens or Paintworks slide shows from within a ProDOS16 shell (APW, Orca/M, EPC16).

NDA: Allows use of New Desktop Accessories from within a ProDOS16 shell.

Notepad Patcher: will patch the CDA Notepad (which is on /WAP2001) to save to a different pathname.

Meltdown.P: This is the TML source code for the Meltdown NDA (on /WAP2001). It is offered as a shell for designing other NDA's.

SHR: Adds a set of ampersand commands to Applesoft Basic which allows plotting on the SHR screen.

SpeedSwitch: This is a CDA which allows you to save a few steps by changing the system speed from the Desk Accessory menu.

SlotSwitch: This CDA will let you switch between "YOUR CARD" and the built in slot without rebooting.

Nifty List (*Shareware \$10-\$15*): A memory examiner/manipulator CDA that disassembles with the calls to tools, ProDOS8, and ProDOS16 identified by name.

Also included are four SHR pics to add to your gallery.

Liz: Digitized face.

Nagel 85 & 141: Two heavily stylized drawings of women.

Uncle Ronnie: Everyone's favorite uncle.

We are throwing in a couple of programs that are offered elsewhere in the library but may be useful to those of you new to Apple and/or ProDOS.

Freewriter is a stripped down Apple Writer type word processor for generating ProDOS text files.

Kermit allows file transfer between different computers using a standard protocol.

Our non-Disketeria disk offering is the new GS System Disk ver 2.0 This contains ProDOS16 ver. 1.2, ProDOS8 ver. 1.4, and Basic Launcher ver. 2.0. Most of the tools have been revised and slightly compacted. A couple of the missing tools have been added along with the printer drivers. Hodgepodge (/WAP2002) will print SHR pics when using this system.

We are trying to compile a disk of songs (Music Studio, Music Construction set) and a disk of SHR pictures. Contributions of any type are eagerly welcome. ☺

WAP TUTORIAL REGISTRATION

Apple II: The following three WAP tutorials are being offered to Apple II 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 your 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" and will be repeated monthly. A revised outline of the tutorials was given in the October Journal. The fee for each session 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.

- () No Apple II - WELCOME TO THE WORLD OF APPLE () September 1
- () Tutorials in - HOW TO USE YOUR APPLE SOFTWARE () September 8
- () August - POPULAR APPLICATIONS: APPLEWORKS () September 15

Macintosh: Tutorials for the beginners are regularly given on the 2nd, 3rd and 4th Monday evenings of the month at the office, from 7:30- 9:30 PM. You may sign up for 1, 2 or all 3. The fee for each tutorial is \$10. You are strongly urged to bring your Macintosh—WAP does not have equipment for you to use. These tutorials fill up quickly - call the office to verify space before mailing in your registration.

- () Monday, August 10 or () September 14 - Introduction to Macintosh. Prerequisite: Guided Tour to Macintosh.
- () Monday, August 17 or () September 21 - Intermediate Mac Skills. Prerequisite: Familiarity with Desktop, disk copying, etc.
- () Monday, August 24 or () September 28 - Becoming a Mac Power User. Prerequisite: First two sessions or equivalent.

Non-Regular Tutorials: The following tutorials are being offered in August at the office. The fee for these tutorials is \$15 (\$20 for non-members).

- () Making Music With Your Macintosh - Judy Moore - Saturday, August 1, 10 am-12 Noon. Fee \$15 (\$20). Bring your own software and Mac. Work with Professional Composer, DeLuxe Music Construction Set, Music Type and Performer.
- () WordPerfect on the Apple II - Lee Raesly - Saturday, August 8, 9 am-12 Noon. Fee \$15 (\$20). Bring your Apple, WordPerfect and a blank disk. Learn the basics of this popular word processors for the //e, //c and IIGs.
- () Maintaining Your Disk II (rescheduled) - Richard Miodoch - Saturday, August 8, 1 - 4 pm. Fee \$15 (\$20). Bring your Apple and 5 1/4" disk drives.

Please check the desired tutorials and return this form with fee(s) made payable to Washington Apple Pi, Ltd. to:

Washington Apple Pi, Ltd.
 Attn. Tutorials
 8227 Woodmont Avenue, Suite 201
 Bethesda, MD 20814

Name _____ Membership No. _____
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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.

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 - () 161 Wizard Worker
 - () 162 Games E
 - () 163 Graphs and Displays
 - () 164 Games F
 - () 165 Happy Holidays
 - () 166 Charts and Graphs
 - () 167 IAC 40 - Pilot Lang.
 - () 168 IAC 41&47 - AW Util.
 - () 169 Hayes Term. Prog.
 - () 170 Love's Follies (Utilities)
 - () 171 Cat-Graphix
 - () 172 Print Shop Graphics
 - () 173 Riley's Pers. Instrum.
 - () 174 Imageworks
 - () 175 No Name Yet
 - () 500 Master Catalog Listing
 - () 501 Util.-Beginner's Choice
 - () 502 Util.-Intermediate User
 - () 503 DComm
 - () 504 Database - LOGIC
- ## Eamon Series Volumes
- () 180 Dungeon Designer
 - () 181 Beginners Cave
 - () * 182 Lair of Minotaur
 - () * 183 Cave of the Mind
 - () * 184 Zyphur Riverventure
 - () * 185 Castle of Doom
 - () * 186 Death Star
 - () * 187 Devil's Tomb
 - () * 188 Caves of Treas.Isl.
 - () * 189 Furioso
 - () * 190 The Magic Kingdom
 - () * 191 The Tomb of Molinar
 - () * 192 Lost Isl. of Apple
 - () * 193 Abductor's Quarters
 - () * 194 Quest for Trezore
 - () * 195 Underground City
 - () * 196 Merlin's Castle
 - () * 197 Horgrath Castle
 - () * 198 Deathrap
 - () * 199 The Black Death
 - () * 200 The Temple of Ngurct
 - () * 201 Black Mountain
 - () * 202 Nuclear Nightmare
 - () * 203 Feast of Carroll
 - () * 204 The Master's Dungeon
 - () * 205 The Crystal Mountain
 - () * 206 The Lost Adventure
 - () * 207 The Manxome Foe
 - () * 208 The Gauntlet
 - () * 209 Caverns of Langst
 - () * 210 Future Quest
 - () * 211 House of Secrets
 - () * 212 Sewers of Chicago
 - () * 213 Slave Pits of Kzorland
 - () * 214 Alternate Beginner's Cave

Eamon contd.

- () * 215 Lifequest
- () * 216 Swordquest
- () * 217 Priest of Ximl
- () * 218 Heros Castle
- () * 220 Utility II
- () * 221 Utility III
- () * 223 Temple of Undead
- () * 224 Quest for Holy Grail
- () * 225 Caves of Mondamen
- () * 226 Orb of Polaris
- () * 227 Death's Gateway
- () * 228 Esc. from Orc's Lair
- () * 229 City in the Clouds

ProDOS Volumes

- () 802 Utilities (A)
- () 803 Filecabinet
- () 804 Shareware
- () 806 ZAP
- () 807 Imageworks
- () 808 Comm-Term
- () 809 '86 Tax Tmplate-AW
- () 810 Haunted House
- () 811 Adventures Disk
- () 812 Toddlers and Kids
- () 813 TAWUG-1
- () 814 TAWUG-2
- () 815 TAWUG-3
- () 816 TAWUG-4
- () 817 Telecom

Pascal Volumes (See also 133)

- () 300 PIG0:ATTCH 1.1/BIOS
- () 301 PIG1: () 302 PIG2:
- () 302 PIG3: () 304 PIG4:
- () 303 PIG5: () 306 PIG6:
- () 304 PIG7: () 308 PIG8:
- () 305 PIG9 () 310 PIG10:
- () 306 PIG11: () 312 PIG12:
- () 307 PIG13: () 314 PIG14:

CP/M Volumes

- () 401 Master Catalog
- () 402 Utilities 1
- () 403 Communications
- () 404 Utilities 2
- () 405 Utilities 3
- () 406 ZCPR2 Install
- () 407 ZCPR2 Documentation
- () 408 ZCPR2 Utilities
- () 409 Modem 730
- () 410 Essential Utilities
- () 411 Text Editor
- () 412 Spreadsheet
- () 413 MDM740(SSC&Com)
- () 414 MDM740(7710&A-Cat)
- () 415 Orig. 350 Pt.Adventure
- () 416 Kermit Source Code
- () 417 Kermit Documentation
- () 418 Kermit Running Code
- () 419 Util.-Z83,REZ,VDE
- () 420 Small "C" Compiler

Apple /// Volumes

- () 1001 Games Volumes 1 & 2
 - () 1002 Basic Utility Vol. 1
 - () 1003 Basic Utility Vol. 2
 - () 1004 Sys. Utils & Data
 - () 1005 New Member Disk
 - () 1006 Word Proc. & WPL
- ## Apple IIGS Volumes @\$6
- () 2001 Utilities & Pictures A
 - () 2002 Demo Disk A
 - () 2003 Freeterm
 - () IIGS Systems Diak

Macintosh @\$6

- () 17.3a Red Ryder 9.2
- () 17.2b Red Ryder Doc.
- () 31.1 Dun.Doom/Eliza Talks
- () 32 Fun and Games II
- () 33 Desk Accessories II
- () 35 Fun and Games III
- () 36 Utilities III
- () 37 Fkeys
- () 38 Graphic Tools
- () 39 XLisp and Mini-ADA
- () 40 Mac Videos
- () 41 Cap'n Magneto
- () 42 Studio Session (512K)
- () 43 CE Software Sampler
- () 44 Boston II Fonts
- () 45 Games IV
- () 46 Games V
- () 47 Fonts IV
- () 48.3 Fonts V
- () 49 Utilities IV
- () 50 Paintings III
- () 51.2 Telecom II (no sys)
- () 52.1 Utilities V
- () 53 Utilities VI
- () 54 Games VI
- () 55 Games VII
- () 56 Games VIII
- () 57.1 New Memb. Disk 86
- () 58 Desk Accessories IV
- () 59.1 CE Sampler II
- () 65 Desk Accessories V
- () 66 Desk Accessories VI
- () 67 Desk Accessories VII
- () 68 Utilities VII
- () 69 Utilities VIII
- () 70 Utilities IX
- () 71 Utilities X
- () 72 Utilities XI Sys./Grph.
- () 73 Word Processing
- () 74 Fun & Games IX
- () 75 Fun & Games X
- () 76 Fun & Games XI
- () 77 Fun & Games XII
- () 78 Fun & Games XIII
- () 79 Fun & Games XIV
- () 80 Fun & Games XV
- () 81 Utilities XII
- () 82 Utilities XIII
- () 83 Telecom III
- () 84 Fun & Games XVI
- () 85 Fun & Games XVII
- () 86 Utilities XIV
- () 87 Utilities XV
- () 88 DAs & Fkeys VIII
- () 89 Fun & Games XVIII
- () 90 Utilities XVI
- () 91 Fun & Games XIX
- () 92 Education II
- () 93A & () 93B Fonts VI
- () 94 Paintings IV
- () 95 Fun & Games XX
- () 96 Fun & Games XXI
- () 97 Fonts VII
- () 98 DAs IX
- () 99 Inits I
- () 100 Fonts VIII
- () 101 Fonts IX
- () 102 Sounds I
- () 103 Utilities XVII - W.P.
- () 104 Fun & Games XXII
- () 105 Fun & Games XXIII
- () 106 Fun & Games XXIV
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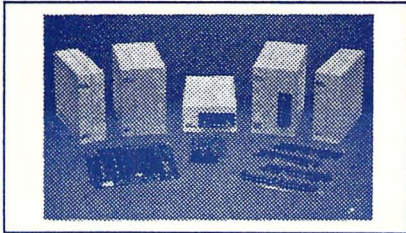
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