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# Washington Apple Pi



The Journal of Washington Apple Pi, Ltd.

Volume 8

May 1986

Number 5

## Highlights

- FAMILY HOME MONEY MANAGER: Part 1
- FORTH MERGESORT
- ELIZA SPEAKS UP IN CLASS
- MACSPIES: KEEPING LITTLE SISTER OUT OF YOUR DIARY
- MAC DISK SPEED COMPARISONS

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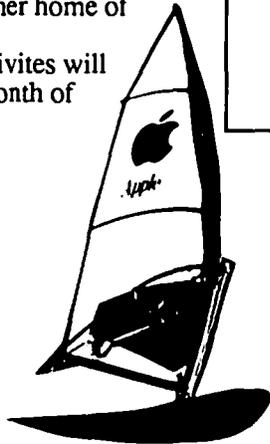
May 1986

## Clinton Computer Opens Laurel Store

Clinton Computer is pleased to present a Fantastic Macintosh Plus™ Festival to celebrate the opening of our third store. Located in the Laurel Plaza Shopping Center, at the intersection of routes 197 and 198, this site is the former home of The Comm Center.

Grand Opening Festivities will continue through the month of May.

## Win A Macintosh Plus Or An Apple SailBoard!



Enter our DRAWING for first prize of an Apple Macintosh Plus Computer. Two lucky second place winners will each receive an Apple Wind Surfing Board.

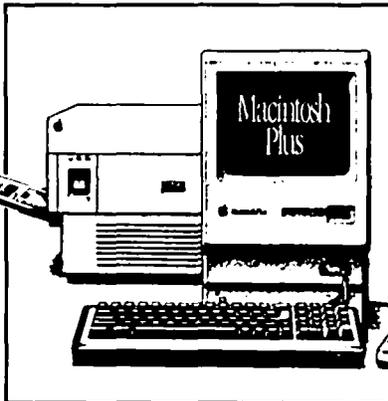
Entry forms available at all three stores. One entry per person, please. The drawing will be on June 2, 1986.

## Lisa/MacXL Trade-In

If you own a Lisa/MacXL you may trade it in on a Macintosh Plus and Hard Disk 20 between April 14 and August 29 only. The cost is your Lisa and \$1498. (Pi discounts do not apply.)

## Pi Pricing for Macintosh Upgrades

	List	Pi Price*
Macintosh Plus Internal Disk Upgrade (list includes \$25 installation)	\$324	\$243
Macintosh Plus Upgrade from 128K or third party 512K; also requires Disk Upgrade (list includes \$50 installation)	\$849	\$637
Macintosh Plus Upgrade from Apple 512K; also requires Disk Upgrade (list includes \$50 installation)	\$649	\$487
LaserWriter Plus Upgrade (list includes \$50 installation)	\$849	\$637



## Spend \$200 at New Laurel Store and Get a Free Gift

Any customer who spends \$200 or over at our new Laurel Store will receive his/her choice of an in-stock Apple premium -- coffee mug, sun visor, key-chain, lapel pin, etc. (Limited quantities.)

## New Product -- Macintosh 512K Enhanced!!

Apple has just announced a new product -- the Macintosh 512K Enhanced. It comes with an 800K internal drive and the Macintosh Plus 128K ROM's as standard. We expect our first shipment around the first of May.

## Rebates Offered!!

### Macintosh Plus Upgrade Rebate

If you purchased your Macintosh between November 17, 1985 and January 15, 1986, you can qualify for up to \$450 in rebates directly from Apple Computer when you upgrade your computer to a Macintosh Plus. (Upgrade must be purchased before May 15, 1986.)

### Macintosh 512K Recent Purchase Rebate

If you purchased a Macintosh 128K or Macintosh 512K or 512K Memory Expansion between January 16, 1986 and April 14, 1986, you can qualify for a \$75 rebate from Apple when you purchase an 800K Disk Drive Kit between January 16 and July 15, 1986.

\*CLINTON COMPUTER is pleased to offer Washington Apple Pi members a 25% DISCOUNT OFF THE LIST PRICE on all Apple brand peripherals and software and on AppleCare. Discount is available to persons who have been Pi members for at least three months. Discount applies to cash and certified check purchases of Apple peripherals and software (no CPU's) and may not be applied retroactively. If the product is not in stock, we can take your prepaid order. Pi members need to present their ID cards up-front. Discount cannot be used in combination with other promotions. Members should primarily utilize the Pi network of experts for after-sale support. No phone or mail orders, please.

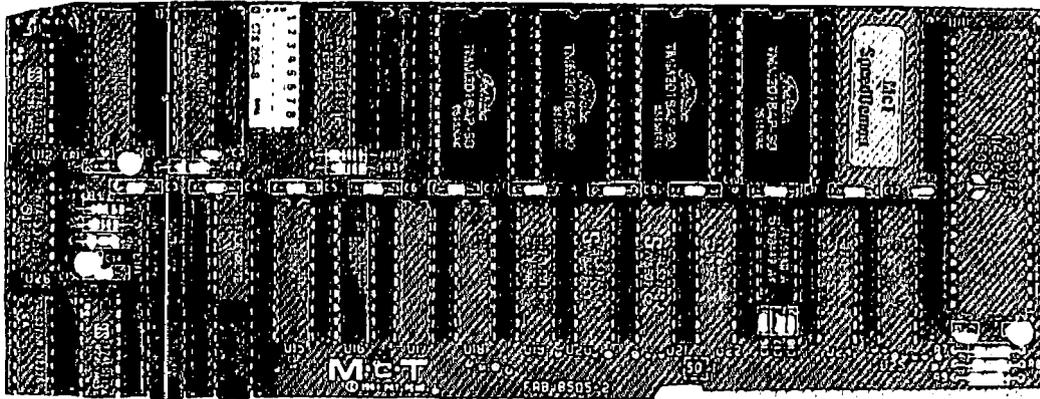
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"...You'll be enthralled by  
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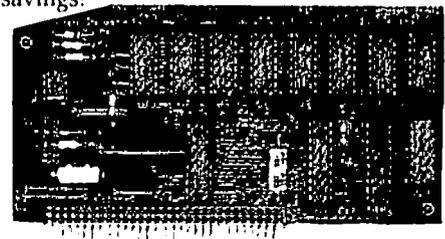
card. Some of the most enthusiastic users of SpeedDemon are Applesoft™ VisiCalc™, SuperCalc™, Multiplan™, Apple Writer™, BPI™, Pie Writer™, Pinpoint™, Applesoft™, compiler (such as Pascal™, C, BASIC, etc.) and assembler users (such as Merlin™, etc.)

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# EDITORIAL

A good issue. Something for everyone (even spics). An interesting phenomenon is seemingly occurring in sort of a déjà vu. We are witnessing a resurgence of interest in the older Apple equipment, and the corresponding older information. Many early users of the Apple ][ and /// have moved on to newer equipment in the Apple line or other (why the latter is completely beyond me). They have sold, traded or given away their equipment to newcomers who are now in need of information about all sorts of software, hardware, upgrades and techniques pertaining to the Apple ][, ][+ and ///. How about you experts out there getting together a compilation of the best of the old materials for the benefit of these folks? David Ottalini is trying just this for the /// users (see his article and letter in this issue). What about the rest of you? A, ahem,

valuable source of information for this purpose is available in the office—our own back issues of the Journal, and lots more.

Special thanks are in order. For the first time since 1980 there was a big question as to whether this issue would be ready for the printers in time. This has not been a good Winter-Spring in the Urban household for health. All four of us have had the flu (even Matilda, our dog, has been under the weather), and Gena and I are both recuperating from pneumonia. What to do about the deadline? Tom Warrick, who was himself facing minor surgery, jumped right in and processed several articles. Marty Milrod, recuperating from an automobile accident, came to our home and did quite a few more articles and even volunteered to return on the 'crunch' weekend. Our heartiest thanks to both!

# PRESIDENT'S CORNER

by Tom Warrick

**E**lections are upon us: Nominations are now open for offices in Washington Apple Pi. Nominations will close soon and the balloting will begin at our May meeting. All WAP members are eligible — and encouraged — to run. WAP's elected officers are the president, a vice president for Apple II programs, a vice president for Macintosh programs, the secretary, and the

treasurer. The Board also consists of seven elected directors-at-large and three members who serve ex officio: the past president, the editor of the Journal and the disk librarian. If you're interested in running, please don't hesitate to contact the nominating committee of *Jay Heller* and *Mike Ungerman*, or any one of the other officers or directors.

Washington Apple Pi maintains one important tradition in connection with Executive Board meetings: anyone who comes to a Board of Directors meeting is eligible to vote, whether elected or not. Most decisions are made by everyone who attends. There is a rule, invoked on rare occasions, that allows one of the "official" board members to request a vote of official members only—but this seldom changes the will of the majority present. So even if you decide not to run, you're welcome—and encouraged—to help run your user group.

**Ballots** will be available at the May meeting and will be mailed out immediately thereafter to those who do not attend. We had 1,046 members vote last year—a good turnout for a volunteer organization, although we are always looking to do better. The deadline for receiving your ballot at the WAP office will be *Saturday, June 21*.

**Thanks, Jef:** WAP thanks *Jef Raskin* of Information Appliances for his presentation on SwyftCard at our March Apple II meeting. He was a most interesting speaker and took with good grace *Adrien Youell's* user's presentation. I didn't have the chance to listen to the whole program, but from the dozen people I talked to afterwards came a dozen different perspectives on what happened. I'm not sure what exactly transpired, but I'm looking forward to going to the WAP office and seeing the videotape. (If you ever miss a meeting, you may be able to watch a videotape of it, courtesy of *John Alden*, our program chairman, who videotapes our meetings.) If Jef wants to say anything in response to what went on at the meeting, *Bernie* will print it here in the Journal. (Ed. Note: See Jef's response elsewhere in this issue.)

**Thanks, Ellen:** A special thank you to *Ellen Leanse*, Apple Computer's User Group Evangelist, who

made our March meeting one of our most memorable. Ellen sat in on both the Apple II and the Macintosh Q&A sessions, and there was, as we say in Washington, a full and frank exchange of views. It was good to have someone from Apple listen to what users are saying.

**AppleLink** has two meanings to Washington Apple Pi. One of them is a board on System 3 of the WAP telecommunications systems (formerly known as bulletin board systems). Messages posted there get distilled and sent off periodically to Apple, so if you want to continue the dialog we started with Ellen, send a message. Individual responses are not possible due to the number of inquiries received, as *Parade Magazine* says, but we'll do what we can to pass on what you say to the right people.

The second meaning of **AppleLink** is Apple's new electronic mail/online database of technical information about Apple products. (See *Jim Burger's* review of AppleLink on pages 61-63 of the January WAP Journal.) This database contains technical information searchable by keyword. For example, you could enter

65816 AND MS-DOS COMPATIBLE

and AppleLink would retrieve any technical notes or reference materials that used the terms 65816 and MS-DOS COMPATIBLE (and, no, before you ask, I don't know if that search would actually turn up anything yet). AppleLink will enable us to answer many (though not all) questions people have that cannot be answered by looking in the manual, calling your dealer (who has access to AppleLink, incidentally), calling the WAP hotline, or calling *Bruce Field* or *Jon Hardis*. Apple is now opening AppleLink up to user groups on a pilot basis. WAP has applied to be one of the pilot groups, and we've got our fingers crossed that we may be one of those chosen. If we are accepted, it will give us access to information not heretofore available or available in less useful ways. TANSTAAFL,\* as *Lee Raesly* would say. WAP would get only two free hours a month on AppleLink during the pilot period, and time in excess of two hours would be very expensive, on the order of \$25 an hour by some estimates. So this is going to be an experiment both for Apple and for WAP.

I saw an item in the Washington Post the other day that reminded me of February's meeting with *Alan Kay*. The article said that the official premiere flight of *Quetzalcoatlus northropi*, the flying mechanical tailless pterosaur engineered by Paul MacCready, will be on Saturday, May 17, at Andrews Air Force Base. There will be two flights that day, so watch the Post for further de-tails. (The preceding pun put there for the benefit of John Alden.) The flight of *Quetzalcoatlus northropi*, which Alan described as one of the premiere engineering feats of the decade, will be one of the featured events at a day of aeronautica, and the rest of the program should also be quite interesting. Perhaps we will see Alan there.

*What you see is what you'll get.* One advantage  
contd. on pg 37

## EVENT QUEUE

Washington Apple Pi meets on the 4th Saturday (usually) of each month, both Apple and Mac. Library 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:

May	24	- Apple // open - Hierarchical File System for the Mac
June	28	- Garage Sale

The Executive Board of Washington Apple Pi meets on the second Wednesday of each month at 7:30 PM at the office. All members are welcome to attend. (Sometimes an alternate date is selected. Call the office for any late changes.)

## General Information

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

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

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

Current office hours are:

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

## COMMERCIAL CLASSIFIEDS

**CABLES:** Adaptation Electronics, (301) 948-7440. Custom cables for the Apple //, //c and Macintosh (+) or other computer. Call for a quote.

**FOR SALE:** Apple Imagewriter—Dot Matrix Printer, \$350. Call (703) 281-5447 in Vienna, Va. ☎

## CLASSIFIEDS

**FOR SALE:** NEC 8023 Dot Matrix Printer, 120 cps, plus (free) Tymac parallel interface, plus (free) Minute Manual for the Dot Matrix Printer. \$199. Call Jim, Columbia, (301) 995-1166.

**FOR SALE:** 64K Apple ][+ with 2 Apple disk drives, Videx 80-col. card and Amdek monitor, \$650. Also available, Microsoft CP/M Board w/software, \$100; Echo II plus speech and music board, \$60; Saturn compatible 128K Ramboard, \$75. John Willis, Frederick (301) 353-4924 bus., (301) 694-9410 home.

**FOR SALE:** Dollars & Sense, \$60. Call Dan Adkins for information, (h) 822-8052 or (w) 252-5990.

**FOR SALE:** NEC 8201A Laptop Computer with 16K RAM and a parallel and serial interface, \$200; Prometheus ProModem 1200, \$200; Apple // Pascal 1.1, \$50; 80-column board with 64K RAM-Appicom, \$35; PFS Write, File, Report, Graph and Access, \$40 each. Call Charles at (703) 620-2055 and leave message.

**FOR SALE:** Ham radio/computer link "TERMINALL" by Macrotronics, Inc., for 48K Apple ][ or ][+. In operating condition complete with 6522 VIA card for any slot 1 through 7, user port cables and connectors, DOS 3.2 Terminall software diskette and manual. 110 or 220 60Hz Vac. Transmits and receives Morse up to 135 WPM, RTTY up to 100 WPM 5-level Baudot RTTY signals at 170Hz shift, and ASCII 110 Baud using 7 bits of info. Breakmode etc. Almost unused, \$180. Call Scorer, DC Metro 261-8426 or (301) 757-1702.

**FOR SALE:** Two-drive Mac 512 with Hyperdrive 10, Imagewriter, numeric and normal keyboards. Price \$3350 or best offer (am getting a company Mac). Send name, telephone number and questions to B. Business Data, Box 7604, Charlottesville, VA 22906.

**FOR SALE:** Macintosh 512 (upgraded from 128 with MacComer upgrade), \$775. Also available, Imagewriter with wide carriage, and "Fannymac fan". Call Jim Nathan, 951-4414.

**FOR SALE:** Apple Macintosh 512 with MacWrite, MacPaint and Megamax C Development System, \$1150. Call Gary at (days) 946-6296 or (evenings until 10PM) 946-3782.

**FOR SALE:** Applied Engineering RamWorks with 64K. Contact Bill Weingartner between 8:30 and 4:30 M-F at 746-7097.

**FOR SALE:** Novation AppleCat 300 baud (upgradeable to 1200) modem with firmware chip installed, expansion module, BSR controller, and Comware communications program. Much Apple // software including Spreadsheet 2.0; The Accountant; WAP, Novapple and Nibble disks; utility programs. Too much to list here. Call if you are looking for something, especially if it is not the latest. Many magazines including complete Softalk, most Nibble, many Call-A.P.P.L.E. and Creative Computing, several others. Some books including Apple ][+ manuals, What's Where in the Apple. Will consider all reasonable offers. Mark Pankin (703) 524-0937. ☎

# SIGNEWS

\* May 1986 \*

WAP

**Apple /// SIG** meets on the 4th Wednesday of the month at 7:30 PM in the Chamber of Commerce Bldg., 1615 H Street NW, DC. The May meeting will be on the 28th.

**Apple //c** meets each month after the regular WAP meeting.

**DisabledSIG** meets on the first Thursday of each month at the Chevy Chase Community Center, 7:00 PM. The next meeting will be on May 1.

**dPub SIG** (Desktop Publishing) will meet on Wednesday, May 7, at 7:30 PM in the PEPCO auditorium at 1900 Penn. Ave., NW.

**EdSIG** - the education special interest group - meets on the 4th Thursday of the month at the office, 7:30 PM. The next meeting will be on May 22.

**FEDSIG** meets on the last Wednesday of the month at 7:30 PM at the office. The April 30 meeting will be on GE, AppleLink/BusinessLink.

**ForthSIG** meets on the third Saturday of the month at the office, 12 Noon.

**GameSIG** meets on the first Thursday of each month at the office, 7:30 PM. The next meeting will be on May 1. See their news elsewhere in this issue.

**LISA/MacXL SIG** will meet at 8:30AM on May 24 just before the main WAP meeting.

**PIG**, the Pascal Interest Group, meets on the third Thursday of each month at the office, 8:00 PM. The next meeting will be on May 15.

**PI-SIG** meets on the third Monday of each month at the office, 8:00 PM.

**SigMac Programmers** meet on the 1st Thursday of each month at Our Lady of Lourdes School, 7500 Pearl Street, Bethesda, MD. Macintosh and Apple // meet together on the 4th Saturday (general meeting) at USUHS at 9:00 AM.

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

**Telecom SIG** meets after the regular WAP meeting on the 4th Saturday.

	SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
					1 SigMac 7:30PM-Lady of Lourdes; GameSIG-Off 7:30 PM	<-Thursday 1st contd. DisabledSIG 7PM-CCCC	3
4		5 Deadline for Journal Articles	6 Apple// Beginning Tutorial #1 7:30-9:00PM Office	7 dPubSIG 7:30PM PEPCO 1900 Pa NW	8STOCKSIG 8PM Office; FAC Slice 7:30 MRIID Ft.Detrick	9	10
11		12	13 Apple// Beginning Tutorial #2 7:30-9:00PM Office	14 Executive Board 7:30 PM Office	15 Pascal SIG 8:00 PM Office	16	17 FORTH-12 Noon-Off; Quetzl. Northrop Andrews AFB
18		19 Mac Begin. Tutorial #1 7-10 PM Office	20 Apple// Beginning Tutorial #3 7:30-9:00PM Office	21	22 EDSIG 7:30 PM Office	23	24 WAP Meeting - Apple // & Mac 9:00 USUHS
25		26 Office Closed Mac Begin. Tutorial #2 7-10 Office	27 BBS Comm. Office 7:30 PM	28 Apple/// 7:30PM Ch. of Comm.DC; FEDSIG-7:30 PM Office	29	30	31

\* June 1986 \*

WAP

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1		2	3	4	5 SigMac 7:30PM-Lady of Lourdes; DisabledSIG 7PM-CCCC ->	<-Thursday 5th contd. GameSIG 7:30PM-Off.	7
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15		16	17	18	19 Pascal SIG 8:00 PM Office	20	21 FORTH SIG 12 Noon Office
22		23 Mac Begin. Tutorial #1 7-10 PM Office	24 BBS Comm. 7:30 PM Office	25 Apple/// 7:30 Ch. of Comm.DC; FEDSIG-Off. 7:30PM	26 EDSIG 7:30 PM Office	27	28 WAP Meeting - Apple // & Mac 9:00 USUHS
29		30 Mac Begin. Tutorial #2 7-10 PM Office					

## APPLE TEAS by Amy T. Billingsley

What's an Apple Tea? An opportunity for Apple users to get together in a small group setting to learn about a specific phase of Apple computing, or just to share information and ask questions.

How can you have one in your area? Plan to host one at your home or another suitable location. Think of a topic of general interest, settle on a date, and call me at 622-2203. How could something so helpful be so simple! Start working on yours today.

The following teas are scheduled for April and May:

**Washington Apple Pi  
Northern Virginia Apple Tea  
Wednesday, April 30, 7 - 9 PM  
on APPLEWORKS - THE WORKS  
Database, Word Processing and Spreadsheets  
at the home of George & Delores Sall  
7850 Southdown Road  
Alexandria, VA 22308  
Refreshments**

Please RSVP to George Sall, 768-0212. Bring computer if convenient - the more hands on, the better. Get directions from George when you call. (It's on the river between Alexandria and Mt. Vernon - close to American Horticultural Society.)

**Washington Apple Pi  
Silver Spring, MD Apple Tea  
Thursday, May 8, 7:30 PM  
on GRAPHICS with Janice Hillman  
at the home of Ed and Varda Fink  
13325 Old Forge Road \*  
Silver Spring, MD 20904**

RSVP to the above address or call the Finks at (301) 384-3545. Bring computer if convenient.

\* Directions: Take Route 495 to New Hampshire Ave N. exit. Drive 4 miles to Randolph Road. Turn left. Drive to 1st traffic light, Locksley Lane. Turn right. Drive to 2nd street on your left, Old Forge Road. 13325 is on the right almost at the end of the street, 2 houses from Hawkesbury and the elementary school. ☺

## DVORAK TYPING TUTORIAL PROGRAM

WAP member Ken Davis (#4021) has published a Dvorak typing tutorial program entitled "Typing Well", which is distributed by Learning Well Co. of New York. This program retails for \$49.95 and the publisher is available at (800) 645-6564. Several of our members are enthusiastic about this program. A demonstration copy may be soon available at the office, and group purchase may be entertained by the publisher. ☺

## IT'S A GIRL!

Congratulations to long-time active WAP members Paula and Bernie Benson on the arrival of Lisa Ann (if it were a boy, it would have been MacXL). Lisa was born on March 25, weighing in at 6 lb. 8 oz. We wish them all the best!

Bernie wrote a program for the Apple to assist them in the natural birth process, and he plans to donate it to the Disketeria as WAP's first "birthing disk". ☺

## MINUTES

### Summary of April Board Meeting

The Washington Apple Pi Board met at the Pi offices on April 9, 1986. Gena Urban reported on progress with the new Membership Directory, which is in the first stages of preparation, and Lee Raesly on the status of the BBS system, for which a Corvus hard disk is awaited. The chairman noted that people who get Journals by mail receive them after they get to the newsstands. It had been suggested that the stores receive Journals of the preceding month, but the board voted to leave matters as they were. Jay Heller reported for the nominating committee, and a list of candidates was distributed. Tom Warrick reminded candidates of the arrangements for nominations at the April meeting. Non-binding referenda questions were solicited for the ballot forms: Bernie Benson suggested views on the new meeting format; Don Landing suggested questions on equipment configurations.

The board discussed the possibility of videotaping meetings for showing on cable TV, and a committee was set up to study the issue. Tom Warrick reported that the Metropolitan Washington Computer Federation had been meeting informally for five months, and there was considerable interest. The board voted in favor of continued participation by Apple Pi. Bruce Field volunteered to draw up guidelines and study the rate structure for making our projector available to other users. AppleLink is a technical library for Apple material. It is probable that WAP would be a pilot user group for the system. WAP has been invited to participate in the PC computer fair of the University of Maryland, and the board decided to request further information. A committee was set up to study the issue of the distribution of demo software. *Quetzalcoalkus northropi* will be making its Washington premiere flights on May 17 at Andrews Air Force Base. ☺

# WAP HOTLINE

For Use by WAP Members Only

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

<b>General</b> <b>Accounting Packages</b> Accountant(Dec.Sup.) BPI Programs Home Accountant Howardsoft (Tax) <b>APPLE SSC</b> Apple TechNotes AppleWorks <b>Communications Packages and Modems-Telecom.</b> Anchor Mark 12 Apple Modems ASCII Express BIZCOMP Modem General Hayes Smartmodem Robotics Modem Serial Comm. Card Smartcom I VisiTerm XTALK CP/M Comm. Computers, Specific Apple //c LISA/Mac XL Macintosh: General Chart Comm. & Modems Concertware Excel File Vision Hard Disk Helix Inside Mac Lang.-C,Pascal,XLisp MacDraw MacLion (DBMS) MacProject MacTerminal Multiplan MusicWorks OverVue Spreadsheets Spreadsheets&Graphics Sidekick Word Data Bases dBase II dBase II & III DB Master Data Perfect Data Factory General Manager PFS QuickFile II O-Pro-4 VisiPlot	John Day (301) 621-7543 Dave Harvey (703) 527-2704 Robert Martin (301) 498-6074 Mark Pankin (703) 524-0937 Jaxon Brown (301) 350-3283 Otis Greever (301) 262-5607 Leon Raesly (301) 460-0754 Leon Raesly (301) 460-0754 Otis Greever (301) 262-5607 Bernie Benson (301) 951-5294 Joe Chelena (703) 978-1816 Jay Jones (Balt.) (301) 969-1990 Ken Black (703) 369-3366 Ken DeVito (703) 960-0787 George Kinal (7-10) (202) 546-7270 Jeremy Parker (301) 229-2578 John Day (301) 621-7543 Dave Harvey (703) 527-2704 Jeremy Parker (301) 229-2578 Tom Nebiker (216) 867-7463 Bernie Benson (301) 951-5294 Joan B. Dunham * (301) 585-0989 Joan B. Dunham * (301) 585-0989 Harmon Pritchard (301) 972-4667 Steve Wildstrom (301) 564-0039 Bernie Benson (301) 951-5294 John Day (301) 621-7543 John Day (301) 621-7543 Steve Hunt (301) 262-9080 Donald Schmitt (717) 334-3265 Rob Clark (804) 872-9070 Terry Monks (703) 471-4610 Steve Hunt (301) 262-9080 Skip Horvath (703) 536-4091 David Morganstein (301) 972-4263 Mark Parkin (703) 524-0937 Steve Hunt (301) 262-9080 David Jamison(day) (301) 589-8841 Jim Berry (703) 662-0640 Harvey Levine (301) 299-9380 Jon Hardis (301) 330-1422 Don Landing (703) 690-1010 Carolyn Komada (703) 691-1986 Tom Berilla (301) 434-3256 Mark Miani (202) 362-8123 Jay Lucas (703) 751-3332 Jon Hardis (301) 330-1422 John Boblitz (301) 356-9384 Don Landing (703) 690-1010 Steve Hunt (301) 262-9080 Walt Francis (202) 966-5742 Skip Horvath (703) 536-4091 J.T.(Tom) DeMay Jr. (301) 779-4632 David Morganstein (301) 972-4263 Bob Pulgino (202) 797-0879 Ray Hobbs(7:30-10) (301) 490-7484 Marty Milrod (301) 464-2154 Paul Bublitz (301) 261-4124 John Staples (703) 893-5985 Ray Hobbs(7:30-10) (301) 490-7484 Jim Kellock (day) (301) 986-9522 Leon Raesly (301) 460-0754 Dave Einhorn (301) 593-8420 Leon Raesly (301) 460-0754 Bob Schmidt (301) 736-4698 Normand Bernache (301) 935-5617 Bill Etue (703) 620-2103 Ginny Spevak (202) 362-3887 J.J. Finkelstein (301) 652-9375 John Staples (703) 893-5985 Leon Raesly (301) 460-0754	<b>Games - Apple //</b> <b>Games - Mac</b> <b>Hard Disks</b> Corvus & Omninet Sider <b>Languages (A=Applesoft, I=Integer, P=Pascal, M=Machine)</b> A A A,I A A A,I,M A,I,M M P Forth LISP MS Basic Math/OR Applns. Monitor, RGB Operating Systems Apple DOS CP/M ProDOS <b>Printers</b> General Apple Color Plotter Apple Daisy Wheel Daisywriter 2000 IDS 460 Imagewriter MX-80 NEC 8023 Okidata Scribe Silentype Spreadsheets Lotus 1-2-3 Multiplan VisiCalc Sprdsh. 2.0(MagicCalc) SuperCalc Ver. 2.0 Stat. Packages Stock Market Time-Sharing Word Processors Apple Writer II Format II Gutenberg & Jr. Letter Perfect & Simply Perfect Magic Window and II Peach Text PIE Writer/Apple PIE ScreenWriter II Supertext II Word Handler Word Juggler //c Word Perfect Word Star	Charles Hall (301) 330-4052 Ron Wartow (301) 654-4439 Tom Vier (ABBS) (301) 986-8085 Jaxon Brown (301) 350-3283 Otis Greever (301) 262-5607 Louis Biggie (301) 967-3977 Peter Combes (301) 251-6369 Jeff Dillon (301) 422-6458 Richard Langston (301) 869-7466 Leon Raesly (301) 460-0754 Richard Untied (609) 596-8816 John Love (703) 569-2294 Raymond Hobbs (301) 490-7484 Donn Hoffman * (412) 578-8905 Bruce Field (301) 340-7038 Fred Naef (703) 471-1479 Ray Hobbs(7:30-10) (301) 490-7484 Mark Pankin (703) 524-0937 John Day (301) 621-7543 Richard Langston (301) 869-7466 John Love (703) 569-2294 Adam Robie (301) 460-6537 Richard Untied (609) 596-8816 Ray Hobbs (7:30-10) (301) 490-7484 Leon Raesly (301) 460-0754 Richard Langston (301) 869-7466 John Love (703) 569-2294 Walt Francis (202) 966-5742 Leon Raesly (301) 460-0754 Joan B. Dunham * (301) 585-0989 John Day (301) 621-7543 John Day (301) 621-7543 Bill Etue (703) 620-2103 Henry Greenc (202) 363-1797 Jeff Stetckluh (703) 979-8249 John Day (301) 621-7543 Jeff Dillon (301) 434-0405 Bill Mark (301) 779-8938 Michael Proffitt (301) 874-2270 Dan Robrish (301) 530-4202 Phil Leber (703) 378-4391 Bruce Field (301) 340-7038 Leon Raesly (301) 460-0754 Walt Francis (202) 966-5742 Walt Francis (202) 966-5742 Ray Hobbs(7:30-10) (301) 490-7484 Terry Prudden (301) 933-3065 Walt Francis (202) 966-5742 Leon Raesly (301) 460-0754 Leon Raesly (301) 460-0754 David Morganstein (301) 972-4263 Robert Wood (703) 893-9591 Dave Harvey (703) 527-2704 Walt Francis (202) 966-5742 Dianne Lorenz (301) 530-7881 Leon Raesly (301) 460-0754 Henry Donahoe (202) 298-9107 Neil Muncy Can. (416) 298-3964 Harris Silverstone (301) 435-3582 Leon Raesly (301) 460-0754 Joyce C. Little (301) 321-2989 Carl Eisen (703) 354-4837 Jim Graham (703) 643-1848 Peter Combes (301) 251-6369 E. E. Carter (202) 363-2342 Peter Rosden (301) 229-2288 Jon Vaupel (301) 977-3054 Carl Eisen (703) 354-4837 James Edwards (301) 585-3002 Leon Raesly (301) 460-0754 Dana Reil (301) 350-3283
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\* Calls up until midnight are ok.

# MEETING REPORT: March 22 1986

by Adrien Youell

The Apple // meeting provided diverse views of Information Appliance's SwyftCard. The presentation of Mr. Jef Raskin, Chief Executive Officer of Information Appliance and developer of SwyftCard, was faultless. Another view was presented by your reviewer. (Mr. Raskin's response to the review that appeared on page 58 of the April issue of the WAP Journal and to your reviewer's presentation at the meeting appears elsewhere in this issue.) The SwyftCard is available at a group purchase rate of \$66, and SwyftDisk for the Apple //c will be announced soon.

Peter Combes, our illustrious Secretary, had graciously consented to chair the session. Peter introduced Jef with great expertise and laid the foundations for the meeting with consummate flair. Dear Peter, through no fault of yours, it all fell about your ears. The meeting degenerated into a battlefield.

Mr. Raskin began a splendidly humorous presentation by explaining that his design is to make computing easier, or at least to get work done by not having to think of *computing*. If you want to delete a file do you really want to be asked "Are you sure?" Mr. Raskin said that one problem with user groups is that unfortunately they are necessary—to help fix your mistakes! The hardware should be patently at home with the worker. Also, he asked, when you wish to do a calculation why should you leave the electronic desktop of a powerful computer to add to your physical clutter by getting out a pocket calculator!

He demonstrated cursor movement as a search tool and showed how he used it in SwyftCard data as a data base function. He related his reputation as the fastest *gun* in teleconferencing but we were not able to set up a telecommunicating computer for demonstration.

Your reviewer then presented his experiences with SwyftCard. Members asked for confirmation of limitations mentioned in last month's Review; 40K disks and no CATALOG. All true. One review error corrected by Mr Raskin is that printing can be aborted by Control-Resct.

Take a product, tear it apart, sew it back together again and see what survived. Unfortunately due to time limitations, the *sewing together again* was incomplete as Jef experienced *system* difficulties in his rejoinder session. To comments of "yellow journalism" and much lifting of the computer lid he considered problems with the 80-Column card and possibly the printer controller. Conclusions were inconclusive.

We are very grateful for Mr. Raskin's visit (and that of Ms. Robin Samuelson, his associate). I am not sure if anyone won, but SwyftCard got a good showing and that is what the Club is for. This was a meeting that may be remembered when other memories have faded. A videotape of the meeting is available at the WAP office. Call in advance.

Of no less importance and deserving of a full report, the Macintosh session is described briefly because spreadsheets have been much discussed in the Journal, and because my audio recording failed! The able contributors should not feel slighted.

David Morganstein graciously accepted the chair for Mac Spreadsheets and led a most informative meeting. Bob Pulgino discussed the Multiplan upgrade (1.1), recommending it, and Ed Myerson demonstrated Click-On Worksheet, a desk accessory spreadsheet. Jazz remains blighted, unless the upgrade, v.1A (InfoWorld April 7th, page 11), and a price reduced to \$395 make it more attractive. We all agree the 'Hotview' function makes Jazz potentially very worthwhile. Everyone likes new product news and this was no less evident when Meade Pimsler demonstrated Microsoft Works, a four-part integrated package still to be released. Magnanimous thanks to Meade, not yet a member (!), who spent his morning with us to share his beta-test news; Meade consents to publication of his home number, (301) 599-1984. He particularly likes Works' word-processing feature that imports graphics, which can be 'placed' anywhere! This has got to be a product of which we must see more.

For completeness, I offer the following. At meeting deadline there was no confirmed information on Supercrunch. At \$295 (InfoWorld Feb 24, page 28 and April 7, page 33) Supercrunch may well be a product to consider seriously. Again from InfoWorld (March 17, page 3), there is wind of an Ashton-Tate super spreadsheet code-named "Glass."

If, at this stage in the game, we come to expect less innovation to excite Mac *aficionados*, Tony Anderson dumbfounded us all with Studio Session by MacNifty (see the ad in MACazine, Vol 3, No 3, March 1986, page 52). Studio Session is a music program to make your eyes water and your ears come out on stalks. Using digitised sound that appears to come from a visualised audio cassette recorder on your Mac screen, this MacNifty program, \$89.95, will really impress. I could go on!

The end is always a suitable place to accord Special Greetings to Special People. We were honored by the visit of Ellen Leanse, the Apple User Group Evangelist, who joined our meeting and participated in the Question and Answer sessions. Ellen blended in so well with us that it took me five hours to realize she was there. Tom Warrick, the President, was of course completely in control. It is a pleasure, and with some relief, to record that Apple Computer, Inc. is taking an interest in our work.

As a signoff, look to your bits and the bytes will take care of themselves. ☺

## WAP BBS Phone Numbers

System 1	986-8085
System 2	986-8086
System 3	986-4715
System 4	978-6098 *Change
System 6	(703) 450-6822
System 7	(301) 622-3131

☺

# SWYFTCARD REPLIES

by Jef Raskin, CEO, Information Appliance Inc.

It was great being invited to make a presentation at your monthly meeting, and I found your Users' Group to be composed of fine and friendly people, many of whom were kind enough to apologize for the rather strange criticisms accorded to SwyftWare in the meeting and in the April issue of your Journal. A number of people invited me to write a reply for this issue, so I have.

Actually, there were two articles about our product, one by Mr. Youell and one by Mr. Harvey. A lot of what they say turns out to be simply wrong.

Youell's verbal presentation was also misleading, as when he said, "You cannot stop a print in progress." Fact: to stop printing you simply "Press and hold the USE FRONT key, and while you hold it, press and release the RESET key." This information is found in no fewer than two places in our manual (pages 54 and 81), and is indexed under both "printing" and "stopping". In other words, it was no-hard-to-find secret trick of the system that he had missed. Here are some quotes from the printed reviews, followed by our comments.

## Comments on Adrien Youell's Article:

**Quote 1:** "A highly favorable (read glowing) review appeared in A+ in November 1985, page 86, which was realistically questioned in a letter to the magazine (February 1986, page 14). The SwyftCard has been advertised in A+ every month since October, apparently enthusiastically endorsed by WOZ".

**Comment:** The term 'apparently' is intended to cast doubt on whether Steve Wozniak really endorsed the product, and the paragraph is framed so as to minimize the fact that highly favorable reviews have appeared. Woz owns and likes our product. He has purchased ten additional SwyftCards at the retail price. The critical letter referred to by Youell was from a person who had never tried SwyftCard, as was pointed out in that same issue! The following month a SwyftCard user took exception to the critical letter.

**Quote 2:** "A+ Magazine advertisement states, 'SwyftCard finds and displays any piece of information...in less than 300 milliseconds'. So why isn't this page miraculously self-illuminating?"

**Comment:** SwyftCard's 'LEAP' (a fast way to move the cursor and retrieve information) never does take longer than 300 milliseconds. Why this remark? Our claim is simply true, as he would have found out if he had used a stopwatch.

**Quote 3:** "I have been using SwyftCard version 1.21 1985 for several months..."

**Comment:** There is not now, nor was there ever a version 1.21.

**Quote 4:** "The SwyftCard package contains... a copy-protected, double-sided 5 1/4 disk with an elegant tutorial..."

**Comment:** The disk is not copy-protected.

**Quote 5:** "Control becomes 'USE FRONT' (which is the most unnecessary, confusing change-for-the-sake-of-change...)"

**Comment:** We place the labels for the five commands on the front of five keys. By making a label that has both the words CONTROL and USE FRONT on it, users of old-style software still have their label, but novices can be told, "To operate a command on the front of a key, just hold down the USE FRONT button and tap the key with the command on it." This decreases both confusion and mistakes. (It is not change-for-the-sake-of-change; it is change based on observing the problems of real users.)

**Quote 6:** "Printer set-up is always a most important consideration in assessing any new productivity program."

**Comment:** Since printer set-up is done only once, it has negligible impact on productivity. Over 30 models of printers require no setup at all. Almost all of Youell's presentation at the meeting was about how he failed to get his printer to work with SwyftCard. Printer set-up is always a pain, and SwyftWare is probably average (definitely not inferior) in this regard, and above average in giving the specific details for a very large number (over 60) of printers in our manual.

**Quote 7:** "As Swyftcard is its own operating system the user is placed way out on a limb as regards text compatibility with word processors if files cannot be shared (easily)."

**Comment:** Notice the weasel-word 'if'. He does not say that files cannot be easily shared; he hints that they cannot. In fact, the ProDOS conversion utility supplied with SwyftCard allows them to be shared easily.

**Quote 8:** "I like the mouse-driven I-beam and scroll bar of MacWrite, which get me round a document faster than [SwyftCard's LEAP mechanism]."

**Comment:** This speculation regarding speed is wrong. LEAPing objectively performs much faster than the mouse. Had Youell, as we have, studied the user interface literature and done actual timings, he would have found that LEAPing is, in fact, about twice as fast as a mouse on-page, and even faster off-page.

**Quote 9:** "I found that logging-on to BBS works but is tedious."

**Comment:** Here's what you do (assuming a Hayes-compatible modem): Type the Hayes code and phone number, your password, and whatever else the BBS requires to get you on-line. (You have to do this just once no matter how many times you want to sign on.) Now, to sign on, all you do is highlight the phone number and press SEND. When you get the connect, highlight the password (or whatever the BBS requires) and press SEND.

**Quotes 10 and 11:** "Typing and quickly highlighting text [in an on-line two way conversation] gets one into a nervous twitch."

"The biggest intuitive problem is to highlight text to SEND..."

**Comment:** All you have to do is to type the text and press SEND. You DO NOT have to highlight. He correctly says, earlier in his article, that highlighting is automatic with the SEND command (p.29, in the paragraph beginning 'How It Works').

Quote 12: "A single line feed is sent by PR\$=CHRS(1), without a '+', as indicated in the manual, page 62."

Comment: This is just plain wrong. The manual actually says on page 62: "If your printer keeps printing over and over on the same line, then change the part of the message below that says

```
PR$=CHRS(0)+
```

into

```
PR$= CHRS(1)+
```

and leave the rest the same as shown." Note that it does not say that the '+' sign is to be omitted. You are to simply change the '0' to a '1' and leave the rest the same as is shown in the manual. Since the reader probably does not have one of our SwyftCard manuals, how is she or he to know the reviewer is misquoting?

#### Comments on Dave Harvey's Article:

Quote 1: "I found an error in the manual, in that the setting specified for the Super Serial Card dip switches indicates 7 bits...but the manual states that the default for the program itself is 8 data bits."

Comment: 8 bits it says, 8 bits it is. The Super Serial Card settings are irrelevant since the software can (and in this case does) reset them. Since, as he says, "The Apple standard [is]... 7[bits]", we put the switches in a position that will run with most other software. So SwyftCard works with almost all bulletin boards and data services and ALSO with most Apple software without forcing the user to open the computer to reset the switches.

Quote 2: "...when the buffer...is full, it will not accept anymore characters and just throws them away."

Comment: This simply is not true. SwyftCard sends out an X-OFF to stop the other computer from sending. If X-ON/X-OFF protocol is available (as with almost every system in this country) no characters are lost at all.

Quotes 3 and 4: "...the fact that when you type characters on the keyboard, nothing is transmitted until you hit the SEND key or until you have typed 80 characters."

"The only problem encountered was that whatever was typed and which appeared on the screen, didn't go out until I pressed SEND."

Comment: Note that Harvey did not have Youell's problem of having to highlight before SENDING. What Harvey calls a "problem" of nothing going out until you press SEND is in our opinion a blessing. Many telecom packages send out every character as you type, right or wrong. With SwyftCard you type, edit if you so desire, and then press SEND. (SwyftCard does not force you to send each 80 character line as Quote 3 implies). Also, if you have a pre-written comment you can SEND it without interrupting the on-line conversation.

Quote 5: "Sometimes the screen got messed-up because Adrien had just sent something..."

Comment: Even talking on the phone gets messed up if both parties try to talk at the same time.

Quote 6: "I also noticed that there is no easy way to get the modem to hang-up...You must first type '+++' and then 'ATH' ....This procedure is not documented."

Comment: Not fair. The '+++' and 'ATH' are required by the Hayes modem, not SwyftCard. It is documented in the

contd. on pg 12

# The Generic PC:

## Fast Relief for IBM Sticker Shock

by Bud Stölker

Here's good news if you're shopping for an IBM PC-compatible computer: you can now buy more machine than you expected to get—for less money than you expected to pay.

You can, in fact, have your PC custom-tailored to your requirements, from software right down to the circuit board- and chip-level, at a price less than that of an off-the-shelf PC. And your machine will be not only cheaper; *it will be better.*

I can design for you an IBM PC/XT-compatible that adheres fully to IBM hardware and software standards, yet enhances those standards in ways that do not interfere with conventional operation or future expansion.

Your generic version of the IBM PC/XT will come with each component individually selected for cost-effectiveness, and tested for performance and quality. My PC's are better systems dollar-for-dollar than any other IBM clone you'll find.

And now you can get as much as three megabytes of free programs with the computer! Included is software for word processing, project, data base, and spreadsheet management, investment analysis, telecommunications, graphics for design, charting, and advertising, a Sidekick-like notepad and alarm clock, and even an array of video games. Hard disk systems have all software properly installed and linked by appropriate custom help screens.

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# EDSIG NEWS

by Peter Combes

## EDSIG Calendar

**Thursday, April 24, at 7.30 p.m.** - "Magazines on Disk". Several publishers are bringing out monthly material on disk, much of it for schoolchildren. We shall be looking at review copies of this material.

**Thursday, May 23, at 7.30 p.m.** - "Computer Camps for this Summer". Invited guests discuss their plans for holding computer camps in 1986.

**Thursday, June 26, at 7.30 p.m.** - Special visit, to be announced. Call 251-6369 for details of location.

EDSIG meetings are normally held at the Washington Apple Pi offices at 8227 Woodmont Avenue, Bethesda, MD.

## Meeting Reports

**Thursday, February 27** - Would you buy an educational computer package from this lady?

Patricia Kirby spoke on the "Adventures and Misadventures of an Educational Computer Marketing Consultant." She has demonstrated educational uses of the computer in people's homes, and, to a lesser extent, in schools. Pat, who has owned a Macintosh, worked for Tandy Home Education Systems (THES) for three months. On the day she was interviewed for the job, she wrote to Apple saying, "I only wish we had something similar, or I wouldn't be going to Tandy...."

Pat's experience was that many parents have no idea what a computer can do for their children educationally at home, and they do not know how to choose a computer and software for their children. THES—until its demise in January—was the only computer firm to make "house calls", to allow parents to see and try software for children in the privacy of their homes before purchase. It also packaged machine and software at appropriate age and grade levels, as recommended by computer-aware educators. Parents who invited Tandy consultants to their homes were usually quite appreciative of the expensive information—research findings in particular—shown on interactive demonstration disks or colorful pictorial flipcharts.

Each family also received a "computer awareness kit" with:

- 1) a fold out Parcheesi-like game (goal—to see who could collect all four types of software first)
- 2) computer music record
- 3) colorable poster of the parts of a computer.
- 4) slide rule dictionary of common computer terms
- 5) generic (non-Tandy-specific) booklet on how to choose an educational computer.

Pat found the game, record, and poster helped to keep the smaller children quiet while she did her "up-front presentation" to parents. This consisted of an explanation of why Tandy had set up its Home Education systems—the candid statement that, because consultants visited so many families, they could come but once—if the family would like Tandy's home educational computer package, they should decide that evening in order to receive the discount that THES offered. (While they could go to Radio Shack any time they liked, and if they decided on Tandy's materials later, they could not get

everything in a package, nor would they be likely to find computer people with the same educational software. "And the only thing our presentation will cost you..... is a glass of water," the consultant would add—usually changed to "a cup of coffee" for later evening appointments in the far reaches of Virginia 50 miles from home.

Pat described adventuresome dark evenings in winding housing developments, vainly trying to find homes with deep black numbers, lugging the monitor and a suitcase on wheels up three flights of stairs—the challenges of families with children of different age and interest groups, intent only on getting their hands on the computer.

The school presentations were equally memorable. These were presentations of computer and software to children in class groups at the end of which children were asked to bring "special delivery" letters to their parents, offering them a chance to have a computer marketing consultant visit, at no obligation. The children's enthusiasm, of course, was a key to the parents' interest—but most of the parents who did invite the consultants had already considered a home computer for their children, and found the consultants a good avenue of information they could not easily obtain in one place elsewhere.

Tandy closed its Home Education Systems in early 1986 after only one year's experiment, evidently assuming it was more cost-effective to market through Radio Shack and not one-on-one in the home. Pat voiced a hope that Radio Shacks would begin—or in some cases, continue—hosting parent seminars on home educational computers. She said that Tandy does indeed have a good product, though she was glad to be "back in the Apple fold". The late nights of the Tandy experience had cut her off from EDSIG activities for several months.

"I see indications that Apple is now going after the home educational computer market," she said. "Perhaps they will take cues from Tandy that will help. There is such a gap in making parents aware and knowledgeable."

## **Thursday, March 27** - "Software"

Virginia Caesar, Pat Kirby, and Randy Zittel demonstrated several kinds of educational software. Randy Zittel's detailed review of "Grademaster" follows on the next page. ☞

SwyftCard Replies contd. from pg 11

Hayes manual, where it belongs. Page 82 of the SwyftCard manual explains that Control-Reset causes the modem to hang-up.

**SUMMARY:** A number of quotes originally in this reply were edited out to conform to space requirements. What remains is just a sampling of the errors in the reviews. Messrs. Youell and Harvey have not done their homework. Information Appliance would welcome a balanced and responsible review in a future issue of the WAP Journal.

# Operant Systems

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# GRADEMASTER: A Review

by Randy C. Zittel

GRADEMASTER, "an easy and professional grade management package....." was provided to me for review by Peter Combes, chairman of the EDSIG. Having recently received the package, Peter was interested in having a number of people attempt to use it.

I have reviewed some other grade management software from the Wisconsin Educational Consortium, and am involved in the computer program at Rockledge Elementary School, here in Woodbridge. Rockledge has a number of Apples, both black and white, and many of the teachers are keenly interested in using them as a teaching aid as well as for their own record-keeping purposes. I enlisted the aid of two Rockledge teachers, Mrs. Kathy Rothenberg and Mrs. Barbara Blevins, as well as my wife Meri Lou, who has her teaching and reading specialty certificates.

I have been trying for years to interest my wife in my "Apple obsession", but her interest has always been elsewhere—a constant requirement to choose between my Apple and my wife. Well...she did win occasionally. My three teacher panel found, from reviewing the capabilities of the package, a very impressive tool to handle all of the teacher's needs; even a labeling print option for marking file labels for disks and report covers was included. However, we all agonized over learning the package, because the authors' educational terminology relative to the program flow was confusing. After many hours of trial and error, we were finally able to load a test class and grade it.

The very night I got the package from Peter, I sat down and booted it up. I skimmed through the manual, and found it written with frequent references to the real-world academic situations of Re Kramer, coauthor and high school science department chairwoman. She was frustrated from a lack of software in this particular area, so she designed the package and her "programmer/engineer husband" wrote the software. From reading the manual it appeared to be very complex in its ability to mold an entire curriculum database around any number of academic requirements. The manual is written with some depth, and printed well; no barely-readable pictures of the intended screen displays. The package is customized to your specific system hardware, and will run on a fairly limited system, since most school teachers don't have access to unlimited hardware. It does automatically check for system type upon booting, ][, ][+, //e, //c, and will use the 80-column capability of the //e or //c. The backside of the program disk has a "free running" DEMO which steps through the many capabilities of the package, and will pause with the Space Bar to allow you to study a format. The first chapter has a number of simplified flow charts to allow you to see how one menu leads to another, but we generally found this difficult to follow until you got stuck in a later chapter, and you puzzled it out flipping back and forth. The program appears to be written in BASIC, since many of the machine calculations experience a noticeable delay. It was most annoying to hit a menu option key, and experience a 10 second delay while some BASIC calculation was made,

BEFORE anything would happen. I continuously wondered if I'd locked up the program somehow. Since the program disk is copy protected, I wasn't able to catalog it; CATALOG brings up a cute logo up listing the software credits. After working with the package awhile, this became annoying, along with the distinct inconsistency of data input. Some questions take the answer without a <CR> while some do. We found this particularly annoying, since we kept thinking we had hit a wrong key, and could never tell which inputs were with/without a <CR>.

The package has a nice set of menus at every step. I found some of the menu options very obscure, even after rereading the manual, since there are no on-screen help command options. Going from one menu to another requires reaccessing the drives; one for the program disk and one for a data disk. The program apparently consists of many subprograms; most non-resident in memory at the same time. So, switching between submenus usually requires 20 seconds of Program Disk access time. If you have only one drive, then the constant shuffling of disks would be tedious. A delay do-loop between each menu, while a title is displayed before the upcoming menu, is unnecessary; there is always space for the extended menu title above each menu, and there is no way around the title flash delay.

The package does have a very extensive capability to customize your grading needs a great deal. You set up your class information, with student names, numbers, and individual comments, for as many classes as you want. If you have multiple classes under one grade structure, i.e. number of homework assignments; exams; lab reports; and coursework percentages, then you can apply that across the board on each data disk. In the set up procedure, you must define what the grades are based on, and the course percentage for each. The options are great: homework, tests, quizzes, lab reports, research projects, notebooks, projects, book reports, classwork, final exam, and other. To each item you assign a percentage for each. GRADEMASTER even checks the percentage to make sure you have 100%, but you can exceed that when entering the actual scores, in case you decide to give extra credit on an item. My wife initially disliked the objective way you "simply enter the scores, and the final grades pop out", but she quickly saw how you can leave a percentage for subjective teach credit; more useful (and legal) at the elementary level than the collegiate.

Once the classes are structured, and the courses are laid out, you must also breakdown what A's, B's, etc. are worth. The screen for this starts with a set of defaults, and you can go strictly numerically (%), % to letter conversion, or a pass/fail cutoff line. The letter system accepts letter +/-'s or any variation thereof.

The report printing options claimed to be very flexible, with the opportunity to print reports at any point in time. The reports will calculate information to the point provided, and give a breakdown to that point. A complete class roster can be provided with or without names; for posting after a certain

contd.

grading period. The student numbering system is designed by you, and can be Social Security Numbers, or any other numerical format. This does provide a frequently used method of anonymity which I saw at the college level. There is a "Scratch Pad" which allows you to save quick notes, and provides various places to save progress comments for individual students and for a whole class. There is a statistical analysis report section where each item's grades can be broken down and displayed for "THE BELL CURVE" (my lifelong nemesis which we all fight) and all reports can be displayed on the screen BEFORE printing.

I was particularly impressed by the Scratch Pad's capability to summarize, with comments, all required coursework for a neat listing to "your principal" or to your coursebook. The multiple styled progress reports, individually for the whole course, or the whole class with a huge matrix of scores and course-graded items, were impressive. We developed a sample class of 6 students, with a full breakdown of course weights, requirements, and I.D.'s, but were frequently told by the program that an item was missing. The error lines for the program were meager, rarely giving a proper indication of the problem, but these errors were based on incorrect or missing data; the program never locked up or crashed. The RESET button is overridden, so I never accidentally exited the program. The reports are nice and direct, and blank "templates" can be made, omitting the grades, to be used as worksheets on which to write your scores for subsequent data entry.

Overall, I was impressed with the variety and complexity of the program, and can certainly see its use in the classroom. However, you must fully familiarize yourself with its operation in order to insure you know HOW it calculates grades so that it performs the way you want it to, e.g. are data-entered scores raw or percentages? The slowness is annoying, but the package is complete and provides a typed summary in many formats. The package is most useful at the high school and college level, but I think it can be pared down for use in elementary grades.

GRADEMASTER is sold by ENCODE (Micro-vision), P.O.Box 5311, Kingwood, TX 77325-5311. So, if you're interested in this program, give Peter Combes a ring on the BBS. Where I found it difficult to follow, another may see it clearly; I know the engineering code I wrote a couple of years ago was clear to me, but mud to the students who initially tested

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# APPLE /// NEWS

by David Ottalini, /// SIG Co-Chairman

The top news of the month is the recent meeting three members of your /// SIG held with Apple's Club Liaison Guru Ellen Leanse. She agreed to meet with Co-Chairman Bill Rosenmund, /// SIG Secretary Charlene Ryan and me on the Monday following last month's regular WAP meeting.

The primary reason for the session was to discuss the Apple /// Community's concerns about Apple's lack of support for the ///. We emphasized that we wanted to continue our relationship with Apple and felt it was in Apple's best interests to continue working with us in some fashion, even though actual technical support has been given to Sun Data.

Our meeting lasted more than an hour and I think provided Ellen with a better understanding of what we ///ers are thinking about and doing now. We discussed ways to get SOS released into either the public domain or into the hands of licensed programmers so that it may be upgraded. We also asked for a complete accounting of what is and is not in the public domain at the present time.

Ellen emphasized that Apple and the /// have parted ways and will not be resurrected (we did not really expect that Apple would bring it back). But we did ask what would be involved if someone else wanted to produce a /// clone if they had the resources to do that. We also discussed how the /// Community is continuing to bring the /// closer to compatibility with the //e and Macintosh—namely through such things as the ///+//e card, the //e Mouse and the 800K 3.5" Unidisk.

We talked a bit about the other /// groups around the country as well, including TAU, ATUNC, MAUG, Joe Dobrowolski, and the Orange Apple Users Group.

The bottom line on all this is that we opened a dialog with someone within Apple that was willing to listen. Through most of our one hour plus session, Ellen Leanse listened and at the end, told us she considered it to be only the start of an on-going dialog. She also mentioned that some form of Apple /// Consortium or other "Umbrella Unit" (my words) might be considered at some point by the /// Community to present a single voice to Apple. By the time you read this, we hope to have some initial feedback to our questions. Ellen mentioned that her first job upon returning to Cupertino was to meet with Jim Volkmar who oversees used and obsolete equipment (also see note below) and with Chris Espinosa, whom she said deals with operating systems. Hopefully we'll know more by the next meeting and can report to you then.

I think all of us came away feeling very positive about the session and the dialog it has reopened with at least one person at Apple. There were no burned bridges, just a few openly expressed wishes that the /// could have continued to be part of the Apple product line. Since that won't be happening, the next best thing is to get Apple to give its orphan a little help as it makes its way into the cold, cruel world.

## New Meeting Location

We had 13 SIG members at the first meeting on our new day, week and in our new location, the National Chamber of

Commerce. It looks like it will turn into an excellent meeting facility—and we'd like to invite all /// SIG members to plan on attending (4th Wednesdays at 7:30 PM). By the way, one of the business items agreed upon was the purchase of a series of lessons on video tape concerning the set up and use of the Apple ///. We hope to have the tape for use in the WAP library (and viewing on the club's VHS machine) very soon.

And while I'm on the subject, member Jim Salerno has agreed to help put our own /// library together in the WAP office. We'll have our own section where books, magazines, newsletters, etc. can be found and used by all.

## TAU Starter Kit for New /// Owners

TAU, the Third Apple Users Group in Wheaton, Illinois is calling for help from all ///ers to contribute to a planned series of "Apple /// Starter Kits." The Starter Kit will be in the form of notebooks and in some cases will contain diskettes. The idea, as described in TAU Tales, is to develop a public domain /// information source to assist new owners to obtain the most useful information at the cheapest possible cost. The idea is excellent and should have been done long ago. So if any of you /// SIG members would like to contribute information/articles that a true novice /// user could read and understand please write to them for more information. TAU's Address is: TAU c/o Lavona Rann, 1113 Wheaton Oaks Dr., Wheaton, IL 60187.

The best part of all this is that once the kits start coming out, they will be available for all /// groups to reproduce and sell! And if the first series works out, more advanced kits will be planned. TAU is also an excellent /// Users Group that has a great newsletter (TAU Tales) and an outstanding PD library.

## Directory Labler ///

In February's Journal, I provided you with the wrong address for the folks who produce Directory Labler ///. The correct address is: Sourceware, 6899 South Yukon Court, Littleton, CO 80123.

/// SIG member and the former President of the Apple Core of Dallas, Edward Aymond Jr. wrote a few comments about the program, which I will pass along to you now in edited form:

(Directory Labler ///) is a very fine program and does exactly as advertised if you have an MX80/100, Apple Dot Matrix or an Imagewriter. Otherwise, it does not print. I have the Epson MX80 with the Grafrax+ working with the UPIC board (and found that this would) not print anything. (An Okidata /93 set up through the UPIC also would not print using the program, nor would a DMP clone). Jim Anderson at CompuCRAFT was very helpful and finally suggested that I install drivers that worked on other programs onto their disks. We did this and were able to print with the clone DMP, except the spacing was way off on printing multiple labels for the same disk.

Finally, Mr. Aymond indicated he had to do some  
contd.

modifications to the program so that it would communicate with the Okidata. But he indicates there is still one problem—once modified, the escape cursor editing feature of Business Basic had been disabled. He was able to fix that though a change in the Request.Inv Invokable Module.

**/// Books Discontinued**

In a separate letter, Mr. Aymond indicated that John Wiley and Sons have discontinued publishing both of the Eddie Adamis Business Basic books. That's a loss, since they are the only true non-Apple texts dealing specifically with Business Basic (although not the 1.23 version). I'm looking into getting the publisher to put the texts into the public domain and will keep you up to date on that.

**/// Expansion Box**

For those of you who read On Three, you know that they are considering a project to build a true expansion box (with four or more slots) for the /// that would handle both slow and fast cards. It would include fixes for SOS and the System Utilities so that the box would have its own power supply and could be accessed (it would plug into one of the four internal /// slots).

On MAUG, there's been an effort by Frank Moore (of the /// Magazine) to get some sort of commitment from ///ers, through a group purchase, to get the project going. That means a commitment to purchase at least 100 of the boxes. That also means a cost of around \$400 up front, that would be put into an interest-bearing account. It is felt that there would be the incentive for On Three to go ahead with the project with the money committed in such a manner. The only problem is how long such a project would actually take. The deal here is that if it does not fly, then you get your money back with interest. For more information, contact Frank Moore directly at 3201 Murchison Way, Carmichael, CA. 95608.

Also on the burner through MAUG, a possible group purchase of 512K memory upgrades.

**/// Review Programs**

"Macstuff" is a brand new program by Apollo Software that is causing quite a lot of excitement in the /// Community. It's a series of Pascal intrinsic programs that a programmer can use to develop Mac-like screens with pull-down menus, Mouse functions, etc. The /// SIG has obtained a review copy and member Tom Bartkiewicz has agreed to take a look at the program and put it through its paces for an article in the Journal. Also from Apollo, Font Generator ///, which we have also received for review. It's our hope to obtain more programs that can be reviewed for Journal articles in the future.

**Super Apple Writer Fix**

Since this first appeared on MAUG (thanks to Daryl Anderson of D.A.Datasystems), the word on how to fix the .sp (single page) bug in Super Apple Writer has pretty much gotten out to the /// masses. I'll pass along here that I used Dan Wade's SOS Block Editor (for the first time really) and was able to make the repair with very little difficulty. His editor works under Pascal and allows you to specify what file you want to look at and edit. It just so happens that the

SOS.Interp file for Super Apple Writer has the bug problem in the very first block, so all you have to do is specify the file (.d2/SOS.Interp) and the first block is brought up on the screen. Then you simply move the cursor to the 13th bit on the first line (the "header" it's called, because the first line contains the header information), press the space bar to go into edit mode, change the "00" to hex '10 (you type in 16 decimal and the program converts it for you). Then all you have to do is save the block back onto disk. Sounds more difficult than it really is. Basically, the problem was that the program didn't allow for enough memory to let the single page feature work correctly. Adding 16 bytes takes care of that.

**Finally...**

A note I read in the April InCider indicated that Apple has a return policy with schools around the country wherein they can turn in Apple //s, ///s, Commodores, IBMs and other computers (and even some typewriters) to get a credit towards a new Apple system. The credit could run up to about \$200.00 (the best price for a /// right now is \$450 or so...).

And what happens to all those machines? A third party vendor will refurbish them and then they will be sold by a company called Microcomputer Inventory Exchange in Santa Barbara, California. It is a company that, like the Rasmus organization here, markets used computer hardware and software. (They recently held a giant ten million dollar inventory sale for Computer Land in Orange County, California). I talked by phone to MIE representative Jim Parsons who said it would take sixty to ninety days to get the program up and running. Once we can get some additional information, we'll pass it along. ☺

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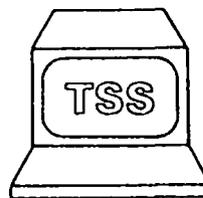
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# UNIDISK 3.5 FOR THE APPLE ///

by Tom Bartkiewicz

When Apple announced the UniDisk 3.5, it appeared that Apple /// users were going to be left without the use of this new device. Fortunately, however, the people from On-Three Magazine have created a device driver that will allow the UniDisk to be used with the Apple //. The device driver communicates to the UniDisk through the Apple //e (LIRON) interface card. On-Three sells the device driver, UniDisk, and interface card for \$499. Since the retail price of the UniDisk and interface card is set at \$565 by Apple, On-Three is providing good incentive to purchase the UniDisk and device driver package from them. However, if you can find the UniDisk and interface card for less at a local dealer or through a mail-order house, you can purchase the device driver alone from On-Three for \$50.

The UniDisk is a 3.5-inch double-sided disk drive with a formatted capacity of 800K. This is almost six times the capacity of the standard 5.25 inch drives. In addition to providing the larger storage space, the UniDisk offers increased speed over the internal drive. The following table illustrates the improved file access times (in seconds) that are accomplished with the UniDisk:

## Accessing 82K /// E-Z Pieces Wordprocessor Document

	.D1	.U1	Difference
File Read	43	35	19%
File Write	52	39	25%

The device driver sold by On-Three is provided on an unprotected 5.25 inch floppy along with a copy of the System Utilities program with SOS.DRIVER already configured for the UniDisk. The default configuration calls for the UniDisk to be installed in slot three. The driver code file is also provided as a separate file. This driver file may be used to add the UniDisk device driver to all your boot disks. The driver currently supports two UniDisk drives daisy chained together. (On-Three says they can provide a driver which will support four UniDisks.) Following Apple's drive naming convention, the first UniDisk drive is called ".U1" by the system and the second is called ".U2".

The 29-page user's manual provided with the device driver is very thorough in its description of the entire installation process. Even if this is the first peripheral that you have installed, you will have no problems following the step-by-step procedures. The documentation covers everything from the hardware installation and how to add the device driver, to your disks, to using the UniDisk with Catalyst and Selector //. However, should you need additional assistance, On-Three supplies very good technical support.

The entire UniDisk installation procedure takes about 20 minutes. The installation is simply a matter of:

1. Inserting the LIRON interface card into one of your Apple ///s empty slots (slot three is the default).
2. Connecting the drive to the interface card.
3. Booting a backed up copy of the disk supplied by On-Three.
4. Changing the driver configuration if the LIRON card is installed in any device other than slot three.

5. Formatting a 3.5 inch floppy in the UniDisk to insure proper installation.

Once installation verification is complete, you must add the UniDisk driver to all your SOS.DRIVER files. This is accomplished with the System Configuration Program (SCP) in the System Utilities program.

The only problem found with the UniDisk and driver has been documented in the users manual. The problem concerns a problem of interfacing a //e product to the //. Since the Apple //e is not an interrupt driven computer, the LIRON interface card does not expect to be interrupted while accessing the UniDisk. The device driver turns off interrupts to prevent the interrupt-driven Apple /// from stealing processor time from the LIRON, (such as when a key is pressed or characters come to the serial port). This means that some characters entered at the keyboard may not be recognized while the UniDisk is reading or writing a file. The solution recommended by On-Three is to not use the type-ahead feature of SOS while the UniDisk is operating. This is a small price to pay for the use of this device, and unfortunately, it is another burden we must carry since Apple stopped support of the //.

Even though the UniDisk and device driver are both solid products, why should you consider the purchase of a UniDisk for the Apple ///? The UniDisk 3.5:

- Performs effectively as a backup device for a Profile or other hard disk drive.
- Provides 800K of removable storage which performs better than the standard Disk /// drives.
- Uses the smaller and more durable 3.5 inch diskettes.
- Allows continued file transfer compatibility via magnetic media with the Apple // product line.
- Allows future file transfer compatibility via magnetic media with the Macintosh once On-Three completes work on their Mac to Apple /// conversion utility. ☺

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# LETTER TO THE EDITOR

Dear Editor:

This letter is addressed to all WAP members who are thinking about writing articles about ProDos, the newest Apple // family operating system.

You may not realize it, but ProDos was actually developed from SOS, the Sophisticated Operating System of the Apple ///. What that means is that any file created on an Apple // running under ProDos and saved to disk is directly portable over to the Apple /// (AppleWorks, Apple Writer, Quick File, etc.). In addition, any program can contain both the Apple // and /// versions on the same disk! The machines, upon boot-up, look to see which Apple they are in and load the appropriate program. There are two excellent books on ProDos that have sections dealing with just how compatible ProDos and SOS really are: Inside Apple's ProDos by John Campbell and Beneath Apple ProDos by Don Worth and Pieter Lechner.

I guess what I am saying is that there is much to gain by users of both machines by recognizing (and letting people know) that there are many similarities—that we can all gain through sharing. For example, as the ProDos PD library grows, there are many disks we, as ///ers, will be able to use directly (like the 1985 Tax Forms disk). And when our /// PD library gets underway shortly, there are many files // family folks will be able to use directly. We all gain from the exchange.

I'd also like to request that whenever possible, if a // version of a program is being reviewed, and a /// version exists, you should mention that along with the differences. Also in your reviews of new PD ProDos disks, mention that their files can also be accessed by /// users. I, or any other of the /// SIG, would be happy to help in this.

More and more first-time users are buying used Apple ///s for home and small business purposes. They want to get as much out of their machines as possible. The /// SIG is here to help them do that (as well as provide help and support for our more established users). But we also want all WAP // family members to know the /// remains part of their 6502 family and we'd like to work with you folks for the betterment of everyone.

David Ottalini, /// SIG Co-Chairman



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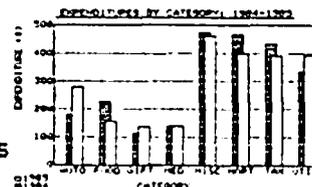
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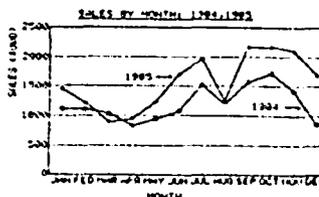
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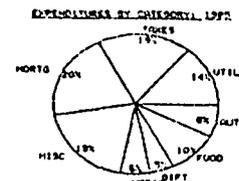
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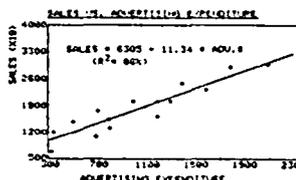
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# Q & A

by Bruce F. Field



William Hanna has some followup on a problem I wrote about a few months ago.

"I would like to comment on your answer to the person who wrote about missing keystrokes with Apple Writer II. I use this program extensively and I have not had the problem that he describes. I don't believe that the problem is software related for the following reasons.

"Apple Writer II puts all text below the cursor position in low RAM, and everything after the cursor in high RAM. The no man's land in between is where text is added or deleted, so there is no great amount of memory movement while text is being entered. When the cursor is moved, either via Escape commands or Control "B" or "E", the text is then moved from low or high memory, leaving the cursor (and all of free memory) in the middle. But of course nothing is being entered at that time. Apple Writer II uses a 64 character input buffer, which I think would be difficult to overrun. Apple Writer II uses no monitor routines for normal text processing, although it is possible that the 80-column firmware could have some effect on things.

"I suspect, though, that his problem is hardware related, such as dust on the keyboard contacts. I have had this trouble."

Thanks William, we appreciate the thoroughness of your answer. Of course, the easiest way for our reader to check your solution is to try his program on a different Apple.

Jack James also wrote with the solution to the problem with an Epson RX-80 printer printing only in italics with a //c.

"The problem is due to (1) the Apple outputting ASCII with MSB=1 (BFF note, the infamous eighth bit) and (2) the RX80 interpreting ASCII codes with MSB=1 as italics. I have been unable to find a direct reference to this latter point in the RX80 User's Manual, but Appendix A shows italic characters for ASCII codes above 127. Your questioner's setting his interface to 7 data bits and 2 stop bits works because the stop bits look like zeros and the first stop bit looks like the 8th data bit (i.e., MSB) to the RX80. Commercial programs will work satisfactorily if they output the ASCII codes with MSB=0 without going through the Apple's output routine that likes to set MSB=1.

"Epson Technical Support and a knowledgeable Apple dealer have confirmed for me that this is the way the RX80 and the //c work, and that a reasonable solution is to configure the interface to send 7 data bits with 2 stop bits."

Thank you for straightening that out Jack. But I wonder if you have any problems using graphics dump programs that want to send out 8 bits at a time. Seems to me you won't be able to print graphics pictures correctly unless you can find a program that prints 7 bits at a time.

Q. I have been using the Amper Disk Store & Recall routine (NIBBLE EXPRESS, Vol. 2, 1982.) for a number of years now on my Apple II+. A couple of

weeks ago, I tried to use it at work on an Apple //e and it went out of it's mind. I traced the problem to this routine. I really didn't expect to have any problem since the ][+ and //e are supposed to be compatible, but I know how that goes. The article warns that if the RAM version of Applesoft is used the subroutine addresses must be changed but it doesn't say to what. I would greatly appreciate your assistance on this.

A. I tried the Amper Disk Store & Recall routine on my enhanced //e and had no problem with it. As you noted the //e is supposed to be compatible with the ][+. There were some changes in the Monitor ROM routines (the built in programs that handle reading the keyboard, printing to the screen, etc.) but I checked and the Amper routine does not use anything that was changed either on the enhanced or unenhanced //e. The //e Reference Manual includes a separate booklet that contains the Monitor ROM listings. These can be compared to the listings in the Apple ][ Reference Manual. Generally plain vanilla Applesoft programs that don't use any fancy tricks, will transfer okay from the ][+ to the //e.

Are you using exactly the same program under the same conditions? Possibly when running on the //e you are saving and recalling larger arrays and these interfere with the machine language program. Possibly you have a bad copy of the disk, or a fault elsewhere in the program appears to make the Amper routine fail. After running the program and it "goes out of it's mind", press reset and list out the Amper routine to make sure it's still correct and hasn't been modified.

I'll explain RAM Applesoft for fun because very few current users have ever heard of it. When the Apple ][ first came out (not the ][+) Applesoft was not built in. Instead a BASIC that used only integer numbers and was very fast was included in ROM. This is called Integer BASIC and was written by Steve Wozniak but is now rarely used. When Applesoft with its floating point numbers came along, it was distributed on cassette tape or disk and was loaded into RAM. Then you had to be careful where you put machine language routines so they didn't land on top of Applesoft. Every Apple since the ][+ has had Applesoft safely tucked away in ROM.

Q. The Apple ][ Reference Manual says that I can turn on my printer by sending the slot number followed by a Ctrl-P. Back in the good old days when I used cassette tape this sequence worked perfectly on this same equipment. However, when I struck it rich and bought a disk drive it went away forever. I tried every combination of Ctrl-P's and Ctrl-D's that I could think of. Oddly enough, a PR#1 will work but I don't think I should be sending BASIC commands from the monitor and I don't like that rubbish on my paper. I have found that if I send the entire desired sequence in one line it will work, for example 1Ctrl-P800L followed by a carriage return.  
contd.

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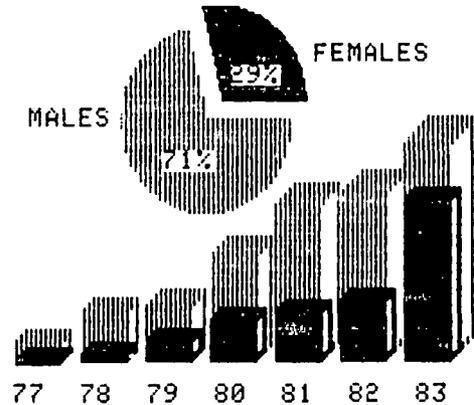
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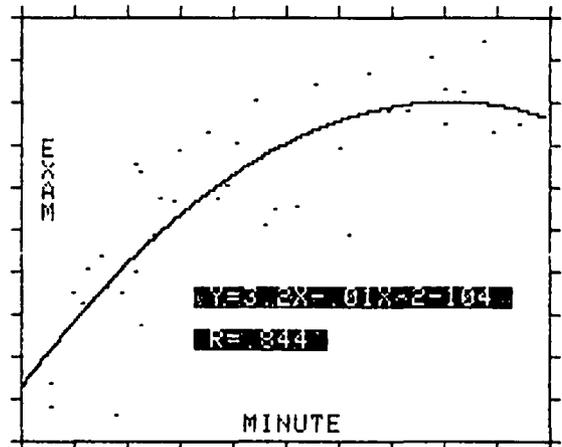
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However, even this is inadequate since the printer turns off at the end of the sequence and doesn't stay on as it should.

- A. Well, well, where to start? Before you had a disk drive and DOS operating, it was perfectly acceptable to type 1Ctrl-P from the Monitor to turn on the printer. It was also acceptable to include an Applesoft program line like 100 PR#1. Once you have DOS on board things change a little bit. The way DOS 3.3 works is to look for DOS commands by intercepting all output from and input to the program. That is why from Applesoft you must use 100 PRINT CHR\$(4)"OPEN FILENAME" type commands. When they are output, DOS intercepts them, recognizes them as DOS commands, and executes them. If you type something from the keyboard, DOS intercepts it and checks to see if it is a DOS command, before sending it on to Applesoft or whatever. If you use PR#1 from an Applesoft program or 1Ctrl-P from the Monitor, DOS gets disconnected from the output and can't see any DOS commands being output. It gets very upset about this, so the next time the program requests input from the keyboard the request goes normally through DOS and it changes the output pointers back to point inside DOS, effectively turning off the printer. That's why your 1Ctrl-P only works for one line. The Monitor returns to request input from the keyboard after finishing that line and DOS reconnects itself.

Now lets straighten out the PR#1 problem. True, PR#1 is an Applesoft command, but it is also a DOS command. If in an Applesoft program you type 100 PR#1, that is an Applesoft command. But, if you type 100 PRINT CHR\$(4)"PR#1", that is a DOS command. CHR\$(4) is Ctrl-D, of course. (To confuse the issue further PR#1 typed from the keyboard is also a DOS command because DOS sees it first before it gets sent to Applesoft or the Monitor.) So typing a PR#1 command from the Monitor is the correct method for turning on the printer. You can turn it off with PR#0; or if you don't want that string printed, pressing RESET also turns it off.

This description only holds for DOS 3.2 and 3.3, ProDOS works differently.

- Q. I am writing about an Integer Basic program called Driver on my school's Apple ][+. The problem is that sometimes when we CATALOG a disk with Driver on it, Driver does not show up, although all the other programs do (including other Integer Basic programs)! Trying to load Driver results in a (BEEP) FILE NOT FOUND error. To make matters worse, if Driver does not show up on one of the disks it is on, it doesn't show up on any of the others, and when it shows up on one of them, it shows up on all of them!!! Also, this happens on my Apple ][+, not only the school's. This has happened day after day, and I finally decided to figure out what was happening. So far I have had no luck. I did, however, zap the disk and the entry for Driver said it had been deleted. It's like some mysterious visitor comes at night and deletes or undeletes Driver on all of the disks. Do you have any suggestions?

- A. This really is a mysterious problem. One possibility is that when the copies were made the disk drive speed was a little fast or slow so when reading the disk you sometimes get errors that make the program disappear from the CATALOG. Another possibility is that some other program you run prior to running Driver is inadvertently modifying DOS so that it fails to CATALOG properly. (Or, maybe your teacher is giving you a subtle hint not to play games at school.) I think you should get a good copy of the DOS 3.3 System Master diskette and using COPYA copy the System Master to a blank disk. Delete everything except the HELLO program, LOADER.OBJ0, and INTBASIC. Then copy the Driver program to the new disk using FID (not COPYA). FID is a program that copies individual files or programs from one disk to another and is on the System Master diskette. Before running Driver, turn off the Apple, wait a few seconds, then boot up on the new disk and run Driver.

- Q. When downloading files from the Radio Shack 100, a large number of unwanted carriage returns are inserted in the text file. These subsequently have to be removed by hand and since they are not visible on the screen a few are usually overlooked and are only caught after the first printout. Using the standard routine for global replacing, I tried Ctrl-F followed by a slash, a Ctrl-J, another slash, a space, another slash and an A. It did not work, and neither did a CR instead of Ctrl-J. If there is no way it can be done with the "find and replace", is it at least possible to make the "returns" visible on the screen?

- A. Apple Writer II doesn't seem to be able to handle carriage returns in the global search and replace routine because the return is the signal for the end of the line. You should be able to use the routine to remove unwanted linefeeds by using Ctrl-F, slash, Ctrl-J, slash, slash, A. Just to rub it in, Apple Writer //e does allow other characters to be substituted for the carriage return. In Apple Writer //e you can remove the carriage returns by entering the following command: Ctrl-F !#! !A, that is Ctrl-F, exclamation point, pound sign, exclamation point, space, exclamation point, and the letter A. That will replace all occurrences of the carriage return with a space. Apple Writer //e also permits you to make the carriage returns visible on the screen as a right bracket. You access this from the special functions menu, use control-Q to get this menu, then select G, toggle carriage return display.

Although not very elegant the following Applesoft program will also remove carriage returns. As set up it reads the text file "FILE1" and writes a new file without the carriage returns as "FILE2". You can change these names to whatever you want by changing line 110. It is restricted to a file size of less than about 36000 characters (the amount of free space in an Apple).

```
100 DIM B$(141)
110 INFILES="FILE1" : OUTFILES="FILE2"
120 PRINT CHR$(4)"OPEN "INFILES
130 K=0 : ONERR GOTO 250
```

contd. on pg 51

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# FEDSIG REPORT

by Chuck Weger

The first meeting of FEDSIG, the WAP Special Interest Group for people working for or connected with the Federal Government, was held Wednesday evening, March 26, in the Bethesda WAP office. The meeting was organized and chaired by Jim Burger, WAP's General Counsel. Attendees came from a variety of niches in and out of the government, including FDA, GSA, HUD, and other pockets of Initialdom. Their common purpose was to meet others in the government who work with Apple computers to share experiences, exchange tips and techniques, and begin a mutual support network.

Along with the usual chitchat about whether product XYZ works with Switcher 7.9 running with Finder 8.4, there was also discussion along the general lines of, "Why aren't there more Apple computers in use in the government?" Partial answer: many procurement offices require MS-DOS compatibility for any computer purchase. Another reason is the perceived "toy" nature of Apple computers (including the Macintosh) in the minds of some government managers. However, several people noted that Macintoshes in particular are slipping in the back door of many government offices through various procurement strategies. Once there, the Macs are often more heavily used than their blue-blooded counterparts.

The feature event of the evening was an outstanding presentation by John Robinson, Chief of NOAA's Hazardous Materials Response Branch in Seattle, Washington. Out in Seattle, away from the pervasive government fog in D.C., they are doing useful things with the Mac! John talked about his project to classify and map hazardous material sites in Seattle using Business FileVision. Using his Mac and the large-screen projector, he demonstrated the process of calling up a map of Seattle showing a hazardous material overview, then pointing to a particular map quadrant to obtain a more detailed map. His database continued in that vein all the way down to the individual industrial site level, where one could obtain information about which hazardous materials were stored exactly where in an industrial facility (such as a chemical plant).

In addition to hazard locations and quantities, the database stores information about the particular hazard, including how to deal with it during a fire. This information is of particular interest to the Seattle Fire Department, which is now installing battery-powered Macs on fire trucks (no kidding!) to help firefighters handle spills and fires involving hazardous materials. The fire department, says John, loves having such information available at the click of a mouse. Previously, it either wasn't available at all, or wasn't available in any form useful to the working firefighter. NOAA is putting together a similar system for Portland, Maine.

What was particularly impressive was the speed and ease with which one could traverse the hierarchical collection of information in the database; it seemed a perfect application for FileVision. And, unlike storing locational information for wine cellars, John's application seemed genuinely useful. All in all, a fascinating demonstration.

Since there are approximately 37 quadrillion Federal Government employees in the Washington, D.C. area, some of whom are members of WAP, it would seem that a SIG devoted to Apples in the government would be a very large one. This was not the case, however. Attendance was only about 15 people. Is it possible that all those Federal WAP members use Apple machines only at home? Perhaps, at work, they are PC users? Or perhaps they couldn't come to yet another evening meeting?

They'll have a chance to redeem themselves, however, for the next meeting of FEDSIG will be held Wednesday, April 30, at 7:30 pm at the WAP offices in Bethesda. The featured topic will be TBD. If you work for Uncle Sam, use Apple computers (or want to), and want to meet your counterparts in other agencies, come along! Friends of the Federal Government (such as taxpayers) are welcome, too. ☺

## NEW APPLEWORKS SIG

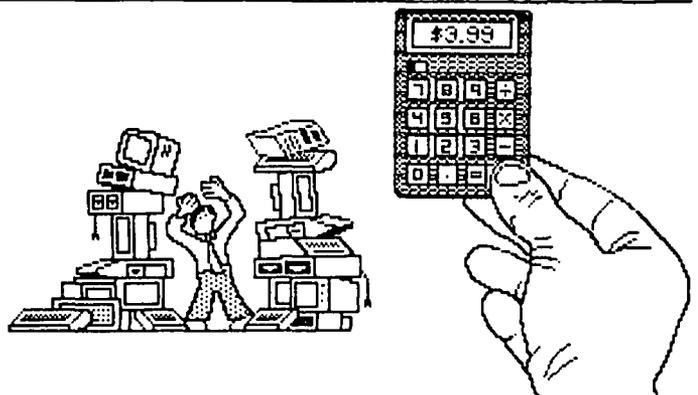
by Peg Matzen

AppleWorks SIG meets after the monthly WAP Apple II Q&A session (12 o'clock) in the cafeteria of USUHS. In addition, an early morning meeting (*before* the monthly WAP meeting) will be held if there is sufficient demand for it. Any interested user is welcome to participate in the promising sessions to come. The March 22 meeting was attended by 19 users. The group is chaired by Ken DeVito, with Peg Matzen serving as secretary.

For the April 26 meeting, Chairman DeVito asks members to bring/describe an unusual application of AppleWorks to share with the group. (Not a requirement for attendance!)

Ken recently obtained 12 diskettes from the AppleWorks User's Group (TAUG) in New Orleans; he plans to contribute these diskettes to the WAP Library. He is asking for *volunteers* who will take home a diskette for evaluation. *How about you?*

Ken has obtained from Lou Pastura a diskette "AppleWorks Desktop Utility," created by Sam Bauer. The utility offers the capability of a calculator, calendar, and memo pad. If you want one of these *freebies*, contact Ken DeVito.☺



# APPLEWORKS - SIDEPOINT/PINKICK

by Richard Rowell

## APPLEWORKS

AppleWorks is my right-hand man (person?). At home I use it as a general utility for everything from balancing my checking accounts, to accessing a data base on local restaurants, to following the Boston Red Sox latest woes. Sure, there are better spreadsheets around. Yup, there are more powerful data bases, and okay, I admit that I use Apple Writer for most of my serious word processing. But, AppleWorks is the dependable workhorse that most easily handles all of my dreary tasks from dawn 'til sometime after dusk. Judging by the number of questions I get on AppleWorks (and I'm not even on the WAP Hotline) I suspect that many of you have also found AppleWorks to be the one program that you'd take with you to a desert island (with, of course, a solar powered //c).

At work I use an IBM XT (sorry, Apple-chauvinists!), but I am certainly not going to allow a solid state package of electronics produced by THE INTERNATIONAL BUSINESS MACHINE COMPANY into my warm pristine little home. Why it would clash with my Vermont Castings wood stove if nothing else. My home is a place for an Apple.

I keep Sidekick available on the IBM at all times. Sidekick is Borland's program that includes a Notepad, Calculator, Calendar, ASCII table, and phone Dialer. These assistants are "resident"—they can be called upon while you are working on virtually anything else, dBase, Symphony, et al.

From what I read in magazines and on bulletin boards, especially the WAP UBBS, both Pinpoint and Jeeves provide the same assistance on an Apple running AppleWorks. I have never used either of these programs. I understand that Pinpoint requires a //c or an enhanced //c. My //c is not enhanced. I hate enhancements. I like simplicity. So here are a few simple suggestions for adding Sidekick-like assistance to AppleWorks.

## A NOTEPAD

While working in any of the environments of AppleWorks I am sure that you find yourself, as I do, needing to jot down occasional notes ("chastise spouse for making wrong entry in checkbook", "change codes on cash withdrawals so as to mask my own spendthrift ways"). Well, to have a Notepad always handy here's all you need to do...: Create (from scratch) a Word Processing file on AppleWorks named "A Notepad". This file can have absolutely nothing in it if you wish, or you may choose to put a one line header in it, and perhaps a place for a date. That's all. Now SAVE this file onto every AppleWorks data disk that you use. Since it is a Word Processor file and its name begins with "A" it will almost certainly be the first file in your AppleWorks directory and the cursor will already be on it when you ask to Add a File to the Desktop.

While working always add your notepad to the desktop along with the file(s) you plan to use. Take advantage of the Quick access command, Apple-Q, to call up the notepad,

electronically jot down your notes and then use Apple-Q to return to the file you just left. Usually your notes will be brief, and if not more than one screen-full you can dump them directly to the printer with Apple-H. Quick, easy, simple, straightforward, few keystrokes, and only 1K of disk space required.

## A CALCULATOR

Now that you have a notepad on call at any time what about a calculator? My favorite simple solution is one suggested by the Beagle Bros. ... Get a \$3.99 pocket calculator, use double-sided tape, and stick the calculator onto the blank space (usually just the size of a pocket calculator) found on almost all monitors.

If you prefer to have an on-screen calculator while using AppleWorks then here's my own creation/suggestion: Create a tiny spreadsheet. Name it A Calculator so it will be listed first alphabetically among the spreadsheet files (or Z Calculator if you want it listed at the end of all AppleWorks files). As above with the Notepad, add this file to all of your AppleWorks data disks, and add it to the desktop at the beginning of each work session. Whenever you need to perform a set of calculations just jab Apple-Q, ask for the Calculator, do your math, and Apple-Q back to the file that you just left.

Those of you who are AppleWorks adept can easily create your own calculator-spreadsheet. For Appleworks novices I have included a description of my calculator-spreadsheet that will probably give you an introduction to some of the formulas used by a spreadsheet.

## A CALCULATOR-SPREADSHEET

Figure 1 shows a sample screen from the calculator-spreadsheet. The only entries you need to make after choosing (1) Add Files to the Desktop ... (5) Spreadsheet are:

Row 1 - Type in the math function symbols (+,-,\*,/,^). Remember to start with a " so these will be considered labels.

Rows 2 + 13 - The hyphens for lines are just for pretty appearance. Again precede the hyphens with a " so they are considered as labels not as minus signs.

Column B - Again, the line is just for appearance.

Row 3 - Here are the five formulas:

C3: @SUM(A3...A12)	allows summing the column of ten numbers
D3: +A3-A4	subtracts number 2 from number 1
E3: +A3*A4	multiplies number 2 by number 1
F3: @IF(A4=0,0,A3/A4)	divides; gives 0 if denominator is the forbidden 0
G3: @IF(A4=0,1,A3^A4)	exponent; gives 1 for any number raised to the power of 0

CELL A15 - Note the ".!" It was planted here so that this spreadsheet would be 15 rows long. By typing Apple-9 contd. on pg 26

# "SLALOM": A Review

by Henry R. Hertzfeld

"Slalom" is a program that enables the user to print an AppleWorks spreadsheet lengthwise. It is marketed by the Big Red Apple Club of Norfolk, Nebraska, and sells for \$5.00 by mail.

Of course, a major disadvantage of narrow-width printers is the inability to print a full-width spreadsheet or data base. This program attempts to overcome that drawback by turning the spreadsheet around and printing either 60 or 72 (there is a choice for most printers) lines on the 8 1/2" side and up to 255 characters across more than one 11" side on continuous feed paper. (You could substitute 14" paper so that the perforations would not get in the way.) The 255 character limitation is one imposed by AppleWorks, not by Slalom.

This program, according to the accompanying notes, is compatible with most dot matrix printers, although, like most Apple software, it was designed to work best with the Imagewriter. Other supported printers: C. Itoh Prowriter, NEC PC-8023, Epson MX, RX, and FX, Star Gemini 10X, Panasonic KX-P1091, Okidata 92, IDA 480. It will print 60 lines with all printers; the 72 line option is available only on selected printers.

Assuming that you have already created a spreadsheet with AppleWorks, to use this program you first must "print the spreadsheet to disk." This means setting up the AppleWorks Program Disk to a custom printer option labeled "print to disk". It will not work by creating a new ASCII file. If you already have a custom printer on your AppleWorks Program Disk, you have to configure a new AppleWorks Program Disk, since there can only be one custom printer installed. Thus, unless your printer is one directly supported by AppleWorks, you need a separate AppleWorks copy to use Slalom.

After you have "printed" your spreadsheet to a disk, you then boot Slalom. It has a helpful setup menu that makes it quite easy to select your printer and other pertinent information. You must keep the entire pathname of your data disk and spreadsheet handy, as that is required by Slalom to access the data. Then, all you have to do is press "return" and watch the printer perform.

Sounds good. Particularly at the price. But, I had problems. I meticulously followed the directions in the enclosed documentation. They were clear and provided ample warnings about potential problems. I have an Apple //c and an Okidata 92 printer, both explicitly supported by this program. The program worked. I tried it on several different spreadsheet and data base files I had created. The problem was that every once in a while, in an unpredictable pattern, the data being printed would "shift" lines. It was akin to problems I had with some graphics print programs when the pause at the end of the line was too short and the feed to the printer would get ahead of its capacity to absorb the information. The fix for the print programs was easy—extend the pause time slightly. I had no such control with Slalom.

The other drawback was that the printing is slow. It uses a graphics mode to print and slows the printer down considerably when compared to the normal character print speeds.

On the plus side, it is inexpensive. Before being overly critical about this program, I would like to try it on other brands of printers. My problem may be generic to the Okidata, since in the documentation the author mentions a problem (not the same one I encountered) with using an Okidata and this program. Otherwise it is made for most configurations of Apple //e and //c computers with either serial or parallel printers. In addition to spreadsheets, it will work with data base information. You should be thoroughly familiar with the AppleWorks program and its printer setup controls before using Slalom.

This is a useful tool, sold at the right price. I would conditionally recommend it, pending its trial on other printer/computer combinations. You must, though, have patience (perhaps go and do something else) while it is printing out a lengthy spreadsheet. ☺

AW Sidepoint/Pinkick contd. from pg 25

the cursor will jump to row 15 and any calculations not already preset in row 3 can be performed in this workspace.

These ideas are simple - the Notepad and the Calculator—but it is such simple ideas that I find useful when added to AppleWorks. Someone suggested the notepad idea on the WAP UBBS; I'd like to give credit, but I don't know to whom, so I guess I'll just give credit to the Bulletin Board itself. If you find the calculator useful then perhaps I have saved you \$69 (list price of Pinpoint) ... [hint!,hint!!]. And by the way, who wants an on-screen ASCII table? ... Z Z Z Z Z Z Z !

```
File: A Calculator.2
=====A=====B=====C=====D=====E=====F=====G=====H=====
 11      +      -      x      /      ^
 12 -----
 13  8.00 | 159.18      4      32      2      4096
 14  4.00 | -----
 15  2.00 |
 16 122.25 |
 17 17.00 |
 18  1.11 |
 19  3.22 |
 20  .55 |
 21  1.05 |
 22  |
 23 -----
 24
 25      [this area for workspace]
 26
 27
 28
 29 -----
 30 C3: (Value, Protect-N) #SUM(A3...A12)
```

Figure 1.

# NEW AND USEFUL APPLEWORKS PRODUCTS

by Milton R. Goldsamt

I've recently noticed that since January more and more AppleWorks products are on the market, and are being advertised in A+ magazine. I've prepared a list, included with this article, of all the hardware and software products compatible with AppleWorks or programmed with AppleWorks commands that I've found in these issues. These products range from // use to the Macintosh, the latter when used as a //c emulator. There's even one newsletter devoted to AppleWorks reference tips.

On the latter topic, I've also noticed six or seven books dealing with AppleWorks. These books range in their coverage from almost being duplicates of the manuals to being quite advanced. Erickson's "AppleWorks Tips and Techniques" seems to have the most new and detailed information. Here, then, are the products that I've noticed are now available. Check the January through May, 1986 issues of A+ magazine for product descriptions contained in their advertising.

<u>PRODUCT NAME</u>	<u>MADE BY</u>	<u>PURPOSE/COMMENTS</u>
Accelerator IIe	Titan Technologies	Processing speed booster expansion board, Pinpoint compatible
AppleWorks Exclusive Reference	Q-Mar Group	Information Newsletter for AppleWorks Users, monthly
AppleWorks Finance Files	Practical Computer Applications	19 business finance files, 13 personal finance files
AppleWorks Home Manager	The Works	12 files: Address/phone directory, checkbook, home budgeting
AppleWorks Spreadsheet Printer	Big Red Apple Club	Prints spreadsheets sideways, different font sizes
AppleWorks Templates	Cash Analysis Software	Templates for real estate investment analysis
BPI Accounting Software	BPI Systems	Accounting package with Appleworks interface
BusinessWorks	Manzanita Software Systems	Business accounting system; integrated or separate module use
Electronic HUD Settlement	A & B Abstract	Template for HUD format of real estate sale
Enhanceworks	Dat Software	Print enhancement; 19-22 cpi, double ht. char; other features
Flipster	Greengate Production	Up to 6 MB expansion board, program manager for workspace use
GraphWorks	PBI Software	Graphic data analysis of spreadsheet entries
//c System Clock	Applied Engineering	Clock card with time and date/day of week display
JE864 Card	Jameco	80-column 64K expansion board
Jeeves	PBI Software	Five desk organizers: appointments, phonedialer, calculator, etc.
Keyboard FlipTemps	Software Simplified	Keyboard command overlays for three modules & ProDos utilities
Legend E' Card	Legend Industries, Ltd.	For IIe, RGB expansion board, near photo quality, 1 MB
Legend S' Card	Legend Industries, Ltd.	For ][, ][+/e, ][//; 80 col, RGB expans board, near photo quality, 1 MB
Leroy's Cheatsheet	Cheatsheet Products	AppleWorks keyboard overlay command reference cards
Mac + II, V3.0	Meacom	Apple //c emulator for Macintosh, 128K, 80 col, that run AppleWorks
MacroWorks	Beagle Brothers	Utility for macros, multicolumn printouts, file analyzer, etc.
MegaWorks	Megahaus Corporation	Spelling correction/40,000 word dictionary and mail merge features
Multiram //e	Coit Valley Computers	Expansion Board up to 1792K; with free RGB
MultiRam RGB Card	Checkmate Technology	Up to 6 MB of RAM with full-color Apple video RGB output
Pinpoint	Pinpoint Publishing	Nine desk organizers; also add pictures, communications, redialer
Plus-Works-XM	Norwich Data Services Ltd	AppleWorks patch program for the ][+; for most RAM, 80-col card
Profiler 2.1	PM Software	Single-disk data manager/report generator
Quicken	Intuit	Checkwriting, Spreadsheet compatible
Quikloader	So. Calif. Research Group (SCRG)	AppleWorks-programmed chips for two second start-up
RamWorks II	Applied Engineering	Expansion board to 3 MB, RGB option, time & date display
ReportWorks	Megahaus Corporation	Report generation, form filling, math calculations, sorting
SchoolWorks I and II	Lucky Mushroom Software	Spreadsheet gradebook, seating chart, sports stats, time sched
Sensible Grammar	Sensible Software	Check grammar, punctuation, capitalization and abbreviations
SpeechWorks	RC Systems	Oral confirmation of data entry, speech & sound synthesizer
Spellworks	Advanced Logic Systems	Spell Checker and Mailmerge; 90,000 word dictionary
Taxworks	Personal Financial Services	1986 personal income tax forms using spreadsheet component
ThinkWorks	Megahaus Corporation	Outline word processor compatible with AppleWorks files
Timemaster H.O.	Applied Engineering	Clock card with time (to milliseconds) and date/leap year display
TransWarp	Applied Engineering	Accelerator card, 256K RAM, 16 bit upgrade chip available ☺

# GAMESIG NEWS

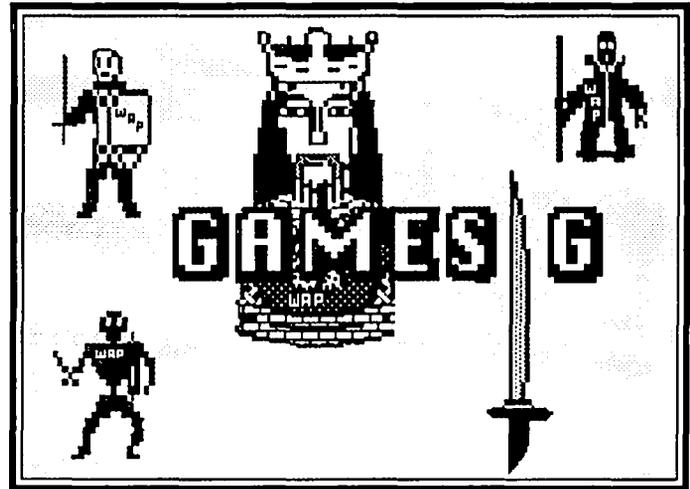
by Barry Bedrick

The April meeting was standing room only once again. We saw a demonstration by Charles Don Dall of ELITE (Firebird), a fascinating new game. His review is elsewhere in this issue.

For those with especially bloodthirsty tendencies, Chairman Ron Wartow revealed how to kill Lord British in ULTIMA III (Origin Systems). Dave Granite could hardly wait until he got home to try it. Incidentally, in an informal survey at the meeting, more people were playing ULTIMA IV than anything else.

Three GAMESIG stalwarts, Ron Wartow and Ray and Fran Hakim, brought to the meeting the commemorative WIZARDRY Spoons which they were given by Sir-Tech for being beta testers of MAC WIZARDRY. Ron's will be on permanent display in the Gamesig Archives. Speaking of Sir-Tech, Ron said that an undocumented feature of their game RESCUE RAIDERS is that, with a Mockingboard with speech, on-screen messages are audible.

The GAMESIG Bulletin Board has been very active, with considerable discussion of the natural history of Orcs and the best methods for killing them. It was agreed that the highest level of one's Wizardry characters is the best measure of the



ability to kill Orcs. One member, who has already been mentioned enough in this column but whose initials are RW, lays claim to a Level 57 Ninja. I will be glad to mention in this space any competing claims.

Finally, after I mentioned in an earlier column the reference to Apple and Apple gaming in Tom Clancy's book, The Hunt for Red October, Tom called me. He is a Pi member and something of a gamer himself, and we had an interesting talk. Watch for his next book, Red Moon Rising, coming in August.

Remember the May 1 meeting at the Office at 7:30. ☺

# BRATACCUS: A Review

by Chris Sandberg

## OVERVIEW

BRATACCAS, by Psygnosis Limited, distributed in the United States by Mindscape, Inc., bills itself as, "the first interactive Video". In addition to the 512K Macintosh version, the adventure game is available for the Atari 520ST and Commodore 512K Amiga.

While the basic concept of the game is similar to that of many other adventure games - work through an unfamiliar environment in search of a specific goal - the execution is quite different from the usual text or mixed text/graphic games. The player controls a graphic character - Kyne. Progress through the game is solely through manipulation of Kyne within the confines of the mining asteroid Brataccas. Kyne may be directed to move within rooms of the asteroid, to talk with individuals he encounters, to inspect, take, or manipulate objects he finds, and to fight with other characters. The goal of the game is for Kyne to escape unjust arrest by uncovering proof of his innocence within the world of Brataccas.

## OPERATION ON THE MACINTOSH

Unfortunately, the standard Macintosh user interface is completely ignored. The program ignores all general keyboard commands. For example, I would have liked to include some of the (quite good) program graphics within this review, but since Shift-Command-3 and Shift-Command-4 have no effect, I could not. The program cannot be mounted with Switcher (for those of us who like to put MacPaint or another drawing

program up with Switcher and map the maze while playing.) The program does not recognize the second disk drive on a two-drive system. This is a problem if (as I did) you put a data disk in the second drive and try to save a game. Brataccus ejects the program disk from the internal drive and asks for your data disk. Since the data disk is in the external drive, and since Shift-Command-2 is ignored, one has to use the "high-tech tool" (the unbent paper clip) to manually eject the data disk from the external drive and put the data disk into the internal drive. This is not user-friendliness.

Error handling also was unpredictable. For example, one can save up to five games on a data disk (which cannot be used for anything else). Loading saved-games went without a hitch at some times, and was a complete failure at others. I had saved several games, and attempted (after being run through by a very irate Asteroid Belt Policeman) to load a saved game. I asked for game number 2, believing I had saved one under that number (there is no way to find out what is on the data disk while in the game.) The program responded, "Game not on disk", and completely locked up: no dialog box, no cursor, no effect to anything except a restart. At other times, I was told there was a "Disk I/O error", followed by a lock up; at other times I just got a bomb box and a lock up.

## PLAYING THE GAME

The authors of the game state that they have attempted to present an environment which operates "normally." That is, contd.

if Kyne walks across a lift shaft, he will fall down it (although without being killed by the fall). If he walks into a wall, he will bounce off, crying "Ouch". As part of this "normal" environment, the program includes what it calls "implied action", which means that if Kyne walks or runs up to a door, it will open and Kyne will go through, even if you change your mind partway through the action. Although this sounds quite sensible, when combined with the game's other control features, it ends up being frustrating.

Brataccus can be run, according to the documentation, either by use of the mouse or via the keyboard. I found control of the character with the mouse to be so imprecise and unpredictable as to be almost impossible. I concentrated on using keyboard commands (shades of my Apple ][+ days!) to run the game. In the keyboard mode, one gets two keys for left and right motion, two for up and down motion, and one for "fire". Even so, control is imprecise. Often it would take several tries to get a keyboard command to register. For example, pressing the "left" key once makes the character move left, pressing it twice quickly make the character move left quickly; pressing the "right" key once makes the character move right, but still facing left. To make the character turn to the right, four quick presses of the "right" key are needed: two to execute a quarter turn (to facing away) and two more to execute another quarter turn (to facing right.) Often, double presses would be interpreted as single presses, or ignored. Similarly, to go through a rear door (as opposed to a side door), the character must first be turned away (that's two quick presses in the direction opposite of the direction the character is facing) and then two quick presses of the "up" key. Often, I would stand at the door, pressing the "up" key repeatedly with no effect. Another example is the difficulty picking up objects: Kyne must be standing exactly so far from an object to pick it up. If he is either too far away or too close, the pick up action has no effect. This sort of needless frustration did not raise my enthusiasm for the game.

Despite the documentation's assertion that the "implied action" method of operation would allow a player to control Kyne in an intuitive way, so that he acts "exactly how and when you want him to", I was unable (after 15-20 hours of playing time) to achieve a state of consistent control.

My primary complaint with Brataccus is the limited ability the player has to interact with the environment. One

may turn Kyne in one of three directions, walk or run down the passages, and fight. If Kyne encounters other characters, the program presents the choices from which the player must select. If Kyne encounters an Asteroid Belt Policeman, the only choices are "Resist" and "Submit". The player cannot act beyond those choices, even if another type of reaction is desired. Also, often the player cannot take any action at all when some is desired. Upon meeting another character, for example, Kyne will often be asked, "Coming to the bar for a drink, stranger?", but cannot reply. Or, once in a bar, Kyne cannot initiate conversation with the bartender or other patrons. Only when the program offers a choice of actions or reactions can the player select one.

### DOCUMENTATION

Brataccus comes with a short (26 pages, including some of pure illustration) manual, written for all three machines on which versions of the game run. The materials are mostly clear and do provide a good explanation of the features and situations of the game. There is a tendency to unnecessary cuteness in some portions of the documentation, but it is not carried to excess. No backup disk is included in the materials I received, and no mention is made in the documentation of how to obtain a backup or replacement copy. This is a serious point, since I was unable to make a backup copy (I get fairly paranoid when working with the only copy of software I have been sent for review and don't even own) with Copy II Mac.

There is also no mention of how (if at all) to obtain technical assistance. I believe this is largely due to the British origin of the program and documentation. Mindscape does provide its address and a non-toll free number on a small sticker on the back cover of the documentation. (Ed. Note: It is our understanding that the above problems are being corrected by Mindscape.)

### CONCLUSION

Although there are some appealing features to Brataccus (some nice music at the opening, good graphic images, quick play), on the whole I was not satisfied, due to the limitations imposed on a player trying to imaginatively work through the game. I would not purchase the game myself.

*[Chris Sandberg is an Apple Pi member who practices law in St. Paul, Minnesota.]* ☞

## GULF STRIKE: A Review

by Chris Hancock

Gulf Strike is based on a board game of the same name, which was a successful Victory Games design of some years ago. Victory Games is an independent operating division of the Avalon Hill Game Company.

Avalon Hill started making microcomputer games a number of years ago and is now beginning to have a wide selection available. The quality of the games have certainly been improving of late—Under Fire is a notable example of one of their recent offerings. Over the next year or so Avalon Hill is planning to make several conversions of popular board wargames to the computer format. I understand plans include

Wooden Ships and Iron Men, and Panzergruppe Guderian, both of which are very successful games. If Gulf Strike is an example Avalon Hill should be most successful in its endeavors.

The Gulf Strike board game deals with hypothetical conflict in the Persian Gulf region in general and offers several scenarios with different combatants. It also includes both strategic and operational level maps. The computer version is a simplified version of one of these scenarios with the now unlikely alliance of the US and Iranians against the Soviet Union and Iraq. It is an operational level game with the

contd.

theatre of operations concentrated in the Persian Gulf and Iran.

Documentation for the game is excellent and includes data on all naval, air and ground units included in the game. The mechanics of play are quite straightforward so that a single reading of the rules is all that is necessary. It is easy to refer back when the need arises.

The display shows a scrolling map together with windows giving information on units and status necessary to the play of the game. One point worth making is that it is absolutely essential to have a color display. I started by trying to use my monochrome system and could not make out the terrain features. The proper use of each type of unit is essential to effective play and for the US/Iranian player air power is particularly important because of a shortage of ground forces.

At the start of the game the US/Iranian side controls all Victory Point Squares (VPS). The game lasts for 25 turns or until the turn after the Soviet/Iraq side captures 9 of these. It may also be terminated at the discretion of the player(s). The degree of victory is a function of the number of enemy hit points eliminated and on the VPS status. It is possible for ground forces to be in six different formations depending on the task in hand. These formations affect the fighting efficiency of the units and their mobility. Air units may be used as interceptors, for ground strikes or for escorts depending

on the type of plane. When in interception mode the computer automatically allocates the planes to enemy air strikes without player intervention. It is possible to form composite missions including ground strike forces along with escorts. All combat is handled by the computer. For ground and naval combat it is possible to select either fast or slow resolution. In the slow mode the player is allowed to view each combat step in turn, while the fast mode cycles automatically through all combat.

I found it to be a quite excellent simulation with many tactical and strategic nuances. There is an easy flow of play using either the keyboard or with a joystick. The game mechanics allow one to concentrate on play rather than on entering orders. Both one and two player options are offered. In the one player version the computer always takes the Soviet/Iraqi side. A Save game option is available but it is quite possible to play a game in an evening.

Being a long time wargamer I found this a most enjoyable and challenging game. I also believe it is suitable for introductory level play when the easy play option is selected. I certainly hope the planned future board game conversions are as good as this.

System Requirements: Apple // Series with 48K, Color Display essential, joystick or keyboard. ☺

## ELITE: A Review

by Charles Don Hall

The copy of ELITE (Firebird Software, list price \$34.95) I was given to review came at a rather opportune time. I received it during a Thursday night GAMESIG meeting, spent Friday night reading the documentation (and this game has a LOT of documentation), and discovered on Saturday morning that my car wouldn't start and I was trapped in my apartment. I assumed the engine was being flooded, and spent most of the day playing ELITE. Sunday was spent playing ELITE, and trying to buy a car battery while trapped in my apartment (by Sunday evening, it had been established that the battery wasn't the problem). Monday I played more ELITE while my car was being repaired. Tuesday I went to work. Tuesday evening my car broke down on the beltway, so I turned on my flashers, raised my hood, and went to call a tow truck. The police got there before the tow truck did. "Oh, look! An abandoned vehicle! We'd better impound it right away!" Wednesday was spent trying to locate the car, drinking, and playing ELITE. It was at about this time that I started carrying narcotics and firearms on the spaceship in the game, so that I would be breaking the law. That way, police cruisers would come after me, and I could shoot them all down. Very satisfying. Thursday I went to work, but spent much of the day calling a towing company on the phone: "We should have your car here within the hour. We'll call you as soon as it gets here." It took almost 24 hours for them to get around to towing the car, and they didn't call me when it got there. Unfortunately, there is nothing in the game even vaguely resembling a tow truck. Friday evening was when I got the car.

In other words, this game was put through the acid test,

and ALMOST passed with flying colors. The only time it missed points was on Thursday afternoon when I got home from work, took one look at the box, and started screaming hysterically. The next few hours are sort of a blur, and the next thing I remember is walking the two miles back from the nearest bookstore. HINT: Don't play this game for more than 2 or 3 hours a day.

ELITE is a science-fiction trading-and-combat game, closely related to SUNDOG. A best-seller in England last year, it represents Firebird's first entry into the American market. To help them get off to a good start, they have set the list price at a ridiculously low \$34.95. It will run on any Apple // family computer with 64K of memory, and a joystick is strongly recommended. You can steer from the keyboard, but I was never able to get the amount of control I needed without using the joystick.

Documentation is where the program really shines. The package contains a 64-page "Space Traders Flight Training Manual", which tells you how to play, a small poster showing 22 of the different types of spaceships and debris that you'll run across, a player reference card, and "The Dark Wheel", a 48-page novella by Robert Holdstock based on the game.

As to the game itself: You are the pilot of a Mark III Cobra spaceship. You start the game with 3 guided missiles, a basic front-mounted laser, 7 light years worth of fuel (the maximum allowed), and 100 credits to buy trade goods with. If you make enough money trading, you can buy more and better lasers, or such goodies as an anti-guided missile system, an escape capsule, a scoop to salvage cargo from destroyed

contd.

ships (you can also salvage their escape capsules, and sell the crew into slavery). Your long-term goal is to increase your combat rating, which starts at HARMLESS. Successful combat will increase this to MOSTLY HARMLESS, through several intermediate levels, and finally to DEADLY and then ELITE.

The universe consists of 8 galaxies, each with 255 solar systems. Each solar system contains a star (don't fly too close!), a single planet, a space station orbiting the planet, and a variable number of peaceful and hostile spaceships. Control of the spaceship is rather unusual. Moving the joystick vertically causes your spaceship to dive and climb; moving horizontally causes you to ROLL. This takes a little getting used to... if something is to your left, you center it on the screen by rolling until it is above you, and then climbing until it is centered. Graphics are black-and-white wire-frame (except for suns, which are solid orange circles), and are unusually well-done considering the limitations of the Apple hi-res screen.

One thing that really surprises me about the program is the amount of sophistication they've managed to put in such a small amount of storage. Given 1024 planets, for example, you wouldn't expect a lot of information about each one. However, the authors have managed to create a full screen on each planet, briefly describing its economy, government, dominant life form ("Harmless Furry Blue Rodents"), and a few other things, including a one-sentence description of its culture. For example, "This planet is mildly famous for its exciting sit-coms but scourged by fierce edible poets." Or, "This planet is a revolting dump." Believe it or not, the whole program fits in 64K of memory. Once loaded, it never goes to disk except to save a game (2 or 3 seconds, at most).

The general sequence of play is as follows: Based on your current location, you select some goods to buy, and a destination world. You earn money by buying low and selling high, but prices are only available for the solar system you're currently in. You can make educated guesses: If a world's economy is rated as Agricultural, you might want to buy food, and sell it on a world rated as Industrial. If you want to get rich quick, you can traffic in slaves, narcotics, and firearms. Prices for these vary widely (I once bought a shipment of narcotics for 1.2 credits a unit and sold them for more than 100 each), but they have the disadvantage of being illegal and getting the police on your tail. Of course, you can deal with that, if you have state-of-the-art weapons.

After buying cargo, and traveling through Hyperspace to your destination, you must approach the world. How difficult this is depends on the planet's government: Corporate States, the most trade-conscious of the eight forms of government, go to great pains to keep their systems clear of pirates. Anarchies couldn't care less about pirates. When you destroy pirate vessels, you get a small bounty payment, and you can try to scoop up cargo from the debris.

Your on-board compass will direct you to the destination planet. Once you are close enough to pick up radio signals from the space station, you will be re-oriented on that (sorry, Mark III Cobras aren't built to land on planets). To sell your cargo, you must dock at the space station, which is the most difficult part of the game. The station has a rectangular mouth which you must fly into. The face the mouth is on

rotates once every few seconds. You must sail your ship into the mouth, adjusting your roll so that the mouth stays horizontal on your screen. You have a fair amount of clearance, but it's still quite easy to wreck your ship here. Also, the space traffic controllers seem to be on strike. Rarely, but without warning, a ship will fly out of the mouth and ram you. These ships are usually very weak, and will be destroyed with little damage to your craft. When you dock, however, you will find that you have developed a criminal record for destroying defenseless and peaceful ships. After a few days, I got to the point where I could successfully dock 90% of the time, but it was always a nerve-wracking experience. Fortunately, once you scrape together 1000 credits, you can buy a piece of equipment called a "Docking Computer", which will do all the work for you, and do it fast enough that you're not at risk of ramming another ship for very long.

By the way, there are five secret missions hidden in the program. They are not mentioned in the documentation. I'm not entirely certain how they're invoked. It seems to be random, and based loosely on the number of credits you have. I don't want to give too much away, but the first has you tracking down a certain object which is moving around. It has a headstart of several months, and you must follow its path from planet to planet finding out which path it took. HINT: While on a mission, when you dock at a space station, be sure to read the planetary status page for the planet you're at. Instead of the usual one-sentence cultural description at the bottom, you'll get a clue which will help you on your mission.

WARNING: Gremlins got into the documentation, and the instructions on how to save a game are totally wrong. (This was first discovered by WAP GAMESIG Chairman Ron Wartow, who has notified Firebird. Errata slips will be enclosed in future shipments). If you buy this game, and discover that the save game command is given as "I" (it should be "L"), and if there is no errata slip, feel free to call the WAP Gaming Hotline (me) for an explanation of the rest of the documentation errors.

BOTTOM LINE: While this program has a surprising amount of depth considering the amount of memory it uses, there is just no way that a program on a single disk side can equal the four disk sides of ULTIMA IV, PIXEL'S REVENGE, or MOEBIUS I, and I have to take off points for that. On the other hand, it is a lot of fun, and is easily the best \$35 game on the market. I give this a 9 out of 10: Recommended with very slight reservations. ☺

# THE FAMILY HOME MONEY MANAGER: Part 1

## Working One's Way Through an Applesoft Program

by Brian G. Mason

(Ed. Note: This is the first in a series of nine articles. It will both serve as a guide for using your computer as a home money manager and will be an Applesoft tutorial.)

**ORIGINS.** I got my Apple ][ around Thanksgiving, 1979. My wife and I were not sure what we would be doing with a computer, but we thought it was definitely something we should have. We had a couple of children, and we knew it would be important in their education, and we thought we might be able to use it for something or other to manage our household.

The salesman was going to give us Applesoft on cassette as part of the deal, but he couldn't get his copy to load, so he gave us a game tape and a high-resolution graphics tape instead. So I brought home a machine capable of running programs written in Integer Basic.

After I got it home, I began trying to figure out what it would do. I started by typing programs out of the Apple ][ Reference Manual (the old Red Book), and from the old Apple version of Softside magazine. I learned much by translating some of the Applesoft programs into Integer Basic.

One of the things we thought of using the computer for was to keep track of our budget and family expenses. So we finally went out and bought Checkbook and Data Base Management System on cassette from the Apple Software Bank, copyright October 1977. This program came completely documented including the source code.

Then came the day we got our disk drive and an Applesoft language card. This brought us up-to-date with the way Apple was heading, but it meant I had to learn about file management on disks and even more about the differences between Integer Basic and Applesoft Basic. I had fooled around with enhancing the Checkbook program that I had on cassette before I got the disk drive. Now I had a real challenge to get it to work on disk. I also wanted more than just a checkbook management program. I also wanted something that would keep track of our budget and our family expenses. So I began enhancing the checkbook program and translating it from Integer Basic to Applesoft and getting it to run with a disk drive.

Finally, a year ago, we got a printer. It had been quite a challenge writing the program while only able to look at a screen of code at a time. Now I was able to see the whole program at once on hard copy. I also was challenged to add some reporting capabilities to the program.

What I have ended up with is a very big program with lots of nice features, which I feel is worthy of sharing with the members of Washington Apple Pi. It will run on a 48K Apple ][+ with DOS 3.3. I hope it is instructional to you as I take you through the program line by line. People new to programming will learn the ins and outs of Applesoft Basic. People who have had some programming experience may find some new tricks here and there. Professional programmers

will probably find many places where the program could have been improved, made shorter, made to run faster. I hope we all will gain from the articles which follow.

**CONCEPT.** This program is designed to track a family's expenditures by cash or check and help them maintain a budget. This is done by establishing the different budget categories which you want to track and setting up a budget for each of these categories. Income and expenditures are recorded and compared to the monthly budget. At the end of each month it is possible to see how much under or over budget you were and to transfer funds from one budget account to another.

Checks that are written are recorded and become part of the budgeted expenditures. A checkbook balance can be maintained and the checkbook can be balanced against the bank statement each month.

Four reports can be printed out: monthly and yearly detailed reports and monthly and yearly summary reports.

**THE BEGINNING.** So let's get started. For the beginners, put an initialized disk in your disk drive (see your DOS manual). As you read along, you should type the program in as it appears. Do not worry about the fact that the line numbers are out of sequence. The Apple will put them in sequence for you. If you want to quit at any time, type SAVE and the name of the program you are currently working on and hit return. (Make sure you do that before you turn the computer off, or you will lose everything you have typed up to that point.) This program ended up so long that I had to break it up into five different programs chained together. One of the most interesting aspects of this program is the chaining of these five programs together. But more on this later.

```
0 DIM CN%(302),MO%(302),DT%(302),
  YR%(302),VEN$(302),AMT(302),CT%(302)
1 DIM L%(53),CT$(53),CD$(53),BUD(53),R(302),
  DF(53)
2 DIM TTL(53),AE(12),INC(12),TL(12,53),
  DF$(53),PD(53),AVE(53)
```

It is important in Applesoft to tell the computer to reserve some memory for some variables called arrays. This is done by means of DIM (dimension) statements. You must "dimension" your arrays in Applesoft at the beginning of the program and never pass this way again. If you try to dimension the same variable later on in the program or if the program comes back to the line with the dimension statement in it, you will get an error message (?REDIM'D ARRAY ERROR). This is why we put these lines in at the very beginning of our program.

An array is really what you might think of as a numbered variable. We are going to allow for 300 records in our program and we are going to allow for 50 budget categories. Each record is going to contain a check number (CN%()), the  
contd.

month (MO%), the day (DT%), the year (YR%), what we will call the vendor (VEN\$), the amount (AMT), the budget category (CT%), and a flag indicating whether the check has cleared the bank (R). We will need to assign values to each of these a maximum of 300 times, so just to be safe we provide for a dimension of 302 for each of these variables. (I tend to be cautious when I'm afraid of bumping my head against a wall.)

What in the heck, you may be asking yourself, are those percent signs and dollar signs for? I'm glad you asked that. You see, space is allocated in the Apple depending upon what type of variable you are dealing with. Therefore, you will provide for the most efficient use of space if you use the type of variable you need for the job it is to do. If you put a dollar sign (\$) after a variable, that means that it is a string variable; that is, it is a variable that stands for a string of characters, numbers or letters. If you put a per cent sign after a variable, that tells the Apple to treat it as an integer variable, that is, a whole number. If you do not put anything after the variable, that tells the Apple that it is a "floating point" variable, that is, a number that may involve a decimal fraction. Check numbers will always be whole numbers, so we assign CN% to be the variable to hold the check numbers. The vendor will be a name of something, or a string of characters, so we assign VEN\$ to be the variable for this purpose. The amount will be a decimal number, so the variable AMT( does not get any special notation in it.

The other variables dimensioned will be introduced as we run across them in the program later on. For now suffice it to say that those dimensioned with a dimension of 53 are used to hold values for the budget categories and those dimensioned with a dimension of 12 are used to hold monthly values. But what about that weird one, TL(12,53)? This is known as a two-dimensional array, and believe it or not, this little baby can hold 12 x 53, or 636 values. It will be used to hold the totals for each budget category for each month.

```

4 GOSUB 10000
10000 H1 = PEEK (115) + 256 * PEEK (116)
10010 H2 = H1 - 470
10020 PRINT CHR$(4)"BLOAD CHAIN1,A"H2
10030 LN = H2 - INT (H2 / 256) * 256:HN =
      INT (H2 / 256)
10040 LO = H1 - INT (H1 / 256) * 256:HO =
      INT (H1 / 256)
10050 POKE 115,LN: POKE 116,HN:
      POKE 111,LN: POKE 112,HN
10055 RETURN

```

Now, you are saying, this guy is really wacko. Why in the heck did he go to line 10000 from line 4, and what is all of this garbage anyhow? I'm just going to ignore the first part of the question, because there really is no reason to jump to line 10000 from line 4. I just did, that's all.

But let me tell you what this garbage is all about. This is taken from an article by Murray Summers that appeared in Softside magazine in April 1981, pp. 54-55. Many times when programmers for the Apple wish to break up a large program into modules, they will make sure that all the variables are saved to disk, then RUN the second program

from the first program and gather up all the variables off the disk to use in the second program. With chaining, all of the variable values are tucked away into the upper reaches of the Apple's memory and the second program is loaded in below them so the second program can use the same variables with their associated values. However, if you use the "Chain" program that appears on your System Master Disk from Apple, you have to BLOAD the "Chain" program each time you want to use it. Not so with Mr. Murray's adaptation. His is a way of chaining programs together in Applesoft without having to worry about the size of the programs you are chaining together, or BLOADing the "Chain" program each time.

First of all we need to make a modified version of the "Chain" program. Let's do that right now. Save what you have done so far by typing "Save Temp". Insert the DOS Master Disk and type the following:

```

BLOAD CHAIN, A2108
POKE 2100, 160
POKE 2101, 0
POKE 2102, 32
POKE 2103, 44
POKE 2104, 254
POKE 2105, 76
POKE 2106, 8
POKE 2107, 2

```

Now with the diskette in your drive you will be using for your budget program, type "BSAVE CHAIN1, A2100, L464".

We save the chaining program at address 2100. However, when we load it to use it we load it just below HIMEM:. The variable H1 is set to HIMEM:, the highest location in memory available to the Applesoft program. H2 is set to that value minus 464, which is the length of the revised chaining program we just created. Next, the program asks that our revised chaining program be loaded in at this location just below HIMEM:. Then HIMEM: is reset below the chaining program. This is done by the POKES to 115 and 116.

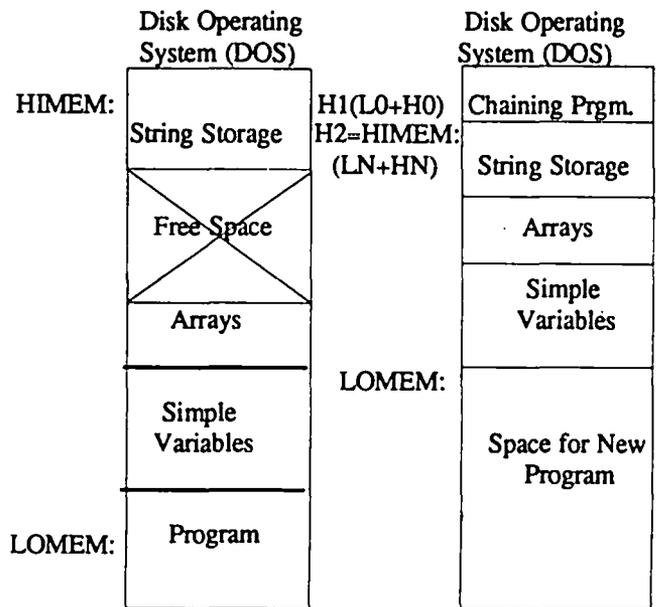


Figure 1  
Before Chaining

Figure 2  
During Chaining  
contd.

Residing here, the chaining program is safe from being overwritten. We also have to reset the start of string storage under the chaining program. This is done by the POKes to 111 and 112. This is also why we have to do all this at the very beginning. If we did it after we had created some string variables, they would be clobbered by this routine.

We will get back to chaining after a bit. For now let's follow the program and RETURN to the point we left it. Type "LIST" to see if the BASIC program you typed is still in memory. If it is not, type "LOAD TEMP" to recover it from disk. Now you can continue typing.

```
6 SS = 1:SB = 1:NS = - 1
```

Here we are setting a couple of flags and initializing a variable. SS is the flag we will use to indicate whether or not we have saved the latest version of our data. Since we have not done anything to our data, the latest version is OK, and the flag is set to "1". When we change the data, we will set the flag to "0". The same is true of SB; this is the flag we will use to indicate whether or not we have saved the latest version of our budget categories. NS is the variable we will use to keep track of the number of data records we have created. We will want our first record to be record number 0, so we set this variable to -1 for now.

```
10 D$ = CHR$(4)
11 OP$ = D$ + "OPEN "
12 CL$ = D$ + "CLOSE "
13 RD$ = D$ + "READ "
14 WR$ = D$ + "WRITE "
15 FB$ = "BUDGET CATEGORIES":YD$ "YEAR-
  TO-DATE DETAIL":YSS = "YEAR-TO-DATE
  SUMMARY":FY$ = "YEAR'S BUDGET DATA"
16 FD$ = "DATA FILE":MD$ = "MONTH'S
  DETAIL BY CATEGORY":MS$ = "MONTH'S
  SUMMARY BY CATEGORY":ESS =
  "END-OF-MONTHSUMMARY"
```

Next we define some string variables. This saves typing and memory. I hope you all know that any time you want to access the disk in DOS 3.3 you start the command with Ctrl-D (CHR\$(4)). Here we make Ctrl-D a part of the string variable we will use for our disk access commands.

```
17 PRINT OP$;FD$
18 PRINT CL$;FD$
```

By opening and closing the file, these two lines create the file "Data File" if this is the very first time we have used this program. It has no affect on the file otherwise.

```
19 TEXT : HOME : VTAB 10
20 HTAB 12
21 PRINT "THE FAMILY": PRINT : PRINT
  TAB(8) "HOME MONEY MANAGER"
22 VTAB 21: INPUT "ENTER CURRENT MONTH
  (NUMBER) - ";MO%: IF MO% < 0 OR MO% >
  12 THEN 22
23 FOR I = 1 TO 12: READ M1,M$: IF M1 = MO%
  THEN I = 12: NEXT : GOTO 25
24 NEXT I: RESTORE
```

```
1700 DATA 1,"JANUARY",2,"FEBRUARY",3,
  "MARCH",4,"APRIL",5,"MAY", 6,"JUNE",7,
  "JULY",8,"AUGUST",9,"SEPTEMBER",10,
  "OCTOBER",11,"NOVEMBER",12,
  "DECEMBER"
```

Now, finally, for the title page. Nothing fancy. Also, we want to find out what month it is we are dealing with here, so we ask for the INPUT of the current month. If the user types something other than a number between 1 and 12, we ask the question again. Next we match this number with the name of the month through a READ DATA procedure. We go through a FOR - NEXT loop READING the DATA by pairs into the numerical variable M1 and the string variable M\$. Whenever M1 is the same as MO% we drop out of the loop by setting the counter, I, to 12 so that the next time the NEXT is encountered, it will have already reached the end of the counter and will move on. At this point, M1 is the same as MO% and M\$ is the name of the month whose number we INPUT. The last thing to do to keep everything neat is to include the command to RESTORE. This sets the pointers back to the beginning so if we need to READ this DATA again, the READ will start from the beginning.

```
25 VTAB 23: INPUT "ENTER CURRENT
  YEAR - "; YR$
26 YR$ = RIGHT$(YR$,2):YR% = VAL (YR$)
```

Next, we ask for the year because we will also need to know this later on in the program. Here we allow anything (except commas, etc.--but you already know that) to be INPUT by putting the INPUT into the string variable YR\$. However, we are only interested in the last two characters of the year, so we make sure that is all that is retained in YR\$. This is done with the RIGHT\$( command. Then we set YR% equal to the value of the new YR\$.

```
1000 HOME : PRINT "HIT <RETURN> IF YOU
  WISH TO ENTER BUDGET ACCOUNTS
  FROM";FB$;"": PRINT "OTHERWISE,
  ENTER FILE NAME->";
1001 INPUT "";T$: IF T$ = "" THEN 1005
1002 FB$ = T$
```

After getting that information, we clear the screen and ask what file to enter budget accounts from. Ordinarily, you would have saved your budget accounts in the file named "Budget Categories". However, this allows for more than one budget account to be kept. The only restriction is that the second budget account has to reside on this same disk. If <Return> is hit and T\$ is null (that is, has no content), then the program goes directly to line 1005. Otherwise, FB\$ is changed to whatever was entered as T\$ before the program moves on.

```
1005 HOME : INVERSE : HTAB 3: PRINT
  "ENTERING BUDGET ACCOUNTS FROM
  DISK": NORMAL : PRINT : PRINT "READING
  IN ";FB$
1006 ONERR GOTO 20000
```

contd.

1007 PRINT OP\$;FB\$  
1008 PRINT RD\$;FB\$

10080 POKE 66,8: POKE 67,2  
10090 RETURN

We are almost done with the preliminaries. The program goes in one of two directions from this point. The key here is the ONERR GOTO statement in line 1006. The very first time the program tries to read any data out of the "Budget Categories" file, of course there isn't going to be anything there, so the computer is going to give us an END OF DATA error, ERROR #5. This will take us to line 20000. Otherwise, if we have put information in the "Budget Categories" file, there hopefully will be no problem with opening and reading the file, so the program will continue on to the next line.

Let us assume for a moment that there is data in the file and see where the program would take us.

```
1010 INPUT NC
1020 FOR I = 0 TO NC: INPUT CT$(I): INPUT
      BUD(I): INPUT CD$(I): INPUT DF$(I)
1025 NEXT I
1030 PRINT CL$;FB$
1033 HOME : PRINT TAB( 11)"HOME MONEY
      MANAGER"
1035 GOSUB 10060: CALL H2"ENTER DATA"
```

The first thing we will have in this file is the number of budget categories we have established. This is represented by the variable NC. We then go into a FOR-NEXT loop from 0 to the number of categories and read in values for four different variables we will have in our "Budget Categories" file, CT\$(, category name, BUD(, budget for that category, CD\$(, code for the category, and DF\$(, the budget variation difference value.

After reading in this file, we clear the screen, print the title at the top, and chain to the "Enter Data" file. Hold that thought for a minute. Let us get back to the other path the program could have taken -- you know, when we had not established anything in the "Budget Categories" file.

ERROR numbers are found by PEEKing at location 222. So what we do when we branch to line 20000 is set Y equal to the value at location 222. If it is equal to 5, then we will want to chain to our program where we will establish our budget categories. Of course, if the error is something other than 5, we will simply print out what kind of error we encountered and where it was located.

```
20000 Y = PEEK (222): IF Y = 5 THEN GOSUB
      10060: CALL H2"BUDGET 1/85"
20001 PRINT "ONERR CODE = ";Y
20002 X = PEEK (218) + PEEK (219) * 256:
      PRINT "ERROR AT LINE ";X: END
```

We find out where the error occurred by PEEKing memory locations 218 and 219 and assigning the derived value to X.

Getting back to the case when there was no data, we are taken to line 10060.

```
10060 POKE 60,LN + 8: POKE 61,HN
10070 POKE 62,LO: POKE 63,HO
```

What we are doing here is poking in locations 60 and 61 the address of the start of the chaining program, and we are poking in locations 62 and 63 the address of the end of the chaining program. Finally, we are poking in locations 66 and 67 the address (\$208, or decimal 520) from which the chaining program is run. The modification to the chaining program we made when we poked those funny numbers into addresses 2100 through 2107 told the computer to take the program whose beginning address is at location 60 and 61 and whose ending address is at locations 62 and 63 and move it to the address contained in 66 and 67, and then run it.

I hope this ties it all together for you now. We have covered a lot of ground so far. We have talked a great deal about chaining two programs together, we have talked about DATA statements, we have talked about the different kinds of variables in Applesoft. For someone completely new to Applesoft, much of this is probably Greek. Follow along, though, and some things will eventually clear up. We have a long way to go yet. This is how I learned Applesoft -- absorbing what I could, letting the rest go over my head with the hopes that I'd be able to come back later after I'd learned a little more and understand it a little better. It is hard when you are presenting a program as a tutorial to present it in sequence from easiest to hardest. It has to be presented as the program flows.

Save what you have done so far under the name you used to initialize your disk (usually people use "Hello" for this name). Then type "RENAME HELLO, BUDGET". Now you have the beginnings of a "turnkey" disk that will help you manage your finances at home.

For a copy of a disk with the complete program, THE FAMILY HOMEMONEY MANAGER, and complete instructions about how to use the program, send \$5.00, a blank disk, and a self-addressed mailer to: Brian Mason, 18317 Swan Stream Dr., Gaithersburg, MD. 20877. ☺

## CHANGE TO BUY/SELL BBS

Lee Raesly is relinquishing SYSOP responsibilities for the WAP System 4 BBS for personal reasons. The system will be reinstalled at the home of Joe Chelena, who will now be SYSOP for the WAP Buy/Sell BBS. The new phone number is (703) 978-6098, a metro area number. (See page 9 of this issue for a complete list of the systems phone numbers.)

WAP owes a debt of gratitude for services well rendered by Lee Raesly over these many months. ☺

# EJECT UNIDISK 3.5

by Stephen Bach

Here's a program which will cause a UniDisk 3.5 to eject a diskette if there is one in its drive. The BASIC Program can be RUN to eject a diskette. Also listed is an assembly language program which will eject a diskette.

## BASIC Program:

```

10 REM EJECT UNIDISK 3.5
20 REM THIS PROGRAM EJECTS A DISKETTE FROM A
   UNIDISK 3.5 DRIVE.
30 REM BY STEPHEN BACH
40 REM WITH HELP FROM TOM VIER, APPLE, AND
   GARY LITTLE
50 REM THIS PROGRAM POKES A MACHINE LANGUAGE
   PROGRAM INTO MEMORY AT PAGE 3 AND
   THEN EXECUTES IT
60 REM IT HAS NOT BEEN TRIED WITH 2 UNIDISK
   DRIVES CONNECTED TOGETHER
70 REM TO EJECT A DISK FROM DRIVE 2 IN A 2-DRIVE
   SYSTEM TRY CHANGING THE 16TH BYTE
   FROM 1 TO 2
80 REM THE PROGRAM HAS BEEN TESTED ON A //E
   AND A //C. IT SHOULD ALSO WORK ON A //+
90 REM (IT WORKS ONLY UNDER PRODOS.)
100 FOR I = 0 TO 156: READ X: POKE 768+I,X: NEXT:
   CALL 768: END
110 REM
120 DATA 32,21,3,176,72,32,66,3,4,14,3,176,64,96
130 DATA 3,1,19,3,4,0,0,162,7,169,199,133,7,169
140 DATA 0,133,6,160,7,177,6,217,69,3,240,7,198,7
150 DATA 202,208,242,56,96,136,136,16,238,169,255,
   133,6,160
160 DATA 0,177,6,24,105,3,133,6,24, 96,108,6,0,255
170 DATA 32,255,0,255,3,255,0,72,160,0,185,123,3,240
180 DATA 6,32,237,253,200,208,245,104,32,218,253,
   160,0,185
190 DATA 133,3,240,6,32,237,253,200,208,245,173,
   157,191,32
200 DATA 218,253,173,156,191,32,213,253,76,142,253,
   141,141,197
210 DATA 242,242,239,242,160,164,0,160,239,227,227,
   245,242,242
220 DATA 229,228,160,225,244,160,236,239,227,225,
   244,233,239,238
230 DATA 160,164,0

```

## Assembly Listing:

```

1
2   * This program will eject a disk from a UniDisk 3.5 drive.
3
4   * It is derived from the routine on p.46 of the Apple //c
5   * Programmer's Guide to the 3.5 ROM.
6   * Thanks to Tom Vier for alerting me to the Guide.
7
8       5-MAR-86 10:32
9
10  ZPTEMPL = 6
11  ZPTEMPH = 7           Temp O Page storage
12
13  CR      = $1D8E
14  PRHEX   = $1D8A
15
16  CTRL.CMD = 4
17
18  ORG $300

```

```

19
20   * FIND A PROTOCOL CONVERTER IN ONE OF THE SLOTS
21
22   JSR FINDPC
23   BCS ERROR
24
25   * NOW DO THE EJECT
26
27   JSR DISPATCH
28   DFB CTRL.CMD
29   DW PARMS
30   BCS ERROR
31
32   RTS           ; We've ejected.
33
34  PARMS DFB 3           The number of parameters coming up..
35   DFB 1           The Unit Number
36   DW CtrlList    Addr of the Control List, but there
37   *             isn't one for this command.
38   DFB 4           Control Code for Eject Disk.
39
40  CtrlList DW 00       A dummy.
41
42  FINDPC LDX #7        Look at 7 slots.
43   LDA #SC7
44   STA ZPTEMPH
45   LDA #0
46   STA ZPTEMPL
47
48  NEWSLOT LDY #7
49
50  AGAIN  LDA (ZPTEMPL),Y
51   CMP SIGTAB,Y    One of 4 byte signature.
52   BEQ MAYBE       Found 1 signature byte.
53   DEC ZPTEMPH
54   DEX
55   BNE NEWSLOT
56
57   * If we get here it's because we couldn't
58   * find a Protocol Converter.
59   * Exit with the Carry set.
60
61   SEC
62   RTS
63
64   * If we get here it means that 1 or more
65   * of the signature bytes for this card are what
66   * we're looking for. Decrement the byte counter
67   * and branch back to verify any remaining bytes.
68
69  MAYBE  DEY
70   DEY           ;If N = 1 then all sig bytes ok.
71   BPL AGAIN
72
73   * Found a Protocol Converter interface.
74   * Set up the call address. We already have the high byte ($CN):
75   * we just need the low byte.
76
77   LDA #S1F
78   STA ZPTEMPL
79   LDY #0        For indirect load.
80   LDA (ZPTEMPL),Y Get the byte.
81
82   * Now the Acc has the low order ProDOS entry point.
83   * The PC entry is 3 locations past this ...
84
85   CLC
86   ADC #3
87   STA ZPTEMPL
88
89   * Now ZPTEMPL has the PC entry point.
90   * Return with carry clear.
91
92   CLC
93   RTS
94
95  DISPATCH JMP (ZPTEMPL)
96
97   * These are the PC signatures bytes in their relative
98   * order. The $FF bytes are filler bytes and are not
99   * compared.
100
101  SIGTAB DFB $1F,$20,$1F,$00,$FF,$03,$1F,$00
102  $00,$FF,$03,$FF,$00

```

contd. on pg 43

# GGLE & DOUBLE-TAKE: The Dynamic Duo

by Donald S. Kline

One of the Apple //e's major shortcomings is its lack of a built-in editor. As most //e owners know, in order to edit Applesoft programs, you either retype program lines or use primitive "escape editing" to modify BASIC statements. Slow and awkward, these methods discourage any serious efforts at programming.

This shortcoming has been particularly noticeable in my case because of professional experience with another micro-computer which had a well designed editor and extensive programming utilities. The comparison of that machine's capabilities with the //e was therefore inevitable (in spite of the much higher cost of the other computer). Nevertheless, I was confident that I would eventually find similar capabilities for my own //e.

Fortunately, I soon discovered two excellent utilities from Beagle Bros Micro Software which met my expectations: GPLE (Global Program Line Editor) and Double-Take. Both packages are compatible with any version of the Apple // and can run under either ProDOS or DOS 3.3. GPLE is a very powerful program line editor with global search and replace features, listing control, and escape functions. Besides being fast, it is simple to use and essentially transparent. Double-Take is primarily a two-way scrolling utility; however it too has some added features such as an improved program lister, variable displays, and a good renumbering facility.

Especially noteworthy is the fact that these utilities are compatible and can be used either individually or together. (When both reside in memory, DOS, which occupies about 10K bytes of RAM, can be transferred to a language card or //e bank switched memory to maximize available RAM.) Combined, GPLE and Double-Take produce a truly synergistic effect, as the overall utility of the two packages is greatly enhanced when they are used in tandem. For instance, the Double-Take variable cross-reference feature can identify BASIC line numbers with variables which may be edited selectively in GPLE. Another example might be using Double-Take's two way scrolling to find blocks of code which can be easily duplicated through GPLE. I'm still discovering new ways to edit and debug programs using these two utilities, which could aptly be referred to as the "Dynamic Duo."

Accessing the features of these packages is so easy that it appears as though they are built into my //e. Moreover, GPLE and Double-Take can be put on the same disk, thanks to Beagle Bros' policy of unprotected software. Owners of single disk drive systems will especially appreciate this convenience. One note of caution, however. Placing both packages on a single disk is rather tricky because GPLE and Double-Take cannot reside on the same disk in their entirety. In order to combine the two, certain files which do not support your equipment configuration must be deleted. Unfortunately, the manuals don't tell you how to do this. Suffice it to say, a careful reading of the manuals will reveal files which do not support your particular needs, and those are the ones which can be deleted to make room for the GPLE and

Double-Take files you need. (I moved the appropriate Double-Take files onto a "cleaned-up" GPLE disk.) If you decide to combine the two packages on a single disk, be prepared to spend a couple of hours identifying and transferring files. And remember, use copies of your GPLE and Double-Take disks.

One additional note is also in order. GPLE will disconnect if you use PR#3 to enter 80-column mode. If this happens, you can quickly and easily re-connect both GPLE and Double-Take with a Control-Reset. In some instances, you may even want to disconnect GPLE and Double-Take prior to running your programs. I've noticed some cursor related problems, for instance, that can be cured by temporarily disconnecting GPLE and Double-Take.

GPLE and Double-Take are real bargains, even at their retail prices of \$49.95 and \$34.95. Since both products can be purchased at substantial discounts, these powerful enhancements can be added for a total cost of just around \$70. I guarantee you'll do a double-take when you see all the useful features that can be added to your machine for this nominal cost! ☺

President's Corner contd. from pg 4

of the new meeting format is that because some announcements are made in the extended Q&A sessions (now an hour and a half long, if you have that many questions), we have the opportunity in the business meeting to do some other things besides business. One thing I've wanted to do for some time is to ask you, what you're interested in seeing WAP do. At the March meeting, for example, I asked whether people wanted President's Corner to continue to cover both what's going on in Washington Apple Pi and what's going on in the world of Apple computerdom. The overwhelming sentiment was to continue trying to do both, so you've asked for it.

Another thing that we were interested to learn concerned whether people preferred the Journal to have more *reviews*, more "how-to" articles, or keep the same balance we have now. Few people wanted more reviews, and the preponderance of the rest of those who voted said they preferred "how-to" articles. Of course, articles in the WAP Journal are written by volunteers such as yourselves. Indeed, Bernie and Gena print almost everything they're given. What this means is that it doesn't matter if you're not Ron Wartow or David Morganstein (to cover the entire range of our reviews from the light to the serious), if you've just figured out a way of doing something with AppleWorks or Excel that solves a problem you've been struggling with for days, write it up in a few words—your fellow Washington Apple Pi members would like to read it. Perhaps you can return the favor to someone else who wrote up the "how-to" tip that saved your skin the other day. That's what user groups are all about!

(\* - There Ain't No Such Thing As A Free Lunch.) ☺

# FORTH MERGESORT

by Chester H. Page

Mergesort is a "stable" sorting algorithm; Quicksort and Shellsort are "unstable". What this means is that if you first sort an address list on names, then on towns, a "stable" sort will leave the town groups internally alphabetized by names. With an "unstable" sort, the order of names in a given town is essentially random. For large mailing lists, a stable sort has obvious advantages.

Why is Mergesort stable? It is based on iterative merging of pairs of lists. The merge of two lists operates by making a third list where at any time, the next item is the "smaller" of the two items currently at the head of the two lists. Let us call these two lists A and B, and presume that if the items atop A and B are equal with respect to the "key" being examined, then the item on A should precede that on B. That is, unless the item on top of the B list should definitely precede that on the A list, the A list item is taken. Consider two items in proper name order; take the upper entry as list A, the lower as list B. Merging these two 1-item lists using the city as the sort key will not upset their name-ordering if they are in the same city.

Mergesort operates by starting with N lists of 1 item each, merging them by pairs into N/2 lists of 2 items each, merging pairs of these lists to form N/4 lists of 4 items each, etc., until there is a single list of N items. If the total number of entries is not an integral power of 2, there will be an odd number of lists at various stages, leaving an odd list at the end after the list has been divided into pairs. Such a left-over list, with no companion to be merged with, is simply accepted. (This makes a list which is half the length of the other lists at that stage.) To allow for both odd and even N at various stages, the N/2 computation between stages is replaced by the integer part of (N+1)/2.

The easiest way of implementing the merge algorithms is to store the string data in linked nodes. Each "node" holds two addresses: the address of a string, and the address of the node associated with the following string. The first address is the "value" of the node; the second occupies the node's link field. The order of the strings in a list is changed by changing the links between nodes. We will need two dummy nodes: a START node to hold a link to the first node on the list, and a LAST node holding a maximum-value string to serve as a "sentinel" at the end of a list. This LAST node is linked to itself, and at every stage of the sort, every list ends with a link to LAST.

To illustrate, let us order the letters in SAMPLE, with the letters themselves (instead of their storage addresses) as the values of the nodes, and let the links hold the serial number of the following node. The initial set of nodes will be

```

START (-, 1)
1      (S, 2)
2      (A, 3)
3      (M, 4)
4      (P, 5)
5      (L, 6)
6      (E, LAST)

```

LAST (Z, LAST)

In any merge, LAST will remain last, because all other letters precede Z.

A list of these nodes, in their linked order, is set up as HEADLIST, and the links in the nodes all changed to LAST. Thus HEADLIST starts a set of the heads of 1-item lists. Alternate entries in HEADLIST are taken as the heads of successive choices of lists A and B for merging.

```

HEADLIST  NODES
1          1 (S, LAST)
2          2 (A, LAST)
3          3 (M, LAST)
4          4 (P, LAST)
5          5 (L, LAST)
6          6 (E, LAST)
LAST      LAST (Z, LAST)

```

After the first set of merges,

```

HEADLIST  NODES
2          1 (S, LAST)
3          2 (A, 1)
6          3 (M, 4)
LAST      4 (P, LAST)
          5 (L, LAST)
          6 (E, 5)
          LAST (Z, LAST)

```

For the next round, the pairs of A, B lists will be

```

A: 2, 1, LAST  B: 3, 4, LAST
A: 6, 5, LAST  B: LAST

```

After this second round of merges:

```

HEADLIST  NODES
2          1 (S, LAST)
6          2 (A, 3)
          3 (M, 4)
          4 (P, 1)
          5 (L, LAST)
          6 (E, 5)
          LAST (Z, LAST)

```

The two lists to be merged in the final round are

```

A: 2, 3, 4, 1, LAST  B: 6, 5, LAST

```

In this final merge, the first three items selected will be 2, 6, 5, leaving list B with only LAST, so that all items in list A will automatically take precedence. The final listing is

```

HEADLIST  NODES
2          1 (S, LAST)
          2 (A, 6)
          3 (M, 4)
          4 (P, 1)
          5 (L, 3)
          6 (E, 5)
          LAST (Z, LAST)

```

The surviving node (2) is entered as the link of START so that starting with START and following the links gives the ordered sequence of strings AELMPSZ. Any routine to output this list must, of course, be programmed to omit LAST.

contd.

The only tricky part of the program is the UPDATE procedure that follows each selection of an item to be added to a merged list. Use NODE.PTR to point to the currently latest node in the merged list, and AB.PTR to point simultaneously to the NEXTA and NEXTB next items on lists A and B. Then in the merge, if the NEXTA (or NEXTB) item is selected, the link field of the current latest node must be changed to point to the new latest node, the NODE.PTR must also be changed to point to this new latest node, and the AB.PTR advanced to point to the next item on the A (or B) list. By making the AB.PTR a two-component variable (array), the appropriate A (or B) data for UPDATE can be automatically selected by having the string comparison put a 0 or 1 on the stack, resulting in a call for 0 AB.PTR or 1 AB.PTR as needed.

To take advantage of the stability of multiple sorting with MERGESORT, I have provided for sorting on the specified line of an entry, thus line 1 for sorting by name, line 3 for sorting by city. If a zipcode is provided as a separate line in each address, sorting by zipcode can also be done, without upsetting the order determined by previous sorts for persons having a common zip code.

Provision is made for fast loading of text files directly to the start of free RAM (address given by PAD). The address files are prepared on a word processor under DOS 3.3, and the only format requirement is that each item start with a delimiter, such as an asterisk (or any character that is not needed in the item, e.g., a control letter). The list must also end in the delimiter. A sample address list for experimenting is

*Brown, George 3564 Main St. Alexandria VA	*Smith, Frank 7842 L St. Washington DC
*Brown, A.B. 54 South St. Annapolis MD	*Jones, Bob 92 Water St. Annapolis MD
*Brown, Henry 1234 K St. Washington DC	*Jones, Bob 52 Prince St. Alexandria VA
*Smith, Henry 67 Water St. Annapolis MD	*

Note that each string ends with a blank line; if the final asterisk were not preceded by a blank line, reordering the strings would result in lack of space between two of the items. The program identifies the first text character as the delimiter, and cancels any text following the last appearance of the delimiter.

Entering LISTIN requests the name of the file to be loaded, then loads it. When the file is loaded, each delimiter is replaced by the length count of the following string; this count is used to control the printing of the strings. A dummy LAST string, 00 FF 8D FF 8D FF 8D FF 8D FF is

added at the end of the file. This serves as a maximum value entry on each line, since no string can contain FF. The leading 00 as a count byte prevents the dummy from being printed.

A ? response as the file name to be loaded yields a catalog of the files on the disk. "\$ ." will print the list, on screen or paper as requested. SORT asks for the number of the line to be used as the key, and a reordered list can be saved to the disk by entering SAVE, which requests the file name to be used. (SAVE restores the delimiters.) When printing a list on paper, a line count is kept so that an address will not be split between pages.

The program provides for up to 510 items in a list, occupying up to 33163 bytes if you have 64K memory and DOS has been relocated upward. With DOS in its normal location (as with 48K), a list can use up to 22667 bytes. I have a test list of 330 entries, each containing 4 lines, occupying 29866 bytes of memory. Sorting this on line 1 required 55 seconds; sorting on line 3, 5 minutes and 20 seconds. This long time is due to the fact that to find line 3 of an entry requires checking every byte in the first two lines, looking for carriage returns! Loading Screen 15 redefines FIND-LINE to use a short object code SEEK routine for this line search. This shortened the time of a line-3 sort to 1 minute, 5 seconds - only 10 seconds longer than a line-1 sort. If greater speed is wanted, loading Screen 16 redefines the string comparison word, \$< , to use a primitive for the actual comparison routine. This resulted in a 37 second line-3 sort, and a 34 second line-1 sort. (Of course, the ultimate would be to abandon the high-level FORTH completely by coding the entire program in assembly! This results in 1 to 6 second sorting, depending on line number.)

#### Screen comments

Scr # 1 - ENTRY uses DOS to find the locations of the Input/Output Control Block and the File Manager Parameter List. Doing this instead of using fixed values allows using this program with either normally-located DOS or a relocated DOS. Relocating DOS upward in a 64k computer gives FORTH an additional 10496 bytes of contiguous free RAM space.

Scr # 2 - FOOL-DOS fools DOS into thinking an Applesoft program is running, thus allowing the use of the indirect commands OPEN, READ, and WRITE.

Scr # 4 - In line 10, note use of 0E as a hex number. Using E by itself works, unless the screens are loaded on top of the FORTH Editor program. (Loading screens on top of the Editor is very common when the screens are being developed.) In the Editor vocabulary, E is recognized as the word for loading screens for editing; encountering it in the middle of the textload procedure can really mess things up!

Scr # 6 - After the text is loaded, lengths between delimiters is counted, and each delimiter (mark) replaced by the count, converting the strings to "dimensioned strings."

Scr # 7 - NODES, which returns the address of the beginning of the list of nodes, serves as the dummy node START. Since the value field of START is empty, it makes a convenient place to store the number of nodes (1 more than the number of strings in the file) in the list.

Scr # 13 - INPUT# works like INPUT in BASIC; it waits for a number from the keyboard, and puts it on the contd.

stack.

Scr # 15/16 - Note the technique for redefining a word already in a program. Its first parameter-field entry is replaced by the code-field address of the new version, and the second parameter is replaced by the code-field address of the terminator, ;S. This "hides" the remainder of the original definition.

#### SCR # 1

```
0 \ Fastload text directly to storage area 22FEB86CHP)
1 HEX
2 CREATE ENTRY E320 , 8403 , 8500 , 2001 , 03DC ,
                                0284 ,
3 0385 , 484C , 08 C, SMUDGE
4 ENTRY 0 @ LITERAL CONSTANT IOBAD
5 2 @ LITERAL CONSTANT FMPARMLIST
6
7 : TSREAD ( bufaddr TS---) 1 IOBAD 2 + C! \ drive 1
8 100 /MOD IOBAD 5 + C! \ sector
9 IOBAD 4 + C! \ track
10 1 IOBAD C + C! \ read (command)
11 IOBAD 8 + ! \ buffer address
12 0 IOBAD 3 + C! \ any volume
13 IOBAD DOIO \ read disk
14 IF IOBAD D + C@ CR ." DISK ERROR # "
15 . CR QUIT ENDIF ; -->
```

#### SCR # 2

```
0 \ Fastload text directly to storage area, concl.
                                13DEC85CHP)
1 : CARD-ON C083 C@ C083 C! ;
2 : CARD-OFF C082 C@ DROP ;
3 : CARD-WRITE C081 C@ C081 C! ;
4 IOBAD B800 > 4000 * A65E + CONSTANT FOOL
5 : FOOL-DOS CARD-WRITE 6018 FOOL ! CARD-OFF ;
6 : FIX-DOS CARD-WRITE AD43 FOOL ! CARD-OFF ;
7 : ?FULL FIRST U< 0= IF CARD-OFF ." File too large"
                                SP! QUIT
8 ENDIF ;
9 : TEXTREAD ( addr1---addr2 addr3 ) C + \ TS List
10 PAD SWAP \ Buffer address
11 BEGIN OVER ?FULL DUP @ \ ---buffer TS T/S
12 -DUP WHILE \ While track # not 0, read disk
13 >R OVER R> TSREAD
14 2 + SWAP 100 + SWAP \ Advance TS and buffer
15 CARD-ON REPEAT ; -->
```

#### SCR # 3

```
0 \ File name needs 22FEB86CHP)
1 0 VARIABLE NAME.BUF 1C ALLOT
2
3 : BLANK.BUF NAME.BUF 1E BLANKS ;
4 : NAME.IN BLANK.BUF NAME.BUF 1E EXPECT ;
5
6 : NAME.LENGTH ( addr---addr n) 1E DUP 0 DO OVER
                                OVER + 1 -
7 C@ DUP BL = SWAP 0= OR IF 1 - ELSE LEAVE
                                ENDIF LOOP ;
8 \ This allows blanks in a file name
9 : CAPS NAME.BUF DUP NAME.LENGTH + SWAP
                                DO I C@ DUP 40
10 AND IF DF AND ENDIF I C! LOOP ;
11
12 : NAME.PRINT CAPS NAME.BUF NAME.LENGTH TYPE ;
13
14 : CATALOG CR 4 EMIT ." CATALOG" CR QUIT ;
15 : ?CATALOG ( ---f) NAME.BUF C@ 3F = ; -->
```

#### SCR # 4

```
0 \ Open file, close file, then load file 22FEB86CHP)
1 : TEXTLOAD C EMIT
2 ." LOAD: " NAME.IN ?CATALOG
3 IF CATALOG ELSE FOOL-DOS CR \ prepare to read
4 4 EMIT ." OPEN" NAME.PRINT CR
5 FMPARMLIST A + C@ 6 = \ was file found?
6 IF ." FILE NOT FOUND" CR 4 EMIT ." DELETE"
                                NAME.PRINT CR
7 SP! QUIT ELSE CR
8 \ if file not found, delete dummy 1-sector file that was
                                created
9 4 EMIT ." CLOSE" CR \ close file
10 FMPARMLIST 0E + @ \ address of TS-list buffer
11 \ Note 0E, not E, to allow loading on top of editor !!
12 \ proceed to load file
13 CARD-ON TEXTREAD CARD-OFF ." FILE
                                LOADED" CR
14 ENDIF ENDIF FIX-DOS SP! ; \ restore DOS and
                                stack
15 -->
```

#### SCR # 5

```
0 \ 22FEB86CHP)
1 0 VARIABLE PRT.FLAG
2 : PRT 1 PRT.FLAG ! C100 36 ! 3EA CALL ; \ set
                                output hooks
3 : UNPRT 0 PRT.FLAG ! FDF0 36 ! 3EA CALL ; \ set
                                output hooks
4
5 : CHECK-COUNT ( n---) 200 > \ 512 strings allowed
6 IF ." Too many strings" SP! QUIT ENDIF ;
7
8 : ARRAY <BUILDS 2 * ALLOT DOES> SWAP 2 * + ;
9
10 0 VARIABLE NODES 800 ALLOT
11 200 ARRAY HEADLIST
12 0 VARIABLE NODE.PTR
13 0 VARIABLE MARK
14 0 VARIABLE LAST
15 -->
```

#### SCR # 6

```
0 \ Build string node table 22FEB86CHP)
1 : ADD-LINK NODE.PTR @ DUP 4 + DUP ROT 2 + !
                                NODE.PTR ! ;
2
3 : BUILD-LIST ." Building node table" CR
4 NODES NODE.PTR ! ADD-LINK \ initialize
5 PAD DUP DUP NODE.PTR @ ! C@ DUP MARK ! \
                                Pad Mark
6 BEGIN SWAP 1+ SWAP \ A+1 M
7 OVER C@ DUP \ A+1 M C C
8 WHILE OVER = \ A+1 M f
9 IF OVER NODE.PTR @ @ \ A+1 M A+1 T
                                \ T points to text location of latest mark
10 SWAP OVER - 1 - \ A+1 M T L (L is string length)
11 SWAP C! OVER \ A+1 M A+1
12 ADD-LINK NODE.PTR @ ! \ A+1 M
13 ENDIF
14 REPEAT -->
```

#### SCR # 7

```
0 \ 22FEB86CHP)
1 DROP DROP NODE.PTR @ DUP DUP 2 + ! @ \ self-link
                                last node
2 FF00 OVER ! 4 0 DO 2 + FF8D OVER ! LOOP \ add
                                dummy string to
                                contd.
```

```

3 DROP NODE.PTR @ DUP LAST ! \ end of text, store
                                address of
4 NODES - 4 / NODES ! ; \ last node, and store string count
5
6 : LINK 2 + ;
7 : NEXT LINK @ ;
8
9 : MAKELIST NODES DUP NEXT SWAP @ \ A(node1) N
                                (count)
10 0 DO DUP I HEADLIST ! \ store node address
11 DUP NEXT SWAP 2 + LAST @ SWAP ! \ link node to
                                LAST
12 LOOP
13 DROP ;
14
15 -->
SCR # 8
0 \ String comparison, specified line      22FEB86CHP)
1 1 VARIABLE LINE#
2 : FIND-LINE ( addr1---addr2) LINE# @ 1 DO BEGIN 1+ DUP
                                C@
3      8D = UNTIL LOOP ;
4 : $< ( $B $A---f) \ addresses of strings to be compared
5   LINE# @ 1 > IF FIND-LINE SWAP FIND-LINE SWAP
                                ENDIF
6 \ this increments addresses $B $A until they point to n-th
                                CR's
7   BEGIN 1 1 D+ \ increment both addresses
8   OVER OVER \ $B $A $B $A
9   C@ SWAP C@ OVER \ $B $A A B A get characters
10  = 0= \ $B $A A f
11  SWAP 8D = OR \ $B $A f
12  UNTIL \ until they disagree or a line end
13  C@ SWAP C@ \ A B
14  > IF 1 ELSE 0 ENDIF ; \ f (true if string B < string A)
15 -->
SCR # 9
0 \
1 2 ARRAY AB.PTR
2 : VALUES ( ---$B $A) \ addresses of NEXTB NEXTA
3   1 AB.PTR @ @ 0 AB.PTR @ @ ;
4
5 : UPDATE ( $B $A---)
6   $< \ flag is index of sequence to be advanced
7   AB.PTR DUP @ \ $A($B) NODE (address)
8   DUP NODE.PTR @ LINK ! \ reset link
9   DUP NODE.PTR ! \ advance node pointer
10  NEXT SWAP ! \ advance $A($B)
11  LAST @ NODE.PTR @ LINK ! ; \ link latest node to
                                LAST
12 : MERGE ( $A $B---) 1 AB.PTR ! 0 AB.PTR !
13  NODES NODE.PTR ! VALUES UPDATE
14  NODE.PTR @ NODES LINK ! \ establish link to first
                                node
15 -->
SCR # 10
0 \
1 BEGIN VALUES UPDATE NODE.PTR @ LAST @ = UNTIL ;
2 \ continue merge until only LAST is left
3
4 \ Avoiding split strings at page bottoms
5
6 3A CONSTANT PAGE.LENGTH
7 0 VARIABLE CR.COUNT
8 0 VARIABLE LINE.BALANCE

```

```

9
10 : CHECK-LINES ( S---) \ address of string to be printed
11   1 CR.COUNT !
12   DUP C@ \ length of string
13   OVER + 1+ \ address of end of string
14   SWAP 1+ DO I C@ 8D = \ count CR's in string
15   IF 1 CR.COUNT +! ENDIF LOOP -->
SCR # 11
0 \
1 CR.COUNT @ LINE.BALANCE @ OVER OVER >
                                \ if not enough room
2 IF C EMIT DROP PAGE.LENGTH SWAP - \ go to
                                next page
3   LINE.BALANCE !
4   ELSE SWAP - LINE.BALANCE ! ENDIF ; \ adjust line
                                balance
5
6 : $.
7   ." Enter P for Print or S for Show" CR CR
8   PAGE.LENGTH LINE.BALANCE !
9   KEY DUP 50 = SWAP 70 = OR IF PRT ENDIF \ P or p
10  NODES NEXT \ address of first string
11  BEGIN DUP LAST @ = 0= WHILE \ continue to last string
12  DUP @ \ string address
13  PRT.FLAG @ IF DUP CHECK-LINES ENDIF
14  COUNT TYPE NEXT REPEAT DROP UNPRT ;
15 -->
SCR # 12
0 \ Saving reordered lists to disk      22FEB86CHP)
1 : SAVE.
2   MARK C@ EMIT \ start with delimiter
3   NODES NEXT \ compare $. above
4   BEGIN DUP LAST @ = 0= WHILE
5   DUP @ COUNT TYPE MARK C@ EMIT \ add delimiter at
6   NEXT REPEAT DROP ; \ each string end
7
8 : SAVE
9   C EMIT ." SAVE AS FILE NAMED: " NAME.IN
                                FOOL-DOS CR
10  4 EMIT ." OPEN" NAME.PRINT CR
11  4 EMIT ." WRITE" NAME.PRINT CR
12  SAVE.
13  FIX-DOS CR 4 EMIT ." CLOSE" CR ;
14
15 -->
SCR # 13
0 \
1 : INPUT# QUERY BL WORD HERE NUMBER DROP ;
2 \ input a single-precision number
3
4 : SORT ." On which line? " INPUT# LINE# ! CR
5 MAKELIST \ build headlist from linked nodes
6 NODES @ BEGIN
7 DUP 0 DO
8 DUP I 1+ = IF I HEADLIST @ I 2 / HEADLIST !
9 \ accepts single nodes at end of odd-number list
10 ELSE I HEADLIST @ \ NEXTA
11   I 1+ HEADLIST @ \ NEXTB
12 MERGE
13 NODES NEXT I 2 / HEADLIST ! ENDIF \ build new
                                headlist
14 2 +LOOP 1+ 2 / DUP 1 = UNTIL ;
15 -->
SCR # 14
0 \
22FEB86CHP)

```

contd.

```

1
2 : LISTIN
3 3EA CALL      \ reconnect DOS, just in case
4 TEXTLOAD
5 BUILD-LIST ;
6
7
8 DECIMAL
9

```

SCR # 15

```

0 \                22FEB86CHP)
1 HEX
2 CREATE SEEK 0686 , 00A6 , A0CA , C800 , 02B1 ,
3 8DC9 , F9D0 , D0CA , 18F6 , 6598 , 8502 ,
4 A502 , 6903 , 8500 , A603 , 4C06 , 0848 , SMUDGE
5
6 : FIND-LINE* ( A---A1) LINE# @ 0 ! 2 ! SEEK 2 @ ;
7
8 DECIMAL
9
10 ' FIND-LINE DUP 2 + ' ;S CFA SWAP !
11 ' FIND-LINE* CFA SWAP !
12

```

SCR # 16

```

0 \                22FEB86CHP)
1 HEX
2
3 CREATE COMPARE 00A0 , 0184 , 0686 , 00A6 , 01E0 ,
4 36F0 , FOCA , C809 , 02B1 , 8DC9 , F9D0 , F4F0 ,
5 9818 , 0265 , 0285 , 03A5 , 0069 , 0385 , 00A6 ,
6 00A0 , FOCA , C809 , 04B1 , 8DC9 , F9D0 , F4F0 ,
7 9818 , 0465 , 0485 , 05A5 , 0069 , 0585 , 00A0 ,
8 B1C8 , C902 , F08D , 8512 , B107 , C904 , F08D ,
9 C506 , F007 , B0ED , A904 , 8501 , A601 , 4C06 ,
10 0848 , SMUDGE
11
12 : $<* LINE# @ 0 C! 2 ! 4 ! COMPARE 1 C@ ;
13
14 ' $< DUP 2 + ' ;S CFA SWAP ! ' $<* CFA SWAP !
15 DECIMAL

```

ASSEMBLY LISTING FOR SEEK

```

0000:          1 *SEEK
0000:          0000 2 LINE EQU $0
0000:          0002 3 S1 EQU $2
0000:          0006 4 XSAV EQU $6
0800:          0800 5 ORG $800
0800: 86 06      6 STX XSAV save X for FORTH
0802: A6 00      7 LDX LINE
0804: CA         8 DEX
0805: A0 00      9 LDY #0
0807: C8        10 LOOP INY
0808: B1 02     11 LDA (S1),Y
080A: C9 8D     12 CMP #$8D look for returns
080C: D0 F9 0807 13 BNE LOOP
080E: CA        14 DEX
080F: D0 F6 0807 15 BNE LOOP correct # of lines?
0811: 18        16 CLC
0812: 98        17 TYA
0813: 65 02     18 ADC S1 move address up to
0815: 85 02     19 STA S1 last CR
0817: A5 03     20 LDA S1+1
0819: 69 00     21 ADC #0

```

```

081B: 85 03     22 STA S1+1
081D: A6 06     23 LDX XSAV restore X
081F: 4C 48 08 24 JMP $848 back to FORTH

```

ASSEMBLY LISTING FOR COMPARE

```

0000:          1 *COMPARE
0000:          0000 2 LINE EQU $0
0000:          0001 3 FLAG EQU $1
0000:          0002 4 S1 EQU $2
0000:          0004 5 S2 EQU $4
0000:          0006 6 XSAV EQU $6
0000:          0007 7 HOLD EQU $7
0800:          0800 8 ORG $800
0800: A0 00      9 LDY #0
0802: 84 01     10 STY FLAG assume S1<=S2
0804: 86 06     11 STX XSAV save X for FORTH
0806: A6 00     12 LDX LINE
0808: E0 01     13 CPX #1
080A: F0 36 0842 14 BEQ CLOOPif line 1, skip CR search
080C: CA        15 C1 DEX
080D: F0 09 0818 16 BEQ C2
080F: C8        17 C5 INY
0810: B1 02     18 LDA (S1),Y
0812: C9 8D     19 CMP #$8D look for CR's
0814: D0 F9 080F 20 BNE C5
0816: F0 F4 080C 21 BEQ C1
0818: 18        22 C2 CLC
0819: 98        23 TYA
081A: 65 02     24 ADC S1 advance address to CR
081C: 85 02     25 STA S1
081E: A5 03     26 LDA S1+1
0820: 69 00     27 ADC #0
0822: 85 03     28 STA S1+1
0824: A6 00     29 LDX LINE
0826: A0 00     30 LDY #0
0828: CA        31 C3 DEX repeat for other string
0829: F0 09 0834 32 BEQ C4
082B: C8        33 C6 INY
082C: B1 04     34 LDA (S2),Y
082E: C9 8D     35 CMP #$8D
0830: D0 F9 082B 36 BNE C6
0832: F0 F4 0828 37 BEQ C3
0834: 18        38 C4 CLC
0835: 98        39 TYA
0836: 65 04     40 ADC S2 advance address to CR
0838: 85 04     41 STA S2
083A: A5 05     42 LDA S2+1
083C: 69 00     43 ADC #0
083E: 85 05     44 STA S2+1
0840: A0 00     45 LDY #0
0842: C8        46 CLOOPINY character comparison loop
0843: B1 02     47 LDA (S1),Y
0845: C9 8D     48 CMP #$8D
0847: F0 12 085B 49 BEQ CL1 line end
0849: 85 07     50 CL2 STA HOLD
084B: B1 04     51 LDA (S2),Y
084D: C9 8D     52 CMP #$8D
084F: F0 06 0857 53 BEQ CL3
0851: C5 07     54 CL4 CMP HOLD
0853: F0 ED 0842 55 BEQ CLOOP
0855: B0 04 085B 56 BCS CL1
0857: A9 01     57 CL3 LDA #1
0859: 85 01     58 STA FLAG S1>S2
085B: A6 06     59 CL1 LDX XSAV recover X
085D: 4C 48 08 60 JMP $848 return to FORTH

```

# DISK DRIVE MAINTENANCE AND REPAIR TUTORIAL

by Ted Meyer

This is my round-about way of telling you about a new tutorial. I've owned my Apple ][+ for about four years now. Over this period I've added peripherals (a second disk drive, printer, modem, RAM card, mouse, 80-column card, etc), each time expecting major catastrophe and yet with each addition finding no real problems. The ][+ and its assorted peripheral companions have been real troopers, continuing to function admirably despite my almost total lack of maintenance. Sure, I'd blow the dust off occasionally and I even went so far as to buy a surge protector after hearing several horror stories. I always sort of assumed, however, that my little system was relatively invulnerable.

Late last year, however, while I was in the midst of a fairly important project (my wife might disagree with the importance of this project), my four year old Apple ][ drive started acting very strangely. It started with a lot of that *clack-clack-clack* sound (I guess it was trying desperately to recalibrate itself), but soon escalated to destroying disks.

Since I work with Apple FORTRAN which requires the Apple Pascal System, it is almost necessary to have two disk drives. Running with a single drive is possible, but very limited with this operating system. After doing some swapping, I was able to determine that it was the drive and not the controller card that was the problem. So, I immediately went searching for a dealer that might be able to help me with my disk drive. After calling a variety of computer shops, I went to one that said that they could look at the drive right away.

At first, I was very pleased with the service. I was not a recent customer, and yet the technician was willing to look at the drive within minutes of my coming into the store. I watched as he plugged my precious disk drive into their //e and popped a diagnostic disk into their drive. (I lusted after that diagnostic software. I was told that it could NOT be purchased. In retrospect I think I know why.) The program tested my drive and spit out a number. The technician looked the number up in a notebook and pronounced that the problem was in my "stepper motor." I asked how much that would cost to repair or replace. My technician went to ask his supervisor. He returned saying that it wouldn't be much, but that they would like to keep the drive overnight for further tests.

The next day I returned expecting to tell the technicians to fix the drive. I was told the repairs would cost \$175 and that there would be a fee of \$25 for the estimate! I had seen NEW drives (not Apple) selling for as low as \$110. There had been no mention of any charge for the estimate. I was not happy. I let them know, but they still insisted on their \$25. I paid the ransom and left with my poor disk drive. I bought a new disk drive... elsewhere. That "diagnostic" software was probably the source of half of the income of that shop.

This story has a happy ending, believe it or not. And it can work out to your advantage as well. A few months ago I called Rich Mlodoch, a fellow member of WAP who is willing to look at members disk drives and repair them. Rich spent an afternoon looking at my drive and determined that it needed a few cents worth of 3 in 1 oil. He wanted to charge me \$5 dollars for his time, so I gave him \$20. I now have three drives.

Talking to Rich, I found that he was willing to give a tutorial on maintenance and repair of Apple Disk ]['s (or the equivalent) for WAP. So on Saturday, May 17th, at 9:00 AM in the WAP offices, Rich will teach those interested some basics of disk drive first aid. The tutorial will last about an hour and then Rich will answer questions. If you're interested call the office and sign up soon, because attendance will be limited. Attendees may bring a drive or just watch. If they bring their drive they should also bring: a small phillips screwdriver, alcohol, cotton swabs, and a small can of 3-in-1 oil.

## Eject Unidisk 3.5 contd. from pg 36

```

103
104
105 * General Purpose MLI Error Handler
106
107 * From Apple ProDOS: Advanced Features for Programmers
108 * By Gary Little, p.66
109
110
111 CMDADR = $BF9C      Return addr for MLI call.
112
113 COUT = $FDED
114
034D: 48 115 ERROR PHA      ; Save Error Code.
034E: A0 00 116 LDY #0
0350: B9 7B 03 117 E1 LDA ERRMSG,Y
0353: F0 06 118 BEQ E2
0355: 20 ED FD 119 JSR COUT      Print first part of message.
0358: C8 120 INY
0359: D0 F5 121 BNE E1      Branch always.
122
035B: 68 123 E2 PLA      ; Retrieve Error Code.
035C: 20 DA FD 124 JSR PRHEX      and print it.
125
035F: A0 00 126 LDY #0
0361: B9 85 03 127 E3 LDA ERRMSG1,Y
0364: F0 06 128 BEQ E4
0366: 20 ED FD 129 JSR COUT      Print 2nd part of message.
0369: C8 130 INY
036A: D0 F5 131 BNE E3      Branch always.
132
036C: AD 9D BF 133 E4 LDA CMDADR+1
036F: 20 DA FD 134 JSR PRHEX      Print high part of address.
0372: AD 9C BF 135 LDA CMDADR
0375: 20 DA FD 136 JSR PRHEX
0378: 4C 8E FD 137 JMP CR
138
037B: 8D 8D 139 ERRMSG HEX 8D8D
037D: C5 F2 F2 140 ASC "Error $"
0380: EF F2 A0 A4
0384: 00 141 DFB 0
142
0385: A0 EF E3 143 ERRMSG1 ASC " occurred at location $"
0388: E3 F5 F2 F2 E5 E4 A0 E1
0390: F4 A0 EC EF E3 E1 F4 E9
0398: EF EE A0 A4
039C: 00 144 DFB 0
--End assembly, 157 bytes, Errors: 0

```

Symbol table - alphabetical order:

AGAIN = \$0321	CMDADR = \$BF9C	COUT = \$FDED	CR = \$FD8E
CTRLCMD = \$04	CtrlList = \$0313	DISPATCH = \$0342	E1 = \$0350
E2 = \$035B	E3 = \$0361	E4 = \$036C	ERRMSG = \$037B
ERRMSG1 = \$0385	ERROR = \$034D	FINDPC = \$0315	MAYBE = \$032F
NEWSLOT = \$031F	PARMS = \$030E	PRHEX = \$FDDA	SIGTAB = \$0345
ZPTMPH = \$07	ZPTMPL = \$06		

Symbol table - numerical order:

CTRLCMD = \$04	ZPTMPL = \$06	ZPTMPH = \$07	PARMS = \$030E
CtrlList = \$0313	FINDPC = \$0315	NEWSLOT = \$031F	AGAIN = \$0321
MAYBE = \$032F	DISPATCH = \$0342	SIGTAB = \$0345	ERROR = \$034D
E1 = \$0350	E2 = \$035B	E3 = \$0361	E4 = \$036C
ERRMSG = \$037B	ERRMSG1 = \$0385	CMDADR = \$BF9C	CR = \$FD8E
PRHEX = \$FDDA	COUT = \$FDED		

# BEST OF THE APPLE ITEMS FROM UBBS

by Euclid Coukouma

## APPLE-IBM CLONE

DEBBY STAR ON 03/09

The Track Card for the IBM clone is fast. I tried a number of Apple II programs and they booted up easily: Prisoner, Castle Wolfenstein, SuperCalc and some utility programs. All worked well. ASCII Pro had to be reconfigured. Chess 7.0 didn't work, but Wordstar did. Some of the commands, such as <- and -> have to be done with different keys on some programs, but my quick initial impression is that the Track card is very good - and so is the service at VF Associates.

DEBBY STAR ON 03/12 TO SAM SWERSKY

I saw the clone and ran some Apple II software, which I mentioned in a previous message on the board. Tom, the owner, explained quite a bit to me. The Apple side will run CP/M (it helps to have an Apple drive), and the IBM/clone disk will work as the second drive. The card also runs ProDos, according to what I was told. It ran a program where DiversiDos was used, too. I plan to take another stack of disks and try them before I purchase it. Sam, I've been using a DOS spreadsheet and it's so slow, that I have to go IBM....and the other reason is that businesses, ie. banks and certain data banks run only on IBM. With the clone, you have both. What more could I ask for, other than it does what it's touted to do, eh?

BRETT PARKS ON 03/12 TO DEBBY STAR

Don't expect your spreadsheet to run any faster on the IBM clone than it does on your trusty ol' Apple. We have both here, and with my //e, accelerator card, and SuperCalc 3a, I can run rings around our IBM's running 1-2-3.

MARK WHEATLEY ON 03/19 TO JOAN DUNHAM

Joan, I have just read the mail from those who would buy a VF-clone for its ability to run Apple software. I don't think it's such a good idea. I don't have any plans of dumping the Apple //e. On the contrary, it is my graphics and TC machine. Mostly, I use the "Generic PC" for work and business stuff. Since the last msg, no more problems have arisen. Having the clock speed switched from the front helps, and I am surprised that one can switch back and forth DURING program execution. It's fun to watch Wang WP Glossaries run slowly and then hit the "passing gear", watching the text stream accelerate! I still believe in Apple // forever!!

## OLD EXTENDED 80 COL CARD

COLIN GRAY ON 03/03

I don't know about you folks, but I have been going around in circles trying to get Double Hires in my //e. I finally picked up the Dazzle Draw manual and studied it. Here's the bottom line. If you bought your ext. 80 col card three or four years ago (I did), then your card probably did not come with a jumper cable. This cable attaches to the 2 pins at the keyboard end of the card. All you have to do is connect the two (don't touch anything else with the cables or else.) Then Double Hires will work. You won't believe how long it took to figure this out.

## DRIVE MAINTENANCE

JIM WARFIELD ON 03/05

I'm confused. Which is nothing new. I've heard one argument that recommends not to use a cleaning disk to clean the disk drive heads. And then I've heard the opposite argument that you should clean your drive heads with these cleaning disks. Who is right?

THERON FULLER ON 03/06 TO JIM WARFIELD

Jim, I checked this very question out with the Apple technical support folks in Charlotte, N.C. a couple of years ago. Their advice is: Never use a commercial disk drive head cleaning kit. First of all, the drive head doesn't get all that dirty. Next, even the best drive head cleaners are abrasive out of necessity. The wear on your drive head from the cleaner kit is much more damaging than whatever oxide accumulates on the head. Third, if you use both sides of your disks, the drive cleaners contain a solvent which removes oxide. The felt pressure pad which presses the disk onto the drive head absorbs this solvent. When you put a disk in, the felt pad then removes the oxide from the backside of your disk, erasing information in the process. Most I/O problems are speed-related rather than from dirty read heads. To clean the drive head remove the drive cover and very gently swab off the drive head with alcohol on a tape-recorder cleaning swab. Don't use ordinary Q-Tip type cotton swabs since some of these contain starch which can get on your drive head. While you have the cover off, replace the felt pressure pad and adjust the disk drive speed.

THERON FULLER ON 03/22 TO TOM O'HAGAN/ALL

Tom, when using a program similar to the one on the WAP disk, anything "close" to 0 is acceptable. I tend to adjust my drives so they're a little fast. A drive that's out of adjustment a little fast is preferable to one that's out of adjustment a little slow. The accuracy of disk speed checkers varies widely. So, if you're "close" to 0, don't worry about the speed unless you're getting lots of I/O errors. I'm not familiar with the Apple Duodisk, but if the speed is electronically controlled, they rarely need drive speed adjustment.

JOHN CONNAUGHTON ON 03/26

Turn the Duo Disk upside down and you will see 2 holes. Each one contains a pot. Insert a small screwdriver and turn the pot to adjust the speed.

TOM VIER ON 03/27

Refusal to write notwithstanding, a write protect error has nothing to do with speed or anything else on the disk other than the notch. Apparently the sense of the mechanical or optical protect switch is not making it back to the controller registers correctly.

THERON FULLER ON 03/09

By the way, old Apple disk drives have a strobe pattern on the underside of the disk drive. Take the cover off the Apple drive and turn it over. The wheel or whatever on the underside of the drive has a strobe pattern calibrated for American household current. Put the drive under a fluorescent lamp and adjust the speed until the strobe lines stop moving. The drive will

contd.



be almost bang on the standard speed.

### //e ENHANCEMENT

THERON FULLER ON 03/07 TO DOUGLAS BLOOMFIELD

You don't save any money by installing the enhancement kit yourself. Clinton Computer will allow you to keep your old chips, so that's all you need to be concerned about. You can always reverse the process if you don't like the results. Clinton's price sounds about right. The types of software you won't be able to use, or use well, is older stuff that's written in machine language and uses the alternate inverse character set. This shows up as Mousetext. I have discovered that some peripheral cards like the Print It! printer card no longer work as well as they used to. There is enough stuff like SuperCalc 3a, Mouse Write, Mouse Word, Pinpoint (if you have a configuration of peripherals that will work with it) and other stuff that utilize the enhanced features to make the conversion worthwhile. Moreover, most of the stuff coming out now assumes you have an enhanced //c.

ALLAN LEVY ON 03/08

An important thing to remember about the //c enhancement is that when Apple says 80% compatibility (or whatever) they mean latest version. For example, none of the old logos work on enhanced //e (or //c for that matter). Also I believe CP/M alternate character set has a problem. So if you have a bunch of old software you may have to get it upgraded. (The Logo Terrapin upgrade is about 20 if you need v3.)

### //C ENHANCEMENT

TOM VIER ON 03/20 TO HARVEY KAYE/ALL

This is a real sleeper! Apple has kept this under their skirts so that every //c owner wouldn't clog the dealers for it. I think a file on the 3.5 ROM is somewhere on this board, but I will repeat. Other than the obvious addition of the Unidisk f/ware in Slot 5, you get: Built-in diagnostics ala //e (not mentioned by Apple), Better interrupt handling, Full Super Serial command set for Ports 1&2, Mini-Assembler in the Monitor, STEP and TRACE in the Monitor, and Appletalk firmware in Slot 7 (not mentioned by Apple). Full details are in the free Programmer's Guide to the 3.5 ROM (#A2L4037)...

### SIDER

OTIS GREEVER ON 03/27 TO NICK VELOZ

I bought my first Sider in June of 85 for my employer. It failed in January 1986. It was a 10mb. We bought a 20 in November 1985—dead in the box, as was its replacement. The third time was a charm and it is still up and running. The third Sider I purchased was for me (how could I resist?). It has run well since it arrived in January. A friend, Don Patterson, bought one in December—still working great, but when he decided to daisy-chain another 10, it went out within a couple of weeks. The replacement is working well after one week. All in all, I have been satisfied with performance, but am beginning to wonder if success and high volume has spoiled FCP. By the way, when you daisy-chain two Siders, you will have an extra board in reserve from the second unit.

TOM VIER ON 03/28 TO OTIS GREEVER

I don't understand going through all those hassles and saying you're satisfied with FCP. Guess all the time waiting, resetting up, etc. caused a certain emotional investment. Don't the shrinks call it denial or something.... I have here 10

megs of Corvus that were turned on about four years ago and haven't had a crash yet. THAT's what I expect. PS. It was purchased for only \$1000 (cheap back then).

EDMON J. DONNELLAN, ON 03/31 TO DAVID P. KEMP  
I got a new Sider manual and updated utility disk from FCP a few months ago, but I think it was before February (copyright is 1985). The manual was free and I think the disk was \$20. Also have the 10 meg and have been using it several hours per day for about a year without any problems at all. You might call them again to inquire.

### PINPOINT

TOM O'HAGAN, ON 03/13 TO THERON FULLER

Pinpoint does require a enhanced //e and only works with PRODOS. If you purchase make sure you get version 1.2 or higher. Any earlier version will drive you nuts with unresolved bugs.

### COPY II+

MIKE UNGERMAN ON 03/13 TO CHIP LENKWICZ

Copy II+ copies all DOS and ProDOS disks/files in several modes. As a disk utility program, It copies disks, initializes disks, restores undeleted files, deletes files, locks, unlocks, verifies etc. all DOS & ProDOS files that are unprotected. Utilizing its sector copy routine, it will copy any DOS, ProDOS, PASCAL or CP/M disk. Utilizing its BIT copy routine, it will copy any operating system Apple Disk and has parameters on disk for most copy protected programs. It also initializes in DOS and ProDOS and will create and rename ProDOS directories and sub-directories. Oh yes, it has a sector editor and a nibble editor. It is an invaluable utility on the must list for anyone! If you are thinking of buying the ProDOS users disk, I would refrain and buy CII+ instead (oh yes it converts Dos to ProDOS and back again including random access text files).

MIKE UNGERMAN, ON 03/23

Latest version is 6.4 according to Q & A session at Sat's WAP meeting. Central Point is supposed to upgrade for free.

### MODIFICATION FOR USING CPM

LEE RAESLY ON 03/08 TO NICK VELOZ

I heard a rumor that PCPI has a patch to make the Uni-Disk work with the Appli-Card.

NICK VELOZ ON 03/11

>>>>>> IT CAME, I INSTALLED, IT WORKS!!! I just got the software from PCPI via Federal Express (fair service, I ordered it at 3:00pm yesterday and it didn't get here till 9:10 this morning!!) It came with absolutely NO documentation (a shrinkwrapped disk with 2 pieces of cardboard). After a call for info. I got it installed and it runs. One problem tho, for some reason I haven't been able to get the Unidisk 3.5 to work with the Sider. If the 3.5 driver is installed I get an error message on any of the hard disk CP/M volumes. Aside from that (which may be my fault and I am sure I can get it fixed), it works FINE. If one doesn't have a hard disk, the Unidisk with super Sam (Swersky)'s fantastic RAM, it could—rather should—make a really nice system. If you do have a hard disk it should be a great peripheral. Will comment further when I have further comments.

TOM VIER ON 03/12 TO NICK VELOZ

Should I be answering myself instead of you? Sounds like the contd.

link/daisy-chain or whatever CP/M does to "connect" the Sider is being pulled by Unidisk driver. I know how DOS 3.3 and ProDOS handle hard disks, but know nothing about the CP/M way. Could you (or Sam) educate us in 800K text or less?

**NICK VELOZ, ON 03/13 TO TOM VIER/ALL**

I found the problem and got it fixed. The Unidisk driver is written for it to be 2 devices. If you change devices to 1 it reads the second device and eats whatever drive or device you have before. (eg. floppy- A, B.--Hard C, D, E, F -- Unidisk as one device as G ==== It eats "F" on the hard disk, thus only giving you C,D,E. If you use it as 2 devices and put it after the hard disk, all is fine (except—you get a DOS error on the second non existent Unidisk, supposedly a second one would work ok). Based on this, if you had 2 Unidisks on two controllers (and I don't know why you would) they could only be established as C and E, and you would be unable to put two on two controllers (meaning 2 drivers) as C,D. Therefore, all is well in Uniland in the provence of CP/M only if the the little buggers live under the hard disk, and not on the roof. The same thing happens to the floppies w/o a hard disk. If the Uni is installed as one device immediately following the floppies - "B" disappears into never never land.

### REAL SOON NOW

**FROM SAM SWERSKY ON 03/05 TO BRETT**

The computer industry has hardly "grown up" (I have gripes aplenty), but I really think you ought to be a little more tolerant when using the expression "REAL SOON NOW". It's funny, of course, but I really think you oughta have a little more sympathy for the firms... I mean the turnover is phenomenal, the competition is fierce, and the technological lifespan is SHORT. Waiting is frustrating, but if a decent product comes out at the end, it's worth the wait. Unless you like paying to beta-test a firm's product—just an opinion. PS: Last I noticed, hardware doesn't grow on trees (no slap intended at farmers!)

**LEE RAESLY ON 03/05 TO SAM SWERSKY**

Sam, I love your utility, and like you very much. But I have to disagree with you on the question of toleration for companies. The practice of advertising a product, then waiting to see if the orders come in, leaves me cold. This Real Soon Now approach seems very questionable to me. I don't think any company should advertise a product until AFTER they are ready to ship. I suspect that such RSN practices are probably against a number of Federal laws. Keep up the good work with your utility.

**BRETT PARKS ON 03/05 TO SAM SWERSKY/ALL**

Not that the computer industry is the only one with RSN problems, but it does have to seem a wealth of examples of such things. RSN problems seem to come about in any business that is dominated/driven/run by the sales & marketing folks rather than the operations/production types. Remember, the purpose of sales and marketing is to sell products that don't exist, to people who don't need them, at a price they can't afford. Like Jim Garner & Ms. Hartley selling little bits of the 'sun' in that camera. When asked what they do when they run out of sun, Jim replies, "That's a production problem, I'm in sales."

### SWEET SIXTEEN

**LEE RAESLY ON 03/14 TO JIM RHODES**

Yea. I used to think that getting old was Hell, until I realized

that it is better than the alternative.

### 40 TRACK DISKS

**CHUCK EDMISTON ON 03/07**

I have //e with DOS 3.3 version `e' and am using 40 track plus disk drives. I've noticed that the catalog tells me that after I use 490 (or whatever) that there is no space free. But using other checkers it says I do have a little bit more room left. Is there a CATALOG FIX for DOS 3.3 for the free space on a disk to be actually counted on 40 track drives or even 400K drives that use 3.5 disks.

**MIKE UNGERMAN ON 03/07 TO CHUCK EDMISTON/ALL**

Chuck: if you have created your 40 track disk with a utility that modifies VTOC to show the extra tracks/sectors, then a CATALOG should show the available space (assuming you are using something like 40 track Diversi-DOS which shows free sectors). Some of my utilities show the free sectors and some don't. One that doesn't is COPY II+, VER 5 and lesser. I have been able to fill all free sectors; haven't run into a DOS error like you mentioned. It may be the way in which you initialized your 40 track disk.

**JOHN WAAK, ON 03/07 TO CHUCK EDMISTON/ALL**

Chuck - you must init your diskette with a 40 or 40+ DOS in your Apple in order to make use of the 5+ extra tracks. The way to do this is to boot a normal DOS3.3 enter the monitor via 'CALL 151' then type the following:

```
AEB5:A0
B3EF:28
BEFE:28
3D0G
```

Then insert the diskette to be formatted in the 40-track drive and type 'INIT HELLO,D#', where # is the drive # of the 40-track drive. If your drive will do more than 40 tracks, add a hex 4 for each track over 40 to the value at AEB5, and a hex 1 for each track over 40 to the values at each of the other two locations mentioned above. Whenever you are writing to one of these 40+ diskettes, you must have a 40+ DOS in the apple. Also, don't try to write to these diskettes in a normal 35 track drive. Note - If you are only going to read from one of these 40+ track diskettes (having previously written the info to be read from it), you do not need the 40+ DOS to be in the Apple—a normal DOS3.3 will do.

**TOM VIER ON 03/10 TO JOHN WAAK**

The DOS will read/write up to 50 tracks and 32 sectors without modification. It uses the VTOC on the disk to get that info. However, you do need to do those pokes to FORMAT a larger diskette...Note: You should always do a valid access to a similarly sized ????

# MAC Q & A

by Jonathan E. Hardis

Technical Support at Apple is trying to get the word out on a problem with System software distributed earlier this year. If you have a Macintosh Plus, or if you took delivery on new software since January, check to see if you are using System file version 3.0. [Apple is now putting the version numbers of System Folder files in their Get Info (Command I) dialog boxes.] If so, replace the System Folder to get System version 3.1 (or later) as soon as possible. System 3.0 has a bug (in the UpdateResFile routine) that can corrupt the integrity of certain of your files. In particular, the System file itself may be hurt by running the Font/DA mover or other installer programs. *(As we frequently remind you, you should always be prepared to restore any file from a backup copy.)* System 3.1, as well as later versions of other items from the System Folder (such as Finder 5.2), can be found at your dealer on both the MacPascal 2.0 update disk, and the LaserWriter Plus demonstration disk. The first few Q&A's have to do with update procedures, for now and in the future.

**Q: What is the latest version of the System file?**

**A:** System 3.2 has been sent to developers for testing and comment. Apple wants to correct all known bugs in current versions of System before shipping another one. Expect it to be in the pipeline to your dealer on an official "Update Disk", on CompuServe (MAUG™), and included with new software products by mid to late May. As I understand it now, it will probably be worthwhile to get it and to update to it. (What you have now is broken, and you should fix it.)

**Q: Is Apple going to put the Mac System software in the public domain?**

**A:** No, but the legal department at Apple has decided to make it "Publically Available", which is not the same thing. (In both cases, it means free and accessible, but in the latter, Apple maintains a valid copyright.) This means that we will be able to distribute updates more quickly and with less hassle.

**Q: What's the difference between System 3.1.1 and System 3.1?**

**A:** Version 3.1.1 corrects one bug in 3.1, which you can fix for yourself at home. Using ResEdit (SIGMac disk 21), and while working on a spare copy of System 3.1, open the System file (on the scratch disk!) by double clicking on "System". Open the PACK resources by double clicking on the word "PACK", and select the PACK 6 resource by single clicking on the number 6. Then, choose "Get Info" from the menus. You will see a series of check boxes for resource attributes. Uncheck the one marked "Locked", and make the change permanent by closing the windows, top to bottom.

**Q: Why doesn't Installer work?**

**A:** A program comes with the Mac+ and the ROM upgrade kit called "Installer", and its purpose is to update System Folder on older disks to the most current version. Installer runs off of "Installer Scripts", such that each new version

of the System Folder should have a corresponding script. In principle, this is a good idea, and it should make the process of updating easier. You have likely spent some time personalizing your program disks by added fonts, desk accessories, or necessary hard disk information. Also, your Scrapbook and Note Pad (likewise in the System Folder) need not be changed. Further, Installer allows for the possibility that some software companies shipped something that's non-standard in their System Files (shame on them!).

However, there are flies in the ointment. For people with only one floppy drive, it takes *hundreds* of disk swaps to run the Installer. Secondly, Installer doesn't (yet) know how to update the version number comments in the Get Info boxes, and so you lose track of what versions you really have. Finally, I'm sure you have some disks that are full to the brim. The installation procedure often needs to expand the size of the System Folder. Even if you are notified of this problem (and I think you are), you have to be prepared to do some file juggling.

In particular, if you get System 3.1.1, which was distributed to developers in the "Software Supplement", be aware that the Installer Script on the same disk doesn't work with that file. Installer matches the scripts to files by checking their creation dates. Mike Cohen reports that you can correct the script by using ResEdit. Open the INSC resource and change the date from 9A740CF6 to 9A8B6700. (Likewise, you will need to change the date for any printing files you also want to install.)

**Q: This is too complicated! What should a novice do?**

**A:** The way the system is supposed to work (no pun intended), you should be able to avoid the Installer completely if you don't want to use it. When you get revised versions of System software (the System file, the Finder, the Imagewriter driver, the LaserWriter driver and Laser Prep, etc.), you should be able to make a "Build Disk". Copy these files to a blank disk, and customize the System file the way you like it. Add and remove Fonts and Desk Accessories, and run any installation procedure that your hard disk might require. (This means both put the hard disk driver on the floppy disk, and the System software on the hard disk.) Bring over your Scrapbook and Note Pad. Then, if you don't have a hard disk, after making copies of this "Build Disk" you can put an application or two on each one, keeping the original disks that the applications came on as your backup copies. Just remember - use all the new System software together (don't mix and match), and be ready to revert back to your previous disks (with the applications and the older System software) if something goes wrong.

The main reason this fails, of course, is that some applications disks come copy protected. In my opinion, it would be bad policy to run Installer against any disk without having a backup copy of it first, and so anyway you cut it, your options are limited. The most conservative approach would be to call the software house and to get their explicit advice. In these cases, it may pay to try

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not updating these disks at all. (Always boot the Mac with a disk containing the latest System file, though!)

**Q: How do I change the System and Finder on a hard disk, such as the Apple HD-20?**

**A:** You can change the System and Finder on any disk that isn't the current "Startup Disk". That's the disk that shows in the upper right on the desktop within the Finder. Even though a hard disk is attached, you can start up your Mac from a floppy, and then do updates to the system software on the hard disk. On a Mac+, turn the Mac's power on after a floppy has been inserted. Floppy disks have boot priority over hard disks. With the older ROMs, as soon as the "Welcome to Macintosh" message appears, hold the mouse button down, and the boot floppy will remain the startup disk. However, John Mitchell (FEdit author and Apple employee) recommends that you reinitialize your hard disk when upgrading from Finder 5.1/System 3.0 to anything later. While the hard disk is other than the Startup disk, you can reinitialize it by choosing Erase Disk from the Finder menus.

**Q: I've heard various rumors about the Mac+ and the new ROMs. Has the Mac+ been recalled, or was production stopped, because of problems in the ROMs or logic boards?**

**A:** No. These are false rumors. When bugs are found in the ROMs, and there always have been bugs in both the old and new ROMs, fixes are distributed using patches in revised System files. Most of the ROM can be bypassed and corrected without changing the ROMs themselves. There is, however, one situation that you can't fix using this technique. Anything involving the boot process must be done in ROM because the System file hasn't been located and opened yet. There has been a minor change to the Mac+ ROM since release having only to do with booting from Mac+ SCSI devices. (One unconfirmed report says that if the SCSI device was connected but turned off, the Mac+ got confused.) It doesn't affect the operation of the machine after the boot. You can check to see which ROM version you have by looking at address 400002. The early version had EE there, while the recent version will have EA.

(Mac trivia: The ROMs are marked L and H, for the Low (byte) and High (byte) of a 16 bit (two byte) computer "word". The comics at Apple made these into complete English words. The "EE" version is known as the "Lonely Hearts" ROM, and the "EA" is known as the "Lonely Heifer" version, the low byte chip being the same in both cases.)

**Q: I have an Apple HD-20 and a Mac+ (or an upgrade to the new ROMs). Do I need to keep the "Hard Disk 20" file on my disks?**

**A:** No. With the new ROMs, you can discard them. In fact, you only need the HD-20 file on the boot disk with the old ROMs.

**Q: I just got a Mac+ and an Apple HD-20. What do I need to do with the disk that came with the HD-20?**

**A:** Nothing. Just connect the HD-20 to the Mac+, turn both on, boot the Mac+ with a copy of the "System Tools" disk, and allow the HD-20 to be initialized when requested.

Then, copy the new Mac+ System software (discussed earlier) to the HD-20. Do not use the software that came on the HD-20 disk; it's even older than System 3.0. However, you will want to keep that disk around for the HD-20 test program, and because of the next question.

**Q: Help! My Apple HD-20 bombs with an ID=02 whenever I try to boot. How can I repair the disk?**

**A:** Robert Wiggins suggests the following. Get out the disk that came with the HD-20, with Finder version 5.0 on it. Insert this disk in the Mac, and then turn the Mac on. If you have the older ROMs, hold down the mouse button when the "Welcome to Macintosh" appears. Hold down Command and Option too, and you'll get a dialog asking whether you want to rebuild the Desktop on the startup disk (the floppy disk). Click No, and continue to hold down Command and Option. If you're lucky, you'll get a dialog box asking whether you want to rebuild the Desktop on the HD-20. Affirm it. You may be on your way. Note that Finder 5.1 and 5.2 don't act the same for this purpose.

**Q: Well, what about the Shift-Option-Tab that you mentioned in the February Q & A?**

**A:** Here's the scoop on that. It's really Command-Option-Tab, and it's a variant of the procedure above. When you hold down Tab in addition to Command and Option, you are not only given the option to rebuild the Desktop file, an invisible file that holds a description of the desktop layout for the Finder, but you are also given the option of erasing and reinitializing the disks. (If you decline you are then given a second choice to just rebuild the Desktop file.) Of course, this is a last-ditch measure to regain the use of the hard disk.

**Q: How does the scrolling menu installer (SigMac Disk 36) differ from the scrolling menus in System 3.0 and later?**

**A:** Mike O'Conner wrote that utility before he knew that Apple was going to do the same thing. There is no point to installing Mike's version (of MDEF 0) in the new System files.

**Q: What's the story on the MacPascal upgrade?**

**A:** Version 2.0 is a free, dealer supplied upgrade. Take both your old master disk in (as proof of purchase) and two blank disks, as well as a disk copy program such as Copy II Mac or 512K Disk Copy (SIGMac Disk 21). Version 2.0 comes to the dealer on two distribution disks, and it's *not* copy protected, unlike the previous version. However, one of the two disks contains "invisible files" that are not seen by the Finder, and you can not duplicate this disk by dragging icons. That's why I suggest you bring along a copy program. Apple does supply an "Installer" program whose main purpose is to copy the invisible files, and your dealer has been instructed to let you have a copy of the Installer so you can copy the stuff again when you get home. (That's why you should take in a second blank disk.) Don't hesitate to ask to read the instructions that came with the update disks. But it makes more sense to me to just make exact sector copies of the two dealer distribution disks, and to worry about the procedure at home, at your leisure. If your old MacPascal disk is

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nearly full, the new stuff won't fit on it. By the way, if you are going to a dealer that you don't normally do business with, it would be a nice gesture to buy the blank disks that you use from him first.

**Q:** My hard disk manual says to always select "Shut Down" from the Finder before turning off the Mac. (Excellent advice!) But the Mac+ reboots immediately, anyway. What's going on?

**A:** When an HFS volume, such as the HD-20 or other hard disk is "mounted" (made known to the Mac's operating system), a flag (notation) is written to the disk to that effect. When the disk is "unmounted", during Shut Down, this flag is cleared to indicate a "Clean Unmount" condition. In order to avoid the time consuming reconstruction of the disk during a subsequent mount, you want to make sure that you have a clean unmount. (That is, if something bad happens, such as a power blackout, the Mac+ has to spend time reestablishing the integrity of the hard disk, if it can.) Either (1) take pains to turn off the Mac+ during the short interval while the screen is blank, or (2) hold down the mouse button after selecting Shut Down. The latter will prevent a reboot from the HD-20 or the SCSI port, and will give you more time to get to the power switch.

**Q:** I have a problem printing on the LaserWriter. When I try to, I get a message "Postscript Error. Document OK but can not be printed", or something to that effect. Why?

**A:** I know this problem comes up using MacDraw with the new ROMs, but similar problems happen with other programs. Even though you are instructed to use the Chooser Desk Accessory (or Choose Printer) just after you start up the Mac, use it again within the application before you try to print. If that still fails, choose the Imagewriter, exit, and use it again to choose the LaserWriter for a second time.

**Q:** What's happening with Switcher? It can't find applications and documents on an HFS disk.

**A:** Switcher 4.4 (the current "official" version) is a bit near-sighted when it comes to finding applications and documents in an HFS maze. Version 4.6 (leaked by Andy in January) helps some. Version 5.0 is undergoing final testing, and is expected to be out soon.

**Q:** How do I use the RAM disk RAMStart (Sig-Mac Disk 25) on a Mac+, or with HFS?

**A:** Here comes a cryptic, technical answer for those who are in a position to some low level diddling. Gary Boureaux supplies the answer for Version 1.21. Using FEdit, make the following patches. In sector ..., at offset ..., replace ... with ... , where the "..." are filled in by the numbers (0C, B4, 4EBA 0682, 4E71 4E71) and (0D, 17A, 6700, 6000). If you are using a hard disk and get the message "Can't find our drive #", also make the change (06, 190, 41FA 0388, 6000 000C). If you now have version 1.22, the corresponding changes are (0C, 36, 4EBA 0678, 4E71 4E71), (0D F8, 6700, 6000), and (06, 132, 41FA 0384, 6000 000A). In addition, RAMStart uses DRVR 10, which makes it conflict with the AppleTalk drivers in the new ROMs. Change it to a different number in the System File with ResEdit, one that isn't being used, perhaps 11. [Anyone understand any of this?]

**Q:** Gulp. Are there, er, any other RAM disks that work on a Mac+?

**A:** Yes, the Assimilation Process's product is said to work. Don't worry if you don't understand the answer above. On the Mac+, a RAM disk has less benefit because you have the built-in disk caching. Both speed up your work in the same way, and you have more real disk space to work from. Also, I'm sure that once someone patches RAMStart for the Mac+, it will make the rounds just like the prior version did.

**Q:** How do I use a Diablo 630 printer on the Mac with MS Word?

**A:** You need a correctly wired cable. The wires run (Mac DE-9 male -> Printer DB-25 male): 9->2, 5->3, 4->7, and 7->11. Also, you have to jumper together pins 4 and 6 on the printer DB-25.

**Q:** In the April Q&A, you gave the cable connections for a Mac+ to a modem. Would you confirm your answer? I bought a commercial cable that's wired differently, and I need to know whether I should complain.

**A:** First off, I'm sorry to say that most of the information in this column doesn't come from first hand experience. The answers are supplied by people at the WAP SigMac Q&A session and from other sources. I use my best judgment to distill the good information from the bad, but you are wise to follow up on any answer that seems odd. In this case, the wiring information came from two independent contributors to MAUG on CIS, and I believe that it likely does describe the way Apple wires the cables. However, there is more than one way to do it.

At issue is the reported wire run from pin 2 on the Mac's mini-DIN-8 to both pins 6 and 8 on the Modem's DB-25 connector. Such a run would be incorrect. You should connect a wire between pin 2 on the mini-DIN-8 and pin 5, 6 or 8 on the DB-25, but not more than one pin. Pins 5, 6, and 8 are output signals from the modem that are meant to relay status information to a computer or terminal. When pin 6 is asserted, it means that the modem is powered on. When pin 5 is asserted, it means that the modem is ready to accept data. And when pin 8 is asserted, it means that a connection has been established to the remote computer. (On many modems, such as the Hayes Smartmodem™, pins 5 and 6 are in fact connected together and mean the same thing. Not all modems supply these signals.) The Mac, unfortunately, has only one input for this kind of status information, and it's a judgement call about which of the three to use. I recommend pin 5, unless you are running a BBS and need to monitor incoming calls via pin 8. Note: when going from the Mac to the Imagewriter, you can go to both pins 6 and 8, because there they are input pins.

**Q:** How do I connect a Mac+ to a ... ?

**A:** Here we go again with more cable information. The two previous columns gave many resources for cables and parts. Here's a list of Apple supplied cables. To connect a Mac+ to an: Imagewriter I, use A2C0311; Imagewriter II, M0187; LaserWriter (direct), M0185; LaserWriter (via AppleTalk backbone), M2052; Old Macintosh, M0185; Another Mac+, M0187; //c, A2C4312; //e, A9C0313; Lisa, XL, or Apple ///, A2C0311. contd.

**Q:** Using the terminal program Microphone™, my IBM mainframe uses Cntl-Q (XON) as a prompt character. How do I get Microphone to recognize it?

**A:** Turn off XON/XOFF transmit throttling.

**Q: Help!** When printing on the Imagewriter, things go well for half a page and then garbage starts to come out.

**A:** There are two ways an Imagewriter can tell the Mac to slow down while it catches up with backlogged printing. The method is determined by the position of an option switch which selects between Xon/Xoff and DTR throttling. Check your Imagewriter manual for the location of the switch. With such symptoms, first try that switch in the alternate position. However, some hard disk print spoolers may require DTR throttling. It will fail unless the cable to the Imagewriter has the DTR wire in it - some cables don't. In these cases, you will have to get a new cable.

**Q: Help!** "Single Sided" disks I create on my Mac+ can't be read on my old 512K Mac.

**A:** Chris Allen (of Dreams of the Phoenix) reports that there is such a compatibility problem in some significant fraction of cases. The solution is to initialize the disks on the 512K Mac before writing data on them with the Mac+. By the way, if you have received any recent software from DOTP, and if you have this problem, you may, of course, exchange it.

**Q:** I have the new 128K ROMs. Can I knock any of the resources out of my System file to save space?

**A:** The first answer to this question I heard from Apple, and the answer I gave at the meeting, was No. However, it now seems that you can. And if I get a list I'll repeat it here in a future column. Some of the resources in the new ROM (and listed in Tech Note 57), such as the Chicago font, seem to have precedence over the System file. (Any experimenters out there?)

**Q:** At the meeting, Ellen Leanse, Apple User Group Evangelist, referred to WAP getting on AppleLink. What is it, and how does it help us?

**A:** AppleLink is an electronic bulletin board that Apple maintains for communication with its dealers and personnel. They post price and other data, announcements, and current information. People in the field can also post questions, which Apple HQ will try to answer. As part of Apple's program to promote cooperation with user groups, selected user groups will also be given access to AppleLink. I don't know who the WAP contact person will be yet, although Jim Burger already uses it for other reasons. Information from AppleLink will find its way into the Journal and will be discussed at meetings. Also, it's another way we can give feedback to Apple.

Independently of WAP's possible access to AppleLink, your dealer already has access to it in order to serve you better. If you have a technical or support question that your dealer can't answer to your satisfaction, please insist that he pass the question along to Apple using AppleLink. And follow up with phone calls until a reply is received.

**Q:** Can I connect my Mac and LaserWriter, on an AppleTalk network, to my VAX and Ethernet?

**A:** Contact Kinetics, Inc., (415) 947-0998, and ask for information on their product line.

**Q: Help!** My HyperDrive keeps crashing.

**A:** Three suggestions: (1) Run HyperInstall often, especially whenever you change the System file by adding Fonts, DAs, or Jazz Install. (2) With the HyperDrive 20 and its recent software, do not run any program that uses the free-form sound synthesizer. (These include Rascal, Banzai!, Billiard Parlor, and Studio Session.) The combination wipes out the disk. (3) Do not use Finder 5.0 or later on a HyperDrive 10, until GCC tells you to.

**Quickies:** You can get a generic backup program for any HFS hard disk from the MacBottom people, call 800-MAC-BUTT for details ... Remember, when planning hard disk backups that you should already have the applications on floppies ... If you already have a MacBottom, call and ask about their "mini-update" ... Marty Milrod warns people that the new 800K disk drives have tight tolerances, and can jam if the disk label is not stuck on tightly ... Tempo 1.1 is shipping, call (303) 443-1049 for update information ... The Mirror Tech 400K external disk drive does not work with the new ROMs ... Neither does the MaxMemory 1.5Meg "upgrade" (beware of unusual third party upgrades!) ... Thanks again to the folks on MAUG™ for much of the information used in this column. ☺

Q & A contd. from pg 22

```
140 PRINT CHR$(4)"READ "INFILES
150 K=K+1 : J=1 : BS(K)="
160 GET AS
170 PRINT " ";AS;
180 IF AS<>CHR$(13) THEN BS(K)=BS(K)+AS :
    REM IF NOT CR ADD CHARACTER TO
    STRING
190 IF AS=CHR$(13) THEN BS(K)=BS(K)+" " :
    REM REPLACE CR WITH A SPACE
200 J=J+1 : IF J<256 THEN 160 : REM GO GET
    NEXT CHARACTER
210 GOTO 150 : REM IF STRING=255
    CHARACTERS, START A NEW STRING
240 REM -- NOW START PRINTING TEXT TO
    NEW FILE --
250 POKE 216,0
260 PRINT CHR$(4)"CLOSE "INFILES
270 PRINT CHR$(4)"OPEN "OUTFILES
280 PRINT CHR$(4)"WRITE "OUTFILES
290 FOR J=1 TO K : PRINT BS(J) : NEXT J
300 PRINT
310 PRINT CHR$(4)"CLOSE "OUTFILES
320 END
```

☺



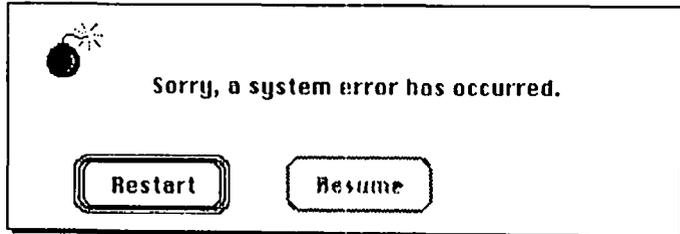
# MacNovice Column

by Ralph J. Begleiter

## The Bomb

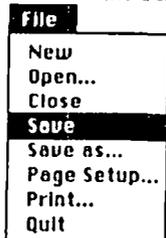
You're just finishing up a long letter... or a large spreadsheet format on your Macintosh. You've got everything just the way you like it and you're ready to print. You make one last change in a font style, or an adjustment in the margins. Suddenly, "The Bomb" appears on your Mac screen, along with the polite message: "Sorry, a system error has occurred." The buttons on the screen allow you only to "Restart." When you do so, and re-open your document, you discover that many of the changes you made, including much of the last hour's work, are no longer recorded.

You're the victim of a "system error" (whatever that means). And although the Macintosh informs you of the disaster politely, Mac's etiquette doesn't make up for your lost time and effort.



Probably the single most infuriating aspect of "The Bomb" is that the "alert message" you see on your screen tantalizingly suggests the option of "Resume" but because that command is dimmed, you can't pick up where you left off. Only the "Restart" command is active, and that command shuts down the Mac, erasing its memory and casting away everything you've done since the last time you "Saved" your work. If the Apple developers could accomplish just one miracle for those of us who are MacNovices, it should be the activation of that "Resume" command so that at least we'd be able to "Save" one last time before the computer bombs.

The lesson we've learned from "The Bomb" is to SAVE EARLY AND OFTEN. In fact, saving your work should become a routine, no matter what you're doing. Whenever you pause to think while writing a letter... whenever you stop entering data in a spreadsheet to look something up... SAVE YOUR WORK IMMEDIATELY. (Because Apple didn't provide a keyboard equivalent to using the mouse to Save, I made one myself, using MacTracks. By pressing Command-Option-S, my current document automatically Saves. If you're willing to experiment with Apple's "Resource Editor" program, you can add your own keyboard equivalent to the "Save" command in the File menu.)



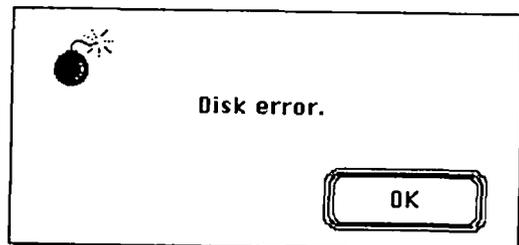
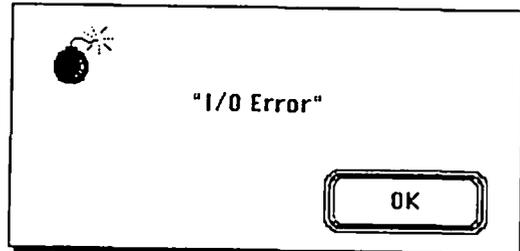
Save Early,  
Save Often!

But back to "The Bomb." In some programs, the alert message for a "system error" suggests that you "Please try again." While the words are polite, the fact is, you can't try again without restarting your Macintosh and losing any data you haven't already saved. The only way to deal with this problem is to restart, and reconstruct what you've lost, this time being sure to save frequently.

There are a number of "system errors" which are disguised so well that you may not recognize them at first. For instance, you're merrily working along when suddenly the screen starts to crackle and the image seems to "freeze." You try to use your mouse, but the pointer doesn't move. Or the pointer moves, but you can't seem to "click." These are symptoms of "system error" also. In these cases, you get no alert message. You'll just have to guess that an error has occurred. The only way to recover from these situations is to restart and reconstruct again.

Another type of "system error" is equally "invisible." Perhaps you've opened a document to work on it. While "reading" the document from your disk, you eventually realize that your disk drive is just spinning aimlessly, never changing pitch, never producing any action on the screen. Although the disk drive is still spinning, your Mac has gone into shock. Your mouse can't help; the Command-E ("eject") combination doesn't work, and even Command-• [period] has no effect. The only way to recover from this is to restart and reconstruct your file. (Actually, this is a less-burdensome system error, since the file itself hasn't been opened or altered, so you've probably lost nothing but time.)

There are some "bombs" which are less hazardous to your work, but difficult for MacNovices to deal with. The alert messages: "Disk Error" and "I/O Error" are puzzlements to novices. What is a "disk error" anyway? Did the disk make a mistake? And how many of "the rest of us" know what an "I/O error" is. (It stands for "input/output", but knowing that doesn't help very much!)



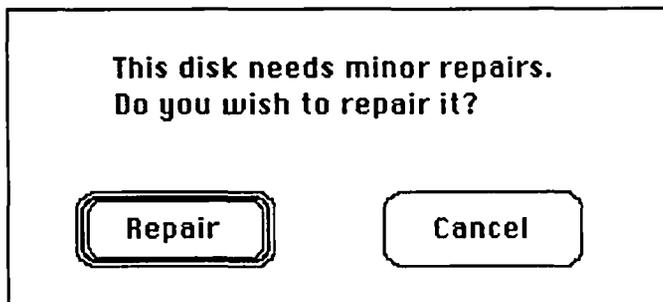
contd.

Actually, in both these cases, you can try remedies which might help. Usually, these alert messages mean your Mac is having trouble reading what's on one of your disks. The problem could be a faulty disk. (There is one alert message which even says "bad disk.") Or the problem could be a disk drive which is a bit out of alignment or off speed. Sometimes, I've found, this occurs with the internal disk drive after your Mac has been working for several hours and its insides are too warm. Try ejecting the disk and using your external drive (if you have one). Or, try shutting down your Mac for a while to cool it down.

Or, in the case of "I/O error," try returning to the "Finder" and making a copy or duplicate of the file and opening the copy next time. (Mac will write the copy onto a different portion of the disk...or onto a different disk, and may be able to read it next time.)

A related problem occurs when you insert a disk and the Mac tells you "This disk is unreadable." (The alert message goes on to ask: "Do you want to initialize it?") If you choose "initialize" you will erase (or, more correctly, "lose track of...") all the data on that disk. Don't choose "initialize." Instead, choose "eject" and try inserting the disk in another drive. Or try waiting for the Mac to cool down. Or work with another disk for awhile. The message means Mac is having trouble reading from that disk. It does not mean that the data on that disk is already lost.

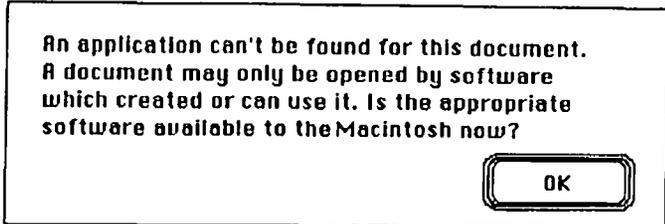
Incidentally, when you see the alert message which says: "This disk needs minor repairs. Do you want to repair it?" It's OK to choose "repair." You won't lose your data, but you'll probably lose the names of folders on the disk. You'll have to use the "finder" to reconstruct the folder organization you had on the disk. Don't choose "initialize" unless you want to erase the disk. [Remember that "initializing" means painting the "white stripes" on the "parking lot" where the data will "park" on the disk to help the Mac find your data. Repainting the stripes loses all track of where your files are.]



If you're trying to save a new document onto a disk, and you get the message: "Disk is Locked", don't bother returning to the "Finder" to "unlock" the disk in the "Get Info" window. The message means the small plastic "write-protect" tab on the disk itself has been moved into the position which prevents anything new from being written onto the disk. To remedy the situation, simply eject the disk (by choosing the "open" command and choosing "eject" from the dialog box which appears), and slide the "write-protect" tab in the other direction. When you can see through the hole in the disk under the tab, it means Mac will not be able to write on the disk.

Speaking of seeing strange alert messages, it would be a

worthwhile project for Apple to revise some of them so they're comprehensible to MacNovices. "An application can't be found for this document" isn't very clear to someone who doesn't use the word "application" to describe the computer programs (software) which is used to create those documents. (Trying to open a MacWrite document without the MacWrite program somewhere in your Mac is what causes that alert message to appear.) "Too many paragraphs" in the latest version of MacWrite is another cryptic alert message. After all, how can a word-processing document have "too many paragraphs?"



It would help to have such unusual messages include a clue on how to remedy the problem. In fact, a truly "user-friendly" Macintosh program, system file or finder would probably include some "help" menus which could help Novices work their way out of system errors and other "bombs".

Meantime, we'll just have to experiment, refer to our manuals (which are often of little help with system errors)... and live with "The Bomb." ☹

Work•n•Print contd. from pg 66

The program also permits you rename, duplicate or delete files via something called File Facts. This appears to perform simple tasks similar to those now available in several DA's such as Utilities, Extras and DAFile... useful but nothing very special.

In fact, the entire program represents an attempt to do something very useful, but is so "kludged" with special conditions and procedures that its overall utility is, in my opinion, limited. When nice print spooling arrangements such as those in the MacBottom hard disk come along, I'll use them if they are affordable. Until then, I'll just suffer the printing time instead of trying to master a minimal program with fairly limited documentation and performance. ☹

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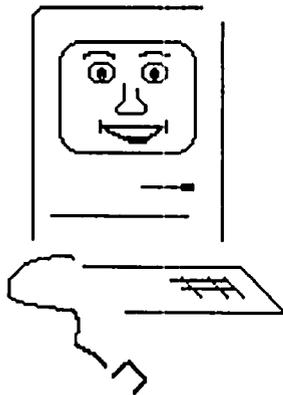
# ELIZA SPEAKS UP IN CLASS

by Bill Hershey

It was fifteen minutes before the class was due to start, and the room was already half full of students. A lonely Macintosh sat on a small wooden table at the front of the room. Its mouse hid under a Nealon fur coat—the light gray, pink-nose model. In an unobtrusive slouch in one of the student desks, I paged through the introductory computer textbook and waited for the minutes to tick by. I wondered what this semester's students would be like. The loud laughter and rapping of the janitors in the hall worried me, because the success of the experiment depended crucially on the students' ability to hear every syllable.

By 6:56 the hallway noise subsided, and I breathed a sigh of relief. But now it was too silent. No one talked. As 7:00 approached, I feared the mere click of my remote control button would give me away. Finally I groped clumsily for the little Radio Shack transmitter concealed in my coat pocket. Shuffling my feet, I squeezed the button.

The Macintosh beeped and lit up with a cartoon face that filled the screen. The students, who had been staring down at their desks, now looked with raised eyebrows at the funny little box. When the Mac cleared its throat and started to talk, smiles and quite a few puzzled looks broke over their faces.



eh eh um eh em May I have your attention please. Welcome to CAPP one oh one. Can you hear me in the back? I'll try to speak as lahwdly as I can, but my speaker is not very big. In a few minnettes, you'll get used to my acksent. Some people say I sound Scandinavian. Well, let's get started. Due to Gramm-Rudman buhjet cutts, Mr. Willyam Hershey, who was the regguller instructor for this course, has been laid off. The University of Maryland's University College is trying a bold new experiment to put computers into the classroom as instructors. My name is Mac, and I am your instructor. I'm sure that we will get along very well.

The students chuckled as they cocked their heads and strained to catch the foreign-sounding words. Mac continued with his opening remarks:

I've brought with me tonight a computer program who is an expert at talking with beegin- ning computer sighyence students such as your- selves. Her name is Eliza, and I'm going to turn the floor over to her. But I need a volunteer to

help me with Eliza, preferably someone who can type. Would one of you please come forwerd? Don't be shigh. I won't hurt you.

No student would be lured by the talking computer, but Mac continued, oblivious.

Thank you. Now, listen carefully. When I get through speaking, would you please slide the mouse toward you. He will not bite you. As you move him, an airroe will move on the screen. Puhzission the airroe over the object in the center of the screen, named, Eliza. Then press on the back of the mouse 2 times. The little fella has a button, hidden under his fur coat. Be sure to space your clicks of the button, close together. Eliza will take it from there. I will help her by repeating your questions so that everyone can hear. Thanks, and now, here's Eliza.

The cartoon face vanished, and the Macintosh desktop appeared with a single icon in the center—Eliza. The class sat firmly in their seats, looking alternately at the helpless computer and each other. A smug Commodore 64 owner in the front row advised, "We're going to sit here a long time if somebody doesn't do what it said to do".

The woman closest to the front table stood up and successfully highlighted the disk icon but did not manage to follow the instructions that Mac had so painstakingly enunciated. When she gave up, another man poked at the Eliza icon but could not master the art of the double click, even with my shouted urgings. "I think you have to make the clicks faster together". When he, too, sat down, I approached the stubborn machine and tried to suppress the evidence of hundreds of hours of mouse-pushing. Feigning uncertainty, I slowly centered the pointer over Eliza's icon and launched her.

I returned to my chair, hoping that the students would find typing easier than mouse-clicking. Eliza's greeting elicited more smiles:

*Thank you, Mac. I'm ready for your questions. Just type them in, and I'll respond. Press the Return key after each entry. Go ahead.*

This time the voice was "female", but it sounded more like a man's falsetto. The students stared for awhile and then realized that the ball was again in their court. The woman who had failed double-clicking bravely stepped forward again. She was obviously more comfortable with the keyboard. A voice from the back of the room shouted, "Ask it where the instructor is." She typed, and Mac parroted her keystrokes:

**Where is the instructor?**

Without even pausing to think, Eliza responded:

*Why do you ask?*

This time there was genuine amusement, and even some healthy laughs. A computer talking to itself is funnier than a computer talking alone. Eliza's performance was a little reminiscent of a male ventriloquist working with a female dummy. The next exchange flattered me at first, but the dialogue did not look promising.

**We need him.**

contd.

*I am not sure I understand you fully.*

**We want to go home.**

*Please go on.*

But the students began to warm up to Eliza and suggested a real question to the woman at the keyboard.

**When do we complete our assignments on the computer?**

*Do you dislike assignments?*

Finally, a hit. But the typist regressed into a string of one-word answers typical of initial encounters with Eliza.

No.

*Are you saying "no" just to be negative?*

No.

*You are being a bit negative.*

No.

*Why not?*

Several students voiced real concerns, but Eliza could not provide much help. She even revealed one of her grammatical flaws.

**Are the computers and disks available at the Shady Grove campus?**

*Did you think they might not be the computer and disks available at the Shady Grove campus?*

Yes.

*You seem to be quite positive.*

**When is the first assignment due?**

*Does that question interest you?*

Yes.

*You must be optimistic then.*

Of course.

*What does that suggest to you?*

Nothing.

*Do you feel strongly about discussing such things?*

No.

*Why no?*

Finally I yelled a question I had programmed into Eliza's "script." This version of Eliza, which is available on Washington Apple Pi's SigMac Volume 31, comes with a script equivalent to the one Joseph Weizenbaum used when he created Eliza twenty years ago. The script is a text file containing keywords and rules for decomposition and reassembly of sentences. You can use the original script, modify it for your own purposes as I did, or even write your own from scratch. Spending a couple of evenings at the task, I had tried to anticipate the students' questions. The script contained such keywords as *exam*, *assignments*, *computer program*, *lab* and *books*. After the typist entered my question about books, the students picked up the idea.

**What books do we need for the course?**

*I think books are a valuable informational resource, especially for this course.*

So do I.

*You say so do you?*

**Where is the lab?**

*The lab you will use for this course is in the basement of the Adult Education Building.*

**What hours is the lab open?**

*Heck if I know. They keep changing.*

But after a promising question that included my name, the conversation degenerated again quickly.

**Where is Hershey?**

*Wouldn't you like to know?*

Yes.

*You are sure.*

Yes.

*I see*

**I don't.**

*Don't you really?*

At that point one of the women boiled over. She did not appreciate this waste of her time. Gathering up her books and coat to leave, she snarled her final question at the typist.

**Does Hershey have a telephone number?**

*I'm keeping him informed on the progress of this class.*

Thanks.

*That is interesting. Please continue.*

I was panicky. I had been intent on letting Eliza complete her dialogue. One more reference to my name, and she would have responded:

*He is in this classroom right now. Allow me to introduce him. Mr. Hershey, would you please step up here? Thank you, class.*

But the angry woman was about to walk out the door. I didn't want to lose her, so I quickly urged the typist to try typing "bye".

Bye.

*Goodbye. It was nice talking to you. Judging by your questions, I trust that you will all do very well in this course.*

I arose and walked to the front. The woman with her coat on sank sheepishly back into her seat. She was still not amused.

Almost apologetically, I identified myself and tried soothing the angry student by explaining the stir Weizenbaum's Eliza program created when he first introduced it. Some experts even thought it held promise for the field of psychiatry. People used to ask Weizenbaum to be permitted to interact with Eliza in private. In those days, of course, the dialogue was solely by terminal, as voice synthesis techniques were not as fully developed as they are today. Some of these early Eliza users insisted that the machine really understood them. Today, I noted, not very many people are fooled—especially not this class. ☞



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# MacSPIES: Keeping Little Sister Out of Your Diary

by John B. Yellott, Jr. (© 1986)

*"Give me access to your codes, give me access to your ciphers, and I don't need any of your other secrets. I'll have them already."*

—National Security Agency employee testifying at trial of Jerry Whitworth for selling cryptographic secrets to the Soviet Union, Washington Post, March 26, 1986, A16 col. 1.

Queen Elizabeth's spies and a broken cipher got Mary, Queen of Scots beheaded. Germany lost both World Wars in this century in part because of overconfident cryptographers. And—most important in terms of world history—a British decryption machine was the ancestor of your Macintosh.

This is a general introduction to ciphers and Mac's heritage in espionage, concluding with a review of three brands of MacCipher software.

## Cryptography 101: Making (And Breaking) a Cipher

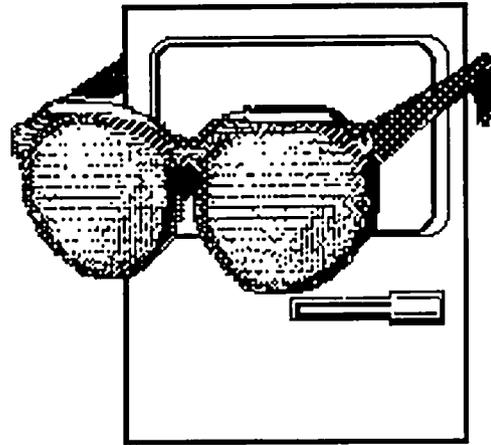
A "cipher" (as opposed to a "code")<sup>1</sup> is a secret alphabet for changing plaintext, as they call it, to ciphertext. The list of instructions for creating the alphabet, like A=Z; B=Y, C=X, etc., is called the cipher key. There is no limit to the ingenuity of cipher keys. There have been keys with dancing stick figures, pinholes in fenceposts, misplaced dots on "i's" and crosses of "t's"; one spy delivered messages by haircut.

There is, however, generally a trade-off between speed and security. A cipher easy to make is usually as easy to break. For example, assume my little sister discovers my most intimate diary, buried in my closet and marked "Top Secret—Reading This Gives You Warts." I wrote a particularly sensitive entry in an all too fast and simple cipher:

4-5-1-18 4-9-1-18-25:  
9 14-5-5-4 13-15-14-5-25 20-15 2-21-25  
15-6-6 13-25 19-9-19-20-5-18  
2-5-3-1-21-19-5 19-8-5 11-14-15-23-19  
5-22-5-18-25-20-8-9-14-7 1-2-15-21-20 13-5  
1-14-4 18-5-7-9-14-1.

My despicably clever little sister is an amateur cryptanalyst. She would start with the advance intelligence that I write in English (nearly). There are only two English words of one letter: the 9 standing alone must be either "A" or "I." She would try the most common letter, "E" wherever the most common number, 5 appears. She would try some two letter words like "of," "to," "in," and "or," for the numbers 20-15. Any library book on ciphers offers tips like letter frequency tables, common bi-grams ("th," "he;") and the fact that more than 50% of all words begin with T,A,O,S or W and end with E, S, D or T. Guesswork, and hunting for the patterns of grammar and spelling, are the basics of cryptanalysis. One broken word infects the others like a cancer until the whole cipher succumbs.

If you have not cracked my cipher yet, the key is the



obvious A = 1, B = 2, C = 3, and the text is DEAR DIARY: I NEED MONEY TO BUY OFF MY SISTER BECAUSE SHE KNOWS EVERYTHING ABOUT ME AND REGINA. At last my sister can proclaim victory in Sibling Rivalry.

History records that such simple cryptanalysis settled the family squabble between Queen Elizabeth I and Mary Queen of Scots, in the year 1596. The Queen's minions deciphered one of Mary's letters plotting the Queen's overthrow, and the Queen had a fake footnote added inviting Mary's co-conspirators to reveal their names. They obliged. By the time the Queen's overworked axeman got to Mary, it is said, he was very tired. Mary received the axeman's three strokes with her customary equanimity.

Mary and I could have used a more complex cipher with multiple keys so 5 is an "E" one place and an "S," "P" or "O" the next. Even repeating the same key twice within ten different messages renders the cipher vulnerable, over the course of hundreds of messages. Completely secure communications would require millions of random keys—but just keeping track of them, let alone transcription, would be nearly impossible.

That brings us to 20th Century cryptographic machines and the antecedents of the computer.

## Automation, And How Mac's Great Aunt Saved England

The Germans learned the vulnerability of simple hand-transcribed ciphers in World War I. Up until 1917, Congress was reluctant to get us involved in the mess, and kept us comfortably neutral on our side of the Atlantic. But then the British cracked a secret German telegram offering the states of Arizona, New Mexico and Texas to Mexico if Mexico would kindly declare war on us. That did it. Congress declared war on Germany, with unpleasant consequences as far as the Germans were concerned.

So by World War II German cryptographers went high-tech, with a machine appropriately dubbed Enigma. Enigma was akin to an electric typewriter with circuitry routed through a series of rotors. Each time you pressed a letter, Enigma's rotors advanced one step, changing the cipher key. That meant a different key for each letter; not just each message. The Germans believed Enigma ciphers were unbreakable.

Wrong again. Allan Turing, a British mathematical genius, played little sister to the Third Reich. He invented a machine called the Bombe, which automated the search for contd.

patterns among the millions of ciphers, laboriously reconstructing Enigma keys. The Bombe got good enough at reading German military radio traffic to find the U-boats in the Atlantic, and Rommel in Africa, and the V-2 factories at Peenemunde, and win the Battle of Britain, and choose the beach for the Normandy invasion—and the Germans never knew. The Bombe was the most desperately guarded British secret of the War. Churchill sacrificed an entire Scottish regiment, and the city of Coventry, simply to preserve German ignorance. The Ultra secret was not made public until the 1970's.

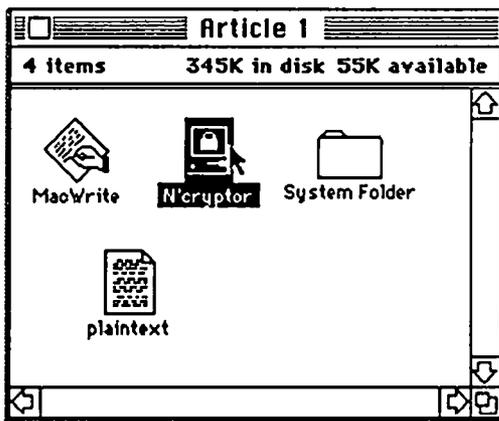
The Bombe was not quite a computer, but incorporated principles Turing used a few years later in constructing his Universal Machine, which was one. So Turing's Bombe was your Mac's great aunt. She had primitive relays "sounding like a battery of knitting needles." And she quietly saved England<sup>2</sup>—with less computing power than your Mac uses to start up.

**Knowledge Is Power,  
And How Mac Can Protect You**

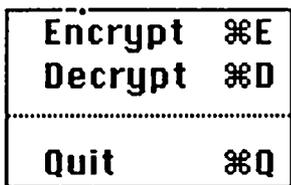
Just as Mac's great aunt staved off the Nazis, your Mac on a lesser scale can stave off your little sister, or fellow employees sharing your hard disk, or whatever. Mac inherited his great aunt's patience: it never loses track of cipher keys or gets bored transcribing.

Most MacCipher keys are based on an algorithm (English majors, "algorithm" means a list of instructions) like the U.S. Data Encryption Standard ("DES") that our Bureau of Standards developed as a prototype for commercial encryption. The DES is on the Department of State Munitions List, meaning you need a special clearance to take some MacCipherware overseas.

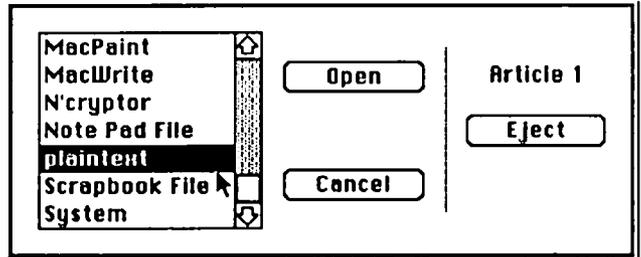
In general, all MacCipherware locks plaintext into ciphertext with an algorithm keyed to a secret password. As an example, with N'Cryptor (discussed below), after you have created a document in plaintext you start by clicking the application on the desktop:



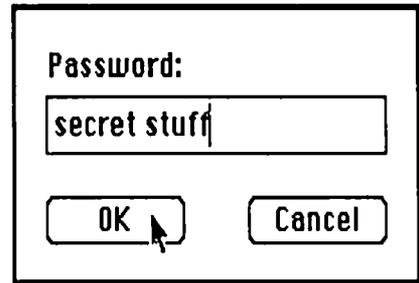
Mac asks whether you want to encrypt or decrypt:



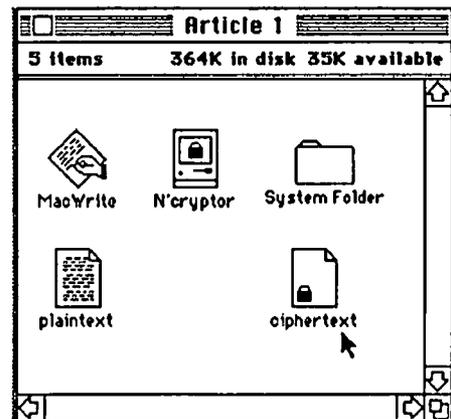
Then asks which file to encrypt:



Waits for you to pick a password:



And Mac does the dirty deed. Your desktop shows a new locked ciphertext document, and you can keep or discard the plaintext:



Without the password you cannot open the document. Cheating with a file edit program might show you the ciphertext, which otherwise would not be visible. But that does little good, because in MacCipher the same diary entry my sister cracked comes out:

```
..plaintext.....
.WORDMCR...m.....*.....}.....}.....
4/56;:2=!=$!%&:"(<,$/7)2w...XP1XE`.D;G1b1\,GaloS=(NUKJ.L.Larq|c
k.l.l|.....{f.bzqfd..pronf.....
4,48:92;!;$!%&."(<,$-7)!..y4BX5UG..D*G\JY1E*DHPI(NUKJGLTK_r_..ye
i_kk)+)ayb.cxe.bzhfcpypqmf.....r.y.Y.....Z}.....
..48:92;..$!%&:..(+-$-7)...kXPX1..*_E.Hga5Z_F_DQO.t.UKJoLT.m...
is(y|.}.zd.l.....
```

contd.

Unintelligible. "Plaintext" was the name of the document I encrypted, and "WORDMACA" is the type and creator of this file, but I have no idea what any of the rest of this is. If there are patterns to reveal sentence structure and spelling, I defy even my sister to find them.

### Never Underestimate Little Sister— or Big Brother, for That Matter

I should have known better than to defy little sister. First, simply erasing the old plaintext was not enough. My sister could use an "unerase" or "debug" program to resurrect it from the seemingly empty disk space. You must actually write over a magnetic recording to destroy it. Ask Richard Nixon.

Second, some MacCipherware includes a back door. The software writers found that locking ourselves out of our own data is more common than invading other people's privacy. And data destruction by vandalizing passwords, rather than data pilferage, is the most prevalent problem in business computing today. The cipher at the front door protects you from others, and the backdoor protects us from ourselves. But that means of course, my sister could call the manufacturer, pretend she forgot my password, and ask how to get in the back door. Rats.

As if little sister weren't bad enough, be forewarned that nothing stops Big Brother—government spooks like our very, very secret National Security Agency (NSA) and its Soviet equivalent. Data leaks out of Mac through disk drive and keyboard emissions (codeword TEMPEST) even before Mac can encrypt it. Your screen, in particular, is like a trumpet blaring out the data to sensitive electronic ears. Mac is not TEMPEST-hardened, for which reason Mac cannot ingest classified information.

Even assuming Mac gets TEMPEST-hardened and leakproof, NSA can still marshal the power of cryptanalysis by Cray computer. I called NSA to ask about MacCipher security, and they were cagey. But you can safely assume that trial-and-error at billions of errors a second is pretty darned effective. You can also rest assured that at least four embassies overheard that telephone call, and perhaps the NSA read this article before I printed it out.

### At Long Last— the MacCipherware Reviews

Since a MacCipher only stops little sister if she doesn't cheat, and nothing stops Big Brother, I see no point in a futile quest for perfect security. Modest security (if only to slow them up) and a lean, clean algorithm to get you in and out of ciphertext quickly is good enough to baffle all but the most committed voyeurs.

Opinions on three MacCipherware brands based on gleanings from reviews, talks with the manufacturers, and experience:

1. P/C Privacy—McTel Inc. Three Bala Plaza East, Bala Cynwd Pa. (800) 628-3584. Price: \$90.00 retail; roughly \$78.00 mail order. Not copy protected.

McTel originally wrote P/C Privacy for Mac's arch-nemesis, an Ignorant Boring Machine that will remain nameless. The main advantages of P/C Privacy are options like hiding the password as you type it, and creating a pure ASCII file for ease of communicating enciphered text. The

disadvantage is that P/C Privacy uses a variation on the full DES algorithm, which is a lumbering memory hog of a cipher key. Working on a good-sized document (4,000 words), P/C Privacy was clocked at 90 seconds to encrypt, and 114 seconds to decrypt. It doubled the size of the file. McTel adopted P/C Privacy for Macintosh and cut the price by \$50.00, but still, the sins of the father....

2. Hippolock—Hippopotamus Software, Inc., 985 University Ave. Suite 12, Los Gatos CA 95030 (408) 395-3190. Retail \$139.95; mail order roughly \$72. Copy protected.

Hippolock is very much a Macintosh program, with pull-down menus, icons and dialog boxes, and it has the flexibility of three levels of security. On maximum security Hippolock takes two minutes to encrypt a good-sized document, and on the minimum about 20 seconds. There are backdoors on the first two levels.

Beware of maximum security, the reviewers warn, because Hippolock goes paranoid. You cannot see the password as you type. One mistake causes panic: Hippolock re-encrypts the file, trashing the data forever. A reviewer tried to open ciphertext with MacWrite 4.4, and an hysterical Hippolock stomped all over his disk and trashed his system. Basically, with Hippolock you pay extra for the option of making your software suicidal.

3. N'Cryptor—Mainstay, 28611B Canwood St., Agoura Hills, CA 91301 (818) 991-6540. Retail \$39.95; mail order about \$28.00. Not copy protected.

N'Cryptor is the MacCipherware I use: cheap, simple, fast and practical. The application takes only 5K on your disk. Encryption takes five or ten seconds. The ciphertext is but a bit larger than the plaintext. N'Cryptor has no backdoor, or at least Mainstay does not admit to including one. And N'Cryptor has convenient features like defaulting to the name of the plaintext [in brackets] unless you rename the ciphertext file.

N'Cryptor cannot offer the impenetrability of Hippolock on maximum security—but this is for my diary, not command and control of nuclear weapons. If little sister goes to work on my disks to find out more about me and Regina, well... I can always tell Mom.

1. To be picky a "code" re-names things, as opposed to a "cipher," which re-spells them. An illustration of code would be the Secret Service codename for Ronald Reagan: RANCHER, or Churchill's codename for the invasion of Europe: OPERATION OVERLORD. Morse code is really a cipher: an alphabet of dots and dashes.

2. The secret of how Alan Turing's machine held off the Nazis, was first exposed in detail in an excellent book entitled BodyGuard of Lies, by Anthony Cave Brown (Harper & Row). Ironically, modern American military regulations would require refusing Alan Turing employment or a security clearance, because of his (openly expressed) sexual orientation. ☹

# Power Plus!



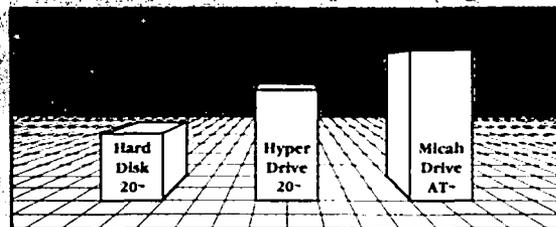
Power plus means the fastest, coolest operating, most rugged and reliable internal hard disk you can get for your Macintosh® or Macintosh Plus®. The MicahDrive AT®.

Besides great speed and 22.4 mb of formatted capacity, the MicahDrive AT® comes complete with print spooling, security, backup, and hard disk management software that provides 100% MFS or HFS compatibility. And since the MicahDrive AT® can boot directly from the hard disk with 64K ROMs or 128K ROMs, you needn't worry about incompatibility when you upgrade your Macintosh® to a Macintosh Plus®. The reinstallation is quick and easy.

With the Macintosh Plus®, the MicahDrive AT® supports an additional 1 to 3 mb of add on memory with MicahMemory® expandable RAM.

Because it's internal, the MicahDrive AT® leaves more room on your desk while leaving your Mac portable. And it's all backed by a one year limited warranty.

## Relative Data Transfer Speed Comparison



To find out more about the MicahDrive AT®, and the name of your nearest authorized Micah dealer dial up MicahLink® -our 1200 baud, 24 hour a day BBS at (415) 771-1119 or call (415) 331-6422 during regular business hours.

# MICAH

2330 Marinship Way, Suite 111, Sausalito, CA 94965 (415) 331-6422, Telex: TWX 510 600 1221

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# FREDERICK APPLE CORE

A SLICE OF THE WASHINGTON APPLE PI



## OFFICERS & CHAIRMEN

President - Scott Galbraith  
 Vice President - John Lee  
 Secretary/Treasurer - Bruce Taylor  
 Librarian - Tony Svajlenka  
 Program Chairman - John Lee  
 Newsletter Editor - Kathy Kenyon  
 Newsletter Chairman - Lynn R. Trusal  
 SIG MAC Chairman - Lynn R. Trusal  
 SYSOP - Scott Galbraith

## HOTLINE MEMBERS

Lynn R. Trusal - (301) 845-2651  
 Scott Galbraith - (301) 865-3035  
 Kurt Holter - (301) 663-4199  
 Bruce Taylor - (301) 371-6181

The above members of the "Frederick Apple Core" (FAC) have agreed to field questions on Apple computer hardware and software for FAC members. Please no calls after 10:00 PM.

The Frederick Apple Core meets the second Thursday of each month in the large conference room of the U.S. Army Medical Research Institute of Infectious Diseases, Ft. Detrick, Frederick, MD 21701-5011 at 7:30 PM.

The SIG MAC of the Frederick Apple Core meets on the fourth Tuesday of each month in the same location and at the same time. MAC owners in the local area are welcome. Call Lynn R. Trusal at (301) 845-2651 for details.

### Upcoming Programs

May 8 - Program to be announced

### SIG MAC Upcoming Programs

May 27 - Macintosh Plus

## MACINTOSH COMMUNICATION WITH THE REST OF THE COMPUTER WORLD

by Lynn R. Trusal (Frederick Apple Core)

In the September 1985 issue of the WAP Journal (p. 52), I discussed setting up a Macintosh AppleTalk Local Area Network (LAN) in a division of our research institute. This is just one part of my larger effort to make the Macintosh a viable productivity tool, and increase its use as a means to communicate with other computer environments. In this article, I will discuss the use of the Macintosh LAN and other ways that we use the Macintoshes to communicate with other computers, networks and word processors. First, I want to address the issue of "compatibility", as it refers to microcomputers in a working environment.

Too often people get hung up on the term "compatibility" when discussing the purchasing of computers for office environments. Many ADP directors insist on purchasing only one make of microcomputer or compatible which share the same operating system. There are obviously business environments that this is desirable and perhaps a must. If "disk to disk" compatibility is needed, this may be the only option, but there are many office environments where this is not a requirement. IBM compatibility for the sake of IBM compatibility without a demonstrated need is pointless and counter productive.

Another argument for only one make of computer is the

need for the ADP group to provide computer support to a wide variety of users. It is far easier to become knowledgeable if only one operating system (i.e., MS-DOS) has to be supported. Again, this argument is persuasive and is perhaps necessary in a large business organization. If the chosen computer is the IBM PC and the operating system is MS-DOS, I can understand why the ADP Department only wants to support this system. The IBM is not known for its ease of use and requires more training and support than the Macintosh computer. Our computer science office has hired outside consultants to teach IBM courses on topics such as Introduction to Microcomputers, Word Perfect, Symphony, and Lotus 1-2-3. There was no other way to get new users up to speed in a reasonable time. I have provided much of the Macintosh support, but most users quickly learn the software with little or no help. It was not long before I felt like the Maytag repairman and Rodney Dangerfield rolled into one. In spite of its ease of use, the Macintosh does not run itself and users who are not willing to learn the basics are better off remaining on the sidelines. Indeed, much of the recent purchasing of Macintosh computers has been by individuals who have not previously joined the computer revolution because they were either not interested or intimidated. Therefore, when

contd.

one of these individuals sees what a computer can do, they usually order a Macintosh.

There are still individuals who feel that for a computer to be a "serious computer": it must be difficult to use, and D-Base III is a "real" data base since many hours are required to master it. If complexity is the true measure of value, then I pity the ignorance of those individuals, and they deserve computers such as the IBM PC and its MS-DOS operating system. There are undoubtedly many "middle managers" in corporate America who have desks adorned with IBM's that are gathering dust because they had neither the interest nor the time to master its complexities.

### Macintosh Communications With AppleTalk

First let me address the installation of the AppleTalk network. The best overall guide I have seen is the "AppleTalk Personal Network Installation Guide" (28 pages) which is supplied with each AppleTalk connector kit. One connector kit is needed for each computer or appliance hooked to the network. The AppleTalk teflon cable is available from Apple dealers in rolls with a maximum length of 100 meters (approx. 300 ft). The kit comes with 100 meters of cable, 9 cable extenders and 36 cable plugs for about \$500 (wholesale). Since AppleTalk will support a total length of 300 meters (approx. 1,000 ft.), this kit may not be enough to suit your needs. Additional cable may be ordered from Capital Radio in Rockville, MD. (Belden #9999) in rolls of 500 or 1000 feet (1000 ft). The 1000 ft. roll of PVC cable costs about \$160. This is much more cost effective than Apple's kit, which is priced outrageously for what you get. The large price difference may be related to teflon versus PVC-coated cable. The need for teflon or PVC cable depends on whether you need to run it through walls or in suspended ceilings. The "AppleTalk Personal Network" manual states that PVC-coated cable must run through metal conduit if it is to travel through walls or suspended ceilings.

The teflon cable supplied with the "Custom Wiring Kit" does not need metal conduit. You need to check local building and fire codes regarding the use of conduit. It is my understanding that cable plugs will also be available from Belden and other sources.

Although you may want to hire someone to install the AppleTalk cable, doing it yourself it is very easy to do. A soldering iron, wire cutters, wire strippers, and needle-nose pliers are all you need. A volt-ohm meter is also helpful for checking the continuity of your soldered connections. The custom wiring kit comes with fold-out installation instructions. There are only two wires and a braided ground shield that surrounds the cable and that you crimp to the metal plug. Without any electrical or wiring experience almost anyone can install the AppleTalk cables.

The LAN is not configured in a closed loop nor does it consist of drop cables attached to a main trunk line. The "AppleTalk Personal Network" booklet that comes with each AppleTalk connector kit explains the "do's and don'ts" of installation configurations. Figure 1 demonstrates the layout of our AppleTalk LAN, which currently has seven Macintoshes attached. Most are located on the desktops of division investigators, but one is located in a research laboratory. The cable begins with attachment to the farthest Macintosh and

ends with attachment to the Apple LaserWriter. A Sunol 70-megabyte hard disk server is also attached next to the printer.

Although I have only shown one A-B switch in the figure, there is one attached to the printer port of each Macintosh.

I draw your attention to the Winter 1986 issue of MacWorld Magazine. On pages 70 thru 73 is an article discussing the use of Macintoshes and a LAN in the audit department of Arthur Young and Company's San Jose office. They utilize 62 Macintoshes which share seven Sunol hard disks and five LaserWriters. The author points out that they typically do not use the hard disk for any kind of data storage because of potential data loss from hard disk failure. They have also found that 12 Macintoshes is a good number to connect to one LAN because more than that slows down the network too much if all users are doing multiple accesses to a shared hard disk.

I also decided that this is the best strategy for our division working group. I adopted the use of one shared 70-megabyte hard disk (approx. \$5,500) because of the cost savings over individual disks and the increase in speed and storage available to individual users. At the time of purchase, the Sunol hard disk server was the only large capacity hard disk on the market offering 50 megabytes or more. Since that time, there are now other large volume hard disks. One of the newer ones is AST Research's 74 megabyte hard disk that supports the new SCSI interface of Macintosh Plus.

Although the Sunol disk server will be the topic of a future article, I will discuss some of the basics. The 70-megabyte Sunol disk has 65 megabytes of user-available memory and can be partitioned into seven virtual drives. The amount of memory allocatable to each user depends on the number of virtual drives. The virtual drives can be further subdivided from one to sixteen "volumes." Individual users may be assigned their own virtual drive or several users can share the same virtual drive by the assignment of selected volumes. I will not go into the idiosyncracies of the drive until I have a chance to get to know it better.

Since the system folder takes up over 200K of disk space and the addition of application programs often totals 300 to 350K of space, the hard disk provides the best solution. I installed the system folder, and programs such as MacWrite, MacPaint, Excel and Chart on each virtual drive. Only programs that were purchased by each individual user were installed on their virtual drive in order to comply with each manufacturer's user agreements. We have no need to share programs or data so the lack of a true file server capability is not a liability. Sunol is currently working on increasing its hard drive capabilities to a true file-server but so far it's just more vaporware. Other file-servers are available on the market but most still only function as "disk servers." See the article entitled, "File servers: the Macintosh office's missing link", in the premier issue of MacUser magazine. This article discusses the differences between "file servers" and "disk servers".

### Macintosh Communication to Mini- and Main-Frame Environments

The Macintosh has the same ability as any microcomputer to communicate with mini- and main-frame computers. The Institute recently installed a twisted pair x.25 LAN internally know as RIIDNET which was designed and installed by Glen  
contd.

Higbee and Tim Sanders of the Institute's Computer Science Office. Since we did not have the luxury of individual dedicated phone lines for each division, we ordered a Gandalf X.25 multiplexer and variable speed modem. These multiplexers allow up to 16 separate inputs which connect to one modem and one phone line per division. We then ran twisted-pair telephone cable from each Macintosh to the multiplexer. DB-9 connectors at one end of the cable were connected to an A-B switch attached to the modem port. RS-232 connectors on the other end were connected to the multiplexer.

In the Computer Science Office, these division phone lines enter a cabinet containing high speed switches, modems, and a protocol converter for the Amdahl mainframe. Without going into lengthy detail, RIIDNET allows us to use our Macintoshes as terminals to communicate with an Amdahl mainframe located in Ft. Detrick's Data Processing Center, with a VAX 11/750 and 11/780 in the our Medical Command Headquarters, with a DEC PDP 11/44 located in the Computer Science Office, and with a VAX 11/750 at Walter Reed Army Institute of Research. I have used both MacTerminal and Red Ryder for this purpose and have had no major problems communicating with these non-Macintosh environments. The purchase of dumb terminals to achieve the same purpose no longer makes any sense nor is it cost effective.

Individual investigators can now send data from spreadsheets over RIIDNET to "Wylbur" for analysis by the "Statistical Analysis System" (SAS Institute Inc., Cary, NC) resident on the Amdahl. The statistician can then access the files, perform his analysis and discuss the results with the investigator. It makes no sense to re-enter extensive numerical data into the main frame when it is already entered on the Macintosh.

### Macintosh Communication With Other Microcomputers

Not only does RIIDNET allow communication with mini- and main-frame environments, but it may be used internally to communicate between various makes of microcomputers within the Institute. By using telecommunication software, and knowing the call number of the multiplexer and attachment port number, it is easy to communicate with other Macintoshes, IBM's, or Apple II's. These computers can communicate via the same multiplexer within a division or communicate between divisions over separate multiplexers. Communication may be screen to screen in a conversational mode; or text files may be transferred, saved to disk, or printed to the Imagewriter attached to the computer.

If you have been following all of this, you are probably saying that with the Imagewriter, RIIDNET, and AppleTalk LAN, he must have run out of serial ports on the back of the Macintosh. Well, you are correct! To solve this problem, I have attached an "A-B switch" (MacNifty Switch, \$35 list price) to the modem port for switching between RIIDNET, and the Imagewriter. An "A-B-C-D" switch (MacNifty Switch, \$70 list price) may also be used to attach a modem or other peripheral to this same port. I have installed the AppleTalk LAN on the printer port because this is the port recommended by Apple. I did not want to use an "A-B" switch on the printer port with the AppleTalk LAN attached because of the use of a hard disk on the network. This was

emphasized in the October issue of the WAP Journal (p. 57) by Jonathan E. Hardis in his "MAC Q & A" article. He states that "under no condition, at no time, should you install or use a two-way switch on an output port to a hard disk." It has apparently been traced to the cause of circuit damage in at least one model of hard disk. I don't know if this applies to a LAN with a hard disk installed as a shared peripheral, but I am being safe rather than sorry.

In some of our small offices where two investigators each have Macintoshes, we share one Imagewriter printer and one RIIDNET cable by using an "A-B-C-D" switch. It is seldom that both individuals want to print or use the network at the same time.

### Macintosh Communication to Professional Word Processors

On the rare occasion that we need to send a document to the NBI professional word processor, we use an Anderson Jacobson 300/1200 baud acoustic modem hooked to the modem port on the Macintosh via an "A-B-C-D" switch. Acoustic modems are used because we do not have dedicated telephone lines for Hayes type modems. We routinely dump text files to the NBI and also receive text files from the NBI by reversing the procedure. It was necessary to use Red Ryder for transfer from the NBI to the Macintosh, since the NBI can only send text files and MacTerminal (version 1.0) did not support a text file receive option. With the LaserWriter on the AppleTalk network, use of the NBI becomes largely secondary. The NBI and other professional word processors can not compete with the speed, quietness, fonts, and font sizes available with the LaserWriter.

### Macintosh Communication to IBM Microcomputers

Another example of communicating with the rest of the computer world occurred when one of the scientists wanted to transfer a Word Perfect document from his IBM to the Macintosh used by his co-author. To accomplish this, we used MacLink (Data Viz, Norwalk, CT). The two computers were connected by direct cable. The procedure proved to be very simple and straightforward the first time we tried it. Since MacLink does not support Word Perfect as one of its IBM word processing programs for binary transfer, we used the text file transfer option. MacLink does support binary transfer of Multimate and WordStar documents.

### Conclusions

I have discussed how the Macintosh can communicate with other Macintoshes, Apple II's, IBM's, NBI's, VAX's, DEC PDP minis, and Amdahl mainframes. Now what was that comment about needing the same computer and operating system in the same working environment. Seriously, I do recognize that there are working environments that are best suited for one operating system. In smaller working groups, where there is not as much need to share data and most individuals work as separate entities, there is no reason various makes of computers cannot peacefully co-exist. The battle goes on to have the Macintosh accepted as a serious computer in a business or research environment, but those of us who are dedicated Macintosh users just laugh and keep on computing.

contd. on pg 69

# WAPACROSTIC by Professor Apple

	1	K	2	T	3	O		4	U	5	V	6	E	7	W	8	O	9	V	10	Q	11	M		12	C	13	Q	14	T	15	A	16	O							
	17	Q	18	Z		19	Y	20	C	21	U	22	C	23	P	24	E		25	D	26	R		27	E	28	X	29	Q	30	C	31	P		32	Y					
33	P	34	W		35	P	36	N	37	M		38	S	39	Y	40	G	41	B	42	J		43	E	44	V	45	H	46	Y		47	H	48	T		49	L			
50	F	51	H	52	A	53	F	54	L	55	X		56	X	57	D	58	Y		59	X		60	U	61	Y	62	R	63	I	64	R	65	N	66	K		67	N		
68	G	69	F	70	A	71	W	72	P	73	P		74	H	75	U	76	J		77	M	78	H	79	I	80	D		81	T	82	B		83	H	84	D				
85	S	86	M	87	R	88	B		89	J	90	J		91	A	92	Z	93	O		94	G	95	A	96	X	97	Y		98	H	99	J	100	V	101	T	102	X		
103	B		104	W	105	C		106	O	107	P		108	M	109	X	110	I	111	M	112	N		113	Z	114	U		115	A	116	K	117	D		118	J				
119	E	120	D	121	J	122	B	123	S	124	V		125	G	126	B	127	Z	128	V	129	L	130	F	131	I	132	F	133	R	134	L		135	E	136	Z	137	U	138	L
139	C	140	K	141	N		142	V	143	F	144	R	145	F		146	F	147	L	148	Y	149	L		150	G	151	D	152	I		153	B	154	S		155	K			
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**Definitions**

**Words**

- |  |  |
|--|--|
| <p>A. Reflection <span style="float: right;">115 91 95 52 158 70 15</span></p> <p>B. Surpass in speech <span style="float: right;">82 126 122 41 183 153 88 103</span></p> <p>C. Retention of ideas <span style="float: right;">22 30 12 20 139 105</span></p> <p>D. Launderer <span style="float: right;">25 57 120 80 117 187 168 151 84</span></p> <p>E. Make an effort <span style="float: right;">186 43 24 119 6 135 27</span></p> <p>F. Water from the clouds <span style="float: right;">69 53 132 145 146 50 130 143</span></p> <p>G. Pagan idol <span style="float: right;">40 68 94 125 150 166 160</span></p> <p>H. Exemption from punishment <span style="float: right;">83 45 98 78 51 47 74 184</span></p> <p>I. Seized tightly <span style="float: right;">63 164 110 171 79 131 159 152</span></p> <p>J. Buckwheat <span style="float: right;">121 173 76 42 89 90 99 118</span></p> <p>K. Thoroughfares <span style="float: right;">180 140 1 116 165 155 157 66</span></p> <p>L. One who deceives again <span style="float: right;">162 147 49 129 134 138 149 54</span></p> <p>M. Pitched tents <span style="float: right;">37 111 108 86 77 167 179 11</span></p> | <p>N. Fellow sailor <span style="float: right;">65 36 175 67 141 163 112 169</span></p> <p>O. Compound with divalent acid radical <span style="float: right;">8 106 16 93 3</span></p> <p>P. Difficult childbirth <span style="float: right;">31 107 73 35 33 72 172 23</span></p> <p>Q. _ Kleine Nachtmusik <span style="float: right;">10 29 17 13</span></p> <p>R. Origin <span style="float: right;">133 144 182 87 64 156 62 26</span></p> <p>S. Bolled molasses <span style="float: right;">154 123 85 38 170 185</span></p> <p>T. Boy's name <span style="float: right;">81 177 14 101 2 161 48</span></p> <p>U. Groups of three maniples <span style="float: right;">4 75 178 137 21 114 60</span></p> <p>V. Left to choice <span style="float: right;">100 124 142 44 5 9 181 128</span></p> <p>W. Teacher ( Heb. ) <span style="float: right;">34 71 104 7</span></p> <p>X. With little breadth <span style="float: right;">176 59 28 96 109 56 102 55</span></p> <p>Y. Pouring out <span style="float: right;">97 32 19 61 58 39 148 46</span></p> <p>Z. Container of torn cloth <span style="float: right;">136 92 174 127 113 18</span></p> |
|--|--|

# AN OVERVIEW OF DATA BASE MANAGEMENT

by Bill Hole

## Introduction

Almost everyone has heard a computer salesperson say, "You can keep home records on it; even recipes and Christmas card lists." Well, I have yet to meet a computer owner who keeps his or her recipes on a computer, but storing and managing information is certainly one of the most important uses for any computer. It can also be quite fascinating. As we analyze our data management needs, we can gain a deeper understanding of the kinds of relationships that exist between the things we are describing in the data base. Those aspects of our life or our business can begin to make a little more sense.

This article will give some insight into the different ways data can be stored on a computer. We'll start with simple filing systems such as mailing list programs. Then we'll look at the three major data base management models: the hierarchical, network and relational models. Our major emphasis will be on the relational model, which is by far the most popular on microcomputers.

## "Mailing List" Type Programs

The simplest filing programs use a consistent format for organizing the data on the disk. This format is written into the program itself and can only be revised by a programmer with access to the source code. An example of this type of program would be a simple mailing list program like Habadex that allows you to enter your data into specific predefined fields like Name, Street Address, City, State and Zip Code.

If you really need to add a field, such as Birthdate, to such a data base, you will have to rewrite the program so that it can handle the extra field, and you'll have to write another program to convert your old stored data to the new format.

## Simple File Managers

More sophisticated programs have built in utilities that allow you to define your own file structures. You can set up a mailing list, or an inventory, or even the mythical (I suspect) recipe file. These programs frequently will allow you to change the structure of your data base after it is created and will automatically convert your data to the new format. Examples of this type of program include PFS File&Report, Microsoft File, and DB Master.

Programs like this are much easier to use and are far more practical than programs using a fixed format for their data. However, they are still limited in that they allow each data base to have only one file structure. This lack of flexibility leads to all kinds of problems: information can easily become redundant and inconsistent. For example, you may have an inventory file in which you want to store part numbers, the supplier of each part, and the address of the supplier. If you have only one file with one record type, you are forced to store the address of the supplier with every part number.

This obviously leads to duplication, and can lead to inconsistencies. What if you mistype a supplier's zip code in

one record and then search the data base for a specific part supplied by any supplier in that zip code? You won't retrieve that record and may lose money ordering from a more distant supplier.

## The Data Base Management System

The solution to these problems is the extravagantly named data base management system, or DBMS. A DBMS does everything that a more simple filing system does but is much more flexible. A DBMS typically has a number of utilities that add to its power. It may include a built-in language for retrieving or manipulating data, and it usually allows you to design your own interfaces to the program. That is, you can have the program prompt you for specific information, or you can have information printed out in formats designed for your specific needs.

The most important advantage of a DBMS is its ability to combine several different kinds of files (with differing record formats) into one data base. This feature allows you to avoid the problems of redundancy and inconsistency that plague lesser systems. Let's say you have an inventory data base and want to store part numbers, suppliers and supplier addresses. With a DBMS, we can put the part numbers in one file and the supplier name and address in another. Add a link of some sort that connects the parts records to corresponding supplier records, and you have a non-redundant, consistent data base.

You will only have to store the address of each supplier once, saving considerable storage space. In addition, because there will be only one record for each supplier, you won't have to worry about mistakes proliferating through the data base.

There are three major types of DBMS, each classified according to the way it relates multiple files and record types in a data base. Each is discussed below.

## Hierarchical DBMS

The oldest type is called the hierarchical DBMS. It looks at different files as being related like branches in a tree and like trees in a forest. Each file is a branch coming out of some other branch. A branch can have several branches coming out of it but can only come out of one branch itself. It is easiest to think of a hierarchical data base as being like the family trees of several families, that only trace one sex through the generations. If we are tracing females, each person can have only one mother, but many daughters. Each file in a hierarchical DBMS is seen as one generation in one of the family trees.

For example, an inventory data base showing parts and suppliers might consist of one tree, with parts as the parent record type and with supplier name, address and cost in a child record type.

Parts:

P1 Framus Gear

Suppliers:

S1 ABC Corp. 1.98

S2 XYZ, Inc. 2.49

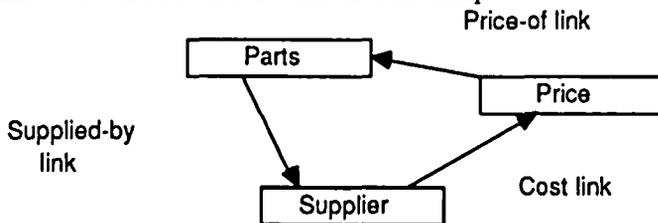
contd.

This type of data base still has limitations. Because it allows each entity to have only one parent, if a record type is most logically represented as belonging to two different trees in the forest it must be entered twice. Thus redundancy again rears its ugly head. There are ways around this, such as substituting a pointer record leading to another tree where the record is actually stored, but none is very satisfactory.

Also, how do you decide which record type should be the parent and which the child? In the inventory data base, it could be either way, and because there will be multiple suppliers for each part and because each supplier carries numerous parts, you will end up with a lot of duplication.

### Network DBMS

The second type of DBMS is structured as a network. While the hierarchical DBMS allows only mother-daughter relationships, the network DBMS allows many different kinds of relationships. Practically speaking, this means that the files are not limited to one "parent"; they can be related to many different files in a vast network of relationships.



This approach to data base management is more powerful than the hierarchical approach but is difficult to use. A person using the data base has to know its entire structure and must be able to "navigate" through the different files to find the data he or she needs.

### Relational DBMS

We've all heard the term "relational" banded about quite a lot in computer ads and magazine articles. This term has been overused to the extent that it verges on becoming a meaningless buzzword. But it really represents a very powerful and intuitive approach to data base management.

The relational model is the most recent attempt to solve the problems involved in organizing large amounts of data. In this approach, each file is seen as a table, called a relation. Each of the data elements to be stored becomes a column in the table.

That is, if we laid out an address relation with data elements Name, Street, City and Zip, these would be arranged across the top of the table. The rows in the table would be the actual data. For instance, the first row might put Jones in the Name column, 1234 Lois Lane in the Street column, Podunk in the City column, and Illinois in the State column. Just to confuse everybody, each of these rows is called a "tuple", a mathematical term that reflects the relational model's roots in set theory.

Different files or relations can be combined to retrieve related records. This is done by putting fields (columns) in each relation that are shared between relations.

For instance, in the previous example of a parts and suppliers data base, you could have one relation, Parts, that contains the fields Part# and Part\_Name. Another relation, Supplier, would have S# (supplier number), Supp\_Name, Address, City, State, and Zip. A third relation, Part\_Supplier,

which indicates which suppliers carry which parts, would have S#, Part# and Cost.

Parts:

Part#	Part_Name
P1	Framus Gear
P2	Twiddle Knob

Supplier:

S#	Supp_Name	Address	City	State	Zip
S1	ABC Corp.	45 South St.	Vienna	VA	22180
S2	XYZ, Inc.	24 Main St.	Moodus	CT	12345

Part\_Supplier

Part#	S#	Cost
P1	S1	1.98
P2	S1	2.49
P1	S2	12.50

To retrieve all the parts supplied by the ABC Corp., the DBMS performs what is known as a "join." The relations Supplier and Part\_Supplier are combined by way of their common field, S#, to find the Part# of each part carried. Then Part\_Supplier is joined to Parts using the common field Part# to retrieve the part name.

As you can see, in the relational DBMS the linkages between files are implied by the sharing of identical fields. This is in contrast to the explicit links hard-wired into the schema of a network data base, and is the basis of the extreme flexibility of the relational model. In a network or hierarchical system, the addition of a new file entails the addition of new links to the other files; the entire data base must be redesigned and rebuilt. Adding a file to a relational system usually means simply including whatever fields are needed to join to existing files. The relational DBMS has its problems, the most important one being its speed. Combining tables takes a lot of processing time, and lots of data has to be brought in from the disk storage. However, it minimizes redundancy and inconsistency; and it is a relatively easy model to understand. It is easier to think of a data base as a set of tables than as a bunch of files tied together through various links or as a tree. We're used to working with tables already.

Because of its flexibility and ease of use, the relational DBMS is rapidly becoming the most popular type of DBMS. It has even become popular on microcomputers in the form of programs such as DBASE III, Omnis 3, Helix, and rBase 5000. The hierarchical DBMS and the network DBMS have been less popular on micros. In fact, I know of no true hierarchical DBMS for personal computers and of only one network.

The reason for the popularity of the relational DBMS on micros is probably two-fold. The first reason is the increased emphasis in the microcomputer industry on ease of use. Organizations using big mainframe computers can usually afford to keep a few programmers around to operate their data bases. But the small businessman or the individual with a

contd.

microcomputer is going to have to operate his software himself. The relational model makes this possible.

The second reason is that the relational model became popular on mainframe computers at the same time the personal computer was growing up. The availability of the relational DBMS concept at the dawn of microcomputing was enough to discourage many experiments in putting the less desirable network or hierarchical DBMS onto the personal computer. Thus, while many large organizations are stuck with the earlier data base models because they started with them years ago on their mainframes, personal computer users can start fresh with a new model.

#### Apple DBMS Software

Not everyone with a computer and a need to manage data on it needs a fancy relational DBMS. Apple owners are fortunate because a full range of file systems and data base management systems is available to them. If all you need is a simple mailing list program, dozens are available, including some in the public domain.

More powerful data base programs that allow you to specify your own record structures are available as well. These range from Super File Cabinet in the WAP library to programs like PFS:File and Microsoft File. If you really need a full featured relational DBMS, you can run DBASE II on your CP/M-equipped Apple II, or Omnis 3, Helix, MacLion, or Interface on your Mac.

A caveat: most of the systems being advertised as "fully relational" fall far short of the standards established by experts like E. F. Codd, the developer of the relational DBMS. These standards describe criteria for combining relations, the completeness of the DBMS query language, and other factors. Strictly speaking, the only micro-based DBMSs that meet all of these criteria are some powerful and expensive UNIX programs. Few people or organizations really need the power of a full-fledged relational DBMS. Many of the systems currently available for micros provide all the power that anyone will ever need in practical applications. But look carefully before you buy. The "fully relational" label may hide a program that is weaker than the simplest filing program.

#### Conclusion

This has been a rather general introduction to data bases and data base management. If you think you need some kind of data base software but don't know what kind, start by deciding exactly what your needs are. Then read reviews of available software in the computer magazines. Ask your fellow computer owners for their advice and opinions. If you choose your software carefully, you will find that your Apple has taken a quantum leap in its value to you. Your cooking may not improve with your computerized recipe files, but computerizing your mailing lists, inventories, and other types of files for your home or business may leave you more time to enjoy your meals.

#### Sidebar: Data Base Terminology

Like any technical field, the data base field has its own specialized jargon. Here are a few common terms and their definitions:

**Field:** The smallest unit of data. Corresponds to one logical entity like Last Name, Social Security Number, or Zip Code. Also called an "attribute" or a "column" when referring

to relational DBMSs.

**Record:** A grouping of fields into a logical whole. For instance, the fields Last Name, First Name, and SSN might make up a single record. Each record corresponds to a single instance of the type of object described; i.e. Jones, Joe, 234-56-7890. Also called a "tuple" or a "row" when referring to relational DBMSs.

**File:** A number of records with identical formats grouped together. That is, a collection of records like the one described above, each of which records personal data on a different individual, might make up a file called "Personal Data". Also called a "table" or a "relation" when referring to relational DBMSs.

**Data Base:** A collection of one or more files linked together in order to describe complex relationships between different types of data and to minimize uncontrolled redundancy and inconsistencies.

**Data Base Management System:** A program used to set up data bases, make links between the individual files, store data into those files, and retrieve data from them.

*Bill Hole is a programmer/analyst and data base specialist with Micro Dynamics, Ltd., a D.C.-based consulting firm specializing in Macintosh software development and training.* ☺

**WORK•N•PRINT- Good Intentions, Poor Delivery by Martin Milrod**

Assimilation, Inc. is a fine software firm from Los Gatos, California that has produced a variety of helpful Mac software. In one of their most recent releases, Work•n•Print, they address a problem known to all MACcr's: tying up the Mac during printing. This program "installs" a desk accessory that permits the printing, now or at a later time, of a file while you work on another file.

While a true background printer spooler or similar device would be of great interest, the Mac is simply not capable of true multi-tasking. What we have in this program, and some others like it, is an attempt to create a "print file" version of a document and to process that version of a file as a separate type of Mac activity.

But look at Work•n•Print's problems and limitations in trying to do this:

- It does not work with Switcher, the Mac Plus or any printer except the Imagewriter.
- On 128K Macs "you can not continue to work on your Macintosh while you are printing, but you can print files unattended." (Couldn't we always do so?)
- Works with PFS File & Report only "if you copy the print file to a MacWrite disk and do the printing operation from the MacWrite disk."
- "Do not use draft mode of printing with Work•n•Print."
- "[I]t is not possible to cross between applications with a standard Macintosh," i.e., you cannot quit one application and start another while Work•n•Printing.

contd. on pg 53

# REQUIESCAT IN PACE? NO, RASTER IMAGE PROCESSOR

by Martin Kuhn

When one speaker began using terms like "RIP" without defining them at the March meeting of the Desktop Publishing Special Interest Group, no one noticeably flinched. But when the group was asked about topics of interest for future meetings of this new SIG, a number of participants expressed a wish to know more about layout and design—the creative side of using type. Thus the technology seems well in hand (for many, if not all), and the attention of some, at least, can turn to the infinite variety of ways to spoil paper.

I was reminded of two things—the first is a concept I ran across years ago that seems more and more relevant, called the "Technological Imperative." The second is an ad running in the current issue of *C&Lc*, a publication distributed free to typographers and graphic artists by the International Typeface Corporation. *C&Lc* is a company publication so good that other type companies advertise in it.

The Technological Imperative says that "anything that can be done, must be done." I don't know why this should be so, but it seems to be. On the nonlethal level, it encourages us, when we are suddenly given access to 19 different typefaces, to try to use all 19 on the same page—and then add graphics and a fancy border.

Nothing personal. It's going to give us, so help me, a flood of business letters done in Times Roman, a newspaper text type designed for columns 2 inches wide, or even narrower. One I'm looking at now has lines 7 inches long, set "solid", which means no extra space between the lines. Such space is called leading, named for the metal that was once used. Leading makes it easier for the eye to track each line and is especially needed between longer lines.

Not only does this Times Roman business letter look like a printed form letter, which risks a file-before-reading response, with typeset that wide it's too hard to read. Courier, a typewriter type, would have been a better choice. (Yes, I know they wanted to show off. But I am talking about at least minimal restraint, or—even better—giving some thought as to how this new capability could be displayed more appropriately.)

What's a good line length for Times Roman or any text type? An easy rule of thumb, long followed by typographers and verified by research done in the 1930s and '40s on eye movements during reading, calls for column widths of about "an alphabet and a half." Call it 40 characters. For 12 point Times Roman, this works out to column widths of about 2-5/8 inches. This tracks with the type's original design purpose. (The London Times, for which the Times typeface family was designed, used text type smaller than 12 points, in narrower columns). The alphabet-and-a-half rule needn't be followed out the window; two 3-inch columns on an 8-1/2 inch wide page works fine, as do three 2-inch columns. But 7 inches?

"Dingbats! We need more dingbats!"

In their two-page ad in *C&Lc*, Bethold-Alphatype, makers

of professional typesetting equipment, offers "suggestions" (in commandment form) on the use of type, quoting typographer and designer John Gibson. Two of these speak to line length and the need for leading:

Thou shouldst guide the eye, and allow it space.

The eye moves back and forth more or less like an old typewriter carriage. It needs room between the lines to find its way back.

Thou shouldst not make thy lines too long, or too short, either.

The eye is worn out by lines that go on and on

But too

short

lines

are ir-

ritat-

ing.

Far and away the most important of Gibson's commandments is his first:

Thou shouldst remember that words are meant to be read.

Words are precious tools, capable of changing a stubborn mind or winning a reluctant heart. They are not merely a design element, or a good-looking block of gray.

And another that hits all too many art directors:

Thou shouldst not admire thy work from a distance.

Most communication is meant to be seen from less than two feet (the length of the human arm). Don't judge it by hanging it on a wall, unless it's meant to wind up there.

My own feeling, after looking around at what's being done these days, is that by simply following such common-sense rules you can be a better designer than you can hire. Art directors who like to read are not easy to find. They tend to be visual people, and that's why they are into art. But after all, you are now your own typesetter (and typographer). Why shouldn't you be your own designer, too?

Grab a few basic rules, such as we have here, and remember that creativity = freedom + discipline. In the beginning, with enthusiasm running high, you'll have to work to hold it down a little.

By putting the Zapf Dingbat font among the added typefaces in the new LaserWriter Plus, the folks at Apple showed they know what's going to look interesting to this emerging market. But your work will stand out if you adopt the attitude that Zapf dingbats are 800 calories each, and that you have to eat every one you use. Watch for them, overused, an instant cliché, on everyone else's stuff. ☞

# EXCEL'ing WITH YOUR MAC

by David Morganstein

This month's hot-line phone call was an easy one! Bob had arranged data in rows which he wanted to display in columns. In mathematical terms, he wanted to "transpose" an array, a rectangular section of the spreadsheet, by flipping the data along a diagonal from upper left to lower right. Excel has a "transpose" command for just that purpose. To use it, select a rectangular area away from the data you wish to rearrange. In the example below, you see four rows of three column data. To flip this into four columns of three rows, first select a 3 by 4 area by clicking and dragging. Next enter the transpose command in the upper left corner of the unfilled area, using something like:

=TRANSPOSE(A1:C4)

Do not hit "Enter" yet! Hold down the command (some call it the feature) key as you punch the Enter key. Using the command-enter combination tells Excel that you are giving an array function.

Arrays. Arrays and array functions are extremely powerful, resulting in operations which apply to a large number of cells in a one or two-dimensional pattern. The screen shot below shows you the result of the Transpose operation. Note that the formula which defines cell A6 appears at the top of the screen enclosed in braces {}. You do not type these braces. Excel displays them to remind you that the cell is defined by an array formula.

File Edit Formula Format Data Options Macro

A6 {=TRANSPOSE(A1:C4)}

	A	B	C	D
1	Fred Jones	1234 5th St.	Washington, DC	
2	Sally Smith	5678 99th St	Rockville, MD	← Original
3	Bob Brown	2233 Park Ave.	New York, NY	
4	Kathy White	13424 York Rd.	Bethlehem, PA	
5				
6	Fred Jones	Sally Smith	Bob Brown	Kathy White
7	1234 5th St.	5678 99th St	2233 Park Ave.	13424 York Rd.
8	Washington, DC	Rockville, MD	New York, NY	Bethlehem, PA
9				
10		← Transposed		
11				
12				
13				
14				
15				
16				

Array operations are extremely useful. A peek at the Excel manual only hints at the many possibilities. For example, array functions can be used to obtain the "dot product" of two vectors, familiar to many as the sum of cross-products. A common application would be to multiply a column of prices by a column of quantities and add up the products to get the total dollars. The "traditional" way of doing this would be to form a third column defined as the product of the first two columns. You would enter the

product formula in the top most cell of the third column, select the remaining cells below and use a Fill Down command to replicate the multiplication operation down the column. Lastly, you would use the sum command to obtain the column total. Using arrays, you can do the entire operation with a single command! Look at the following application:

File Edit Formula Format Data Options Macro Window

B11 {=SUM(Price\*Quantity)}

	A	B	C	D	E	F
1	Price	Quantity	Product			
2	\$1.10	45	\$49.50			
3	\$10.25	65	\$666.25			
4	\$2.50	44	\$110.00			
5	\$4.75	34	\$161.50			
6	\$6.00	23	\$138.00			
7	\$3.33	12	\$39.96			
8	\$12.75	11	\$140.25			
9	\$1.10	5	\$5.50			
10						
11		\$1,310.96	\$1,310.96	←=SUM(C2:C9)		
12						
13						
14						
15						
16						
17						
18						
19						

In this example, the cell C11 is obtained the "long" way using column C to obtain the Product of all the entries in the first two columns. Finally, the Sum is taken. Cell B11, as you can see at the top of the screen, was obtained with an Array formula. To help remember what the formulas mean, the first and second columns were named "Price" and "Quantity". Column C is defined as =Price\*Quantity by entering this in Cell C2 and then shift-clicking on Cell C9 and giving a "fill down" command. Lastly, C11 is obtained with =SUM(C2:C9). Cell B11, on the other hand, is defined in one step by the following Array formula:

=SUM(Price\*Quantity)

As before, the Command key is held down as the Enter key is punched. Excel has added the braces shown at the top of the screen shot. Not only does the use of the array formula simplify the amount of work needed, it also reduces the number of wasted cells used to store intermediate results. While you might want to see the third column in this particular example, often you will not need to waste precious space on such intervening numbers.

The last example on the use of arrays stems from the need to link multiple spreadsheets into a common, perhaps aggregate, sheet. Let's say you are costing out a project by tasks. Each task has a certain amount of permanent labor, temporary labor, other costs, overhead and fee. Further, let's say that you have created a single spreadsheet for each task and are ready to aggregate them into a single sheet.

Each Task might look something like this:

contd.

File Edit Formula Format Data Options Macro Window					
D9	=D7*D8				
Task1					
	A	B	C	D	E
2		Rate	Hours	Dollars	
3	Permanent Labor	\$10.00	1200	\$12,000	
4	Temporary Labor	\$7.00	2000	\$14,000	
5	Other Costs			\$7,500	
6	Overhead			\$13,200	
7	Subtotal			\$46,700	
8	Fee			\$5,604	
9	Total			\$52,304	

The aggregate sheet is to pick up all of the column D's, establishing a link which automatically changes the aggregate if any Task sheet is modified. In the aggregate sheet below you see several things. Cells B3:B8 were entered as "Task1!Dollars" using the Command-Enter keys to indicate an array. (The name Dollars had been given to the column D entries in each of the Task worksheets.) The name "Task1!Dollars" means the cells named "Dollars" in the spreadsheet named "Task1". At the top of the screen you see the braces around the name Task1!Dollars. Cells C3:C8 and D3:D8 are defined in the same way using Task2 and Task3. As either Hours or Rates are changed in any of the Task sheets, the Dollars column is updated and carried forward onto the Aggregate sheet.

File Edit Formula Format Data Options Macro Window					
B3	={Task1!Dollars}				
Aggregate					
	A	B	C	D	E
2		Task1	Task2	Task3	Combined
3	Permanent Labor	\$12,000	\$25,000	\$5,000	\$42,000
4	Temporary Labor	\$14,000	\$35,000	\$5,600	\$54,600
5	Other Costs	\$7,500	\$9,000	\$4,500	\$21,000
6	Overhead	\$13,200	\$27,500	\$5,500	\$46,200
7	Fee	\$46,700	\$96,500	\$20,600	\$163,800
8	Total	\$5,604	\$11,580	\$2,472	\$19,656
9					\$347,256

**Books.** There are about a half dozen books on Excel available, including several that are brand new. While some may be worth considering others are of much less value.

**Business Problem Solving with Excel**, Molloy, Fletcher & Curtin, Osborne McGraw-Hill. I have not read this one. It contains spreadsheet solutions to common business problems.

**Excel in Business**, by Douglas Cobb, Microsoft Press. About the most comprehensive and the thickest, it is published by the company who markets the product. In addition to well-written introductory material and in-depth coverage of spreadsheet, graphics and database uses, it includes

150 pages about macros.

**Excel Business Solutions for the Macintosh**, Richard Loggins, Addison-Wesley. A good introduction to function macros. Unfortunately, about half of the book is spent describing a series of routines which solve a very narrow and specific problem.

**The Complete Book of Excel Macros** by Louis Benjamin & Don Nicholas, Osborne McGraw-Hill. The book is a misnomer. Weighing in at a meager 120 pages, it is by no means complete. Half of the printed content is screen shots of mostly specialized macros. An example: a five-line macro to sort a database they have defined. You can do this just as easily without a macro. You can learn something from studying them but they could have been more interesting.

**Hands-On Excel** by Danny Goodman, Scott Foresman & Co. Filled with numerous short-cuts not listed in the original manuals.

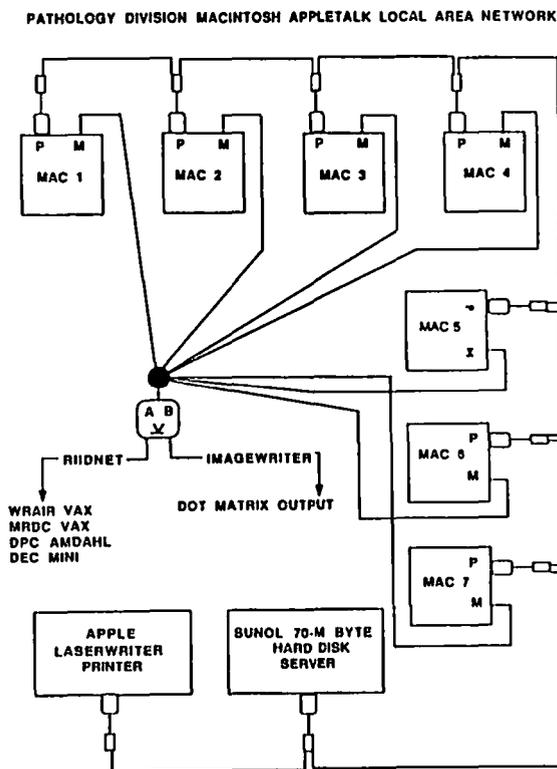
**Making Your Macintosh Excel**, Bill O'Brien, Scott Foresman & Co. I have not read this one.

**Mastering Excel**, Carl Townsend, Sybex. One of the first ones out. While I have not read this one, Sybex has a bad reputation in my eyes. I have found missing commands in both their Jazz and 6502 texts.

**Running Your Business with Excel**, Amanda Hixson, Osborne McGraw-Hill. I have no experience with this one.

**Using Excel**, Mary V. Campbell, Que. A recent release.

Mac Communication contd. from pg 62



# MACINTOSH DISK SPEED COMPARISONS

by Steve Brecher

(Ed. note: Steve Brecher is the author of a program called "Disk Bench" that tests the speed of both hard and floppy Macintosh disk drives. He has graciously given permission for WAP to distribute both his program and the source code through our public-domain software library. For the technically inclined, his description of DiskBench follows. The table at the end of his article, which should be of interest to everyone, shows the results of tests run on various Macintosh hard and floppy disks using his program. Mr. Brecher has candidly stated that he wrote the software for the MicahDrive 20 AT, which "won" the test using DiskBench, but in the opinion of many who have used DiskBench and the Micah hard disk, the results shown in the table below represent as fair a test of drive speed as is available anywhere. Note that in actual use, drive speed will be slower.)

The DiskBench application does low-level performance testing on hard disks, providing some indication of the relative speed of the disk hardware and driver software combination among competing products. DiskBench runs two tests. The read data transfer test consists of 100 reads of 32KB from the beginning of the volume. The write data transfer test consists of 100 writes of 32KB to the beginning of the volume. The access time test consists of 40 repetitions of: read 512 bytes from an offset of 1MB into the volume; read 512 bytes from the beginning of the volume.

Multiple reports on the same kind of disk from multiple testers are welcome, so that anomalies can be eliminated. Anomalies might include media defects in the test area requir-

ing controller re-tries, data correction, or revectoring to an alternate area. Results on only one specimen should be regarded as provisional. Vendors may make performance improvements from time to time via software/hardware improvements. Other events can corrupt the validity of the data: note that moving the mouse during the test will degrade the results!

64K ROM/Sony floppy note: the Sony driver disables interrupts for relatively long periods (more than 1/60th second) during reads of the size requested by DiskBench, and thus interferes with the timing mechanism used by DiskBench (the system variable "Ticks") so that the reported time is much less than the actual time. Hence the data transfer (read) times for some 400K floppies are omitted ("N/A") below. Since the Access Time test requires more than one megabyte, DiskBench does not perform it on any floppies.

"800K floppy drive, SS, Apple" in the table below refers to a test of a single-sided disk in one of Apple's new 800K drives.

HyperDrive note: Run DiskBench from the Startup drawer. For the access time to be valid, Startup must be more than one megabyte in size, and it must be unfragmented—it must have reached more than one megabyte in size (possibly via restore to a newly-initialized HyperDrive) before any other drawers were created. Do not run DiskBench with the HyperDrive cache turned on.

Current collection of results from the DiskBench program:

	Data transfer		Access time	Tester
	----- time ----- Reads	----- time ----- Writes		
400K floppy drive, Apple	8756	11816	N/A	S. Brecher
400K floppy drive, Apple	N/A	12392	N/A	G. Frascadore
400K floppy drive, Apple	8796	11629	N/A	C. Nicolais
400K floppy drive, Apple	N/A	12351	N/A	R. Perez
800K floppy drive, SS, Apple	8758	11407	N/A	S. Brecher
800K floppy drive, SS, Apple	6842	11462	N/A	R. Detchells
800K floppy drive, SS, Apple	7544	11550	N/A	C. Nicolais
800K floppy drive, DS, Apple	7701	10874	N/A	S. Brecher
800K floppy drive, DS, Apple	7523	10913	N/A	N. Fong
800K floppy drive, DS, Apple	7737	10897	N/A	C. Nicolais
AST 4000, AST Research	1495	1533	159	KATZ, Mousehole BBS
AST 4000, AST Research	1495	1549	160	KATZ (second drive)
AST 4000, AST Research	1495	1537	169	KATZ (third drive)
Bernoulli Box, 5MB, Iomega	4174	24437	66	JCOM, Mousehole BBS
DataFrame 20, SuperMac	1319	2233	488	J. Bean
DataFrame 20, SuperMac	1344	2233	487	S. Brecher
DataFrame 20, SuperMac	1319	2233	446	L. Custer
Hard Disk 20, Apple	7029	7938	368	M. Chally
Hard Disk 20, Apple	7074	7871	368	N. Fong
Hard Disk 20, Apple	7054	7944	370	KATZ, Mousehole BBS
Hard Disk 20, Apple	9883(?)	6948	368	R. Wiggins
HD-20, MDIdeas	1726	3260	446	S. Brecher
HD-30, MDIdeas	1749	3576	406	S. Brecher

contd. on pg 71

# MacRECORDER II: A Mini-Review

by Jonathan E. Hardis

In the April Q&A column, I mentioned MacRecorder II, a sound digitizer kit for the Macintosh. It allows sound to be captured, fed into the Mac through the modem port, and to be recorded in RAM, edited, and then replayed through the Mac's speaker. MacRecorder is a "Public Domain Hardware Project" from BMUG, Inc., formerly known as the Berkeley Macintosh Users Group. (The name change has to do with IRS policy, not in their becoming part of the "establishment".) I've now built one, and I have a few initial impressions.

MacRecorder comes as a bag of electronic parts, a printed circuit board, and a software disk. You get everything from the microphone to the power adapter and cables, except for the mounting box which you are expected to design for yourself. While no extraordinary skill is required to assemble the circuit, it is most definitely not a project for beginners. The instructions are not "Heathkit Standard", the figures take a bit of interpretation, and the component layout allows some easy solder bridges to form.

Also, the instructions encourage you to experiment with the design by tinkering in certain ways, and by adding additional, proposed features. It is not meant to be a "final", static design. While a background in electronics isn't required, your freedom to play with the design increases as you know more. In other words, if you don't know what a "low-pass, two-pole Chebyshev filter" is, you might want to leave that section of the circuit alone.

Two programs are provided on the disk. One turns the Mac into a real-time oscilloscope, for frequencies under 5 KHz. The other is the recorder. With the recorder, you can remember in RAM (and later, to disk) up to about 20 seconds of sound on a 512K Mac. On the screen, you can see the

waveform, and the program allows for cut and paste editing. You can play back selections of the waveform, in order to tell which section is which. For example, if you record the sentence "I am not a crook", it is a simple matter to cut out the word "not". No editing to the amplitude of the waveform is allowed. Additionally, you can change the pitch of the playback (a feature of the Mac's sound driver), and flip sections of the waveform in order to play it backwards. (No, Paul is not dead.)

All in all, the recorder program does not have many features to hold a pure consumer's interest over an extended period of time. It reminds me of other good science demonstrations. While there is a certain excitement in actually seeing the thing work, and in seeing graphically in freeze-frame the differences between different words and sounds, anyone who wants to get a lot out of the device should expect to eventually write his or her own programs to manipulate, display, and utilize the sound data. (The MacForth source code for the current recorder program is available.) In other words, this kit is a good starting point for a competent, inquisitive experimenter who wants to tinker with both hardware and software, and to study the nature of speech or sound. That's what the students at Berkeley who designed the thing are doing. You can either wait for the fruits of their efforts on later BMUG public domain disks, or branch off in your own directions. Who knows, with a lot of hard work, someone might write an adventure game that recognizes voice commands, and speaks back to the player!

MacRecorder II, \$50 kit, \$95 assembled and tested, from Berkeley Macintosh Users Group (BMUG, Inc.), 1442A Walnut Street #62, Berkeley, CA 94709. ☺

## Mac Disk Speed Comp. contd. from pg 70

	Data transfer		Access time	Tester
	----- time -----	----- time -----		
	Reads	Writes		
HyperDrive 10, obsolete model	1591	1616	401	S. Brecher
HyperDrive 10, GCC (V2R1)	8000(?)	7982(?)	648(?)	H. Conover
HyperDrive 10, GCC (V2R1)	7985(?)	6892(?)	485	R. Perez
HyperDrive 20, GCC (V2R1)	1703	1506	640(?)	R. Ford
HyperDrive 20, GCC	1704	1506	241(?)	W. Luckie
MacBottom 10, v2.1, PCPC	4159	6897	686	M. O'Connor
MacBottom 10, v2.6, PCPC	4159	6897	608	S. Aronian
MacBottom 20, v2.1, PCPC	4110	6817	601	L. Becker
MacDrive, Tecmar	6102	6704	440	L. Custer
MacDrive, 10MB Fixed, Tecmar	6017	6719	401	C. Nicolais
MagNet 20, Mirror Tech.	14539	14538	322	R. Detchells
MicahDrive 20 AT, Micah	508	507	488	S. Brecher
OverDrive 60/16MHz CPU, Levco	1102	1102	121	S. Brecher
Quark QC-20	6476	6488	82(?)	R. Thacker
QuickDrive external RAMdisk	2411	2479	52	R. Bates
QuickDrive external RAMdisk	2466	2535	33	J. Eugenides
RamStart RAMdisk/Beck-Tech RAM	186	186	N/A	G. Frascadore
Warp 20, Warp Nine Engin'ng	14537	14537	321	G. Frascadore

# A DEVELOPER'S VIEW

by John Bennison

*Want a fast 20 Meg Disk for your Mac Plus?  
Look at the DataFrame 20 from SuperMac  
Technology.*

The introduction of the Mac Plus with its Small Computer System Interface (SCSI) has had the long desired effect of opening up the market for fast inexpensive hard disks for the Mac. There are a number of SCSI drives now on the market at reasonable prices and the competition is just starting to heat up.

This review will take a close look at the DataFrame 20 from SuperMac Technology, a good representative of the new generation of hard disks for the Mac Plus.

## Feature Summary

The DataFrame is an external 20 Meg disk drive that plugs in through the SCSI port found only on the Mac Plus. It offers extremely high speed and is very easy to use. Its specs include: 20 Meg. formatted capacity. SCSI interface. 80K Bytes/Second typical throughput. Rugged construction. 1-year full warranty. Relatively quiet (no fan). No hardware or software mods needed. Price \$1295, available mail order for about \$900.

## General Description:

The DataFrame 20 stands 8 inches high, 3 inches wide and about as deep as the Mac (10 inches). It matches the Mac pretty well for color and styling, and has two colored LEDs that indicate what the drive is doing. A green LED shows that the drive is on and the disk has "spun up" to its operating speed. A red LED lights when the disk is selected on the SCSI bus. (In this case, a red light does not mean there is a problem.)

It's fast—faster than previous internal or external drives, and faster than Apple's own HD 20. SuperMac Technology provides an example; they refer to loading about a floppy's worth of data (377K) from the DataFrame in less than 5 seconds. Whoosh. The SuperMac people seem oddly low-key about it, explaining carefully in their literature that operations which are processor intensive won't show the same performance improvement. Not surprising since they're selling a disk - not a processor upgrade.

The drive has no fan, so it relies on convection for cooling. The power regulator card, which is the component that generates the most heat, is at the top of the case. Warm air wafts out through vents at the top and cool air is drawn in through vents at the bottom. Voila! a chimney effect which provides effective cooling. The top of my DataFrame stays cooler than the top of my Mac Plus (which uses the same principle to cool the analog board inside the left side of the Mac.)

## Software

The DataFrame comes from the manufacturer formatted with a System Folder on it. You simply plug in the drive and turn it on, then turn on the Mac. The Mac will boot from the DataFrame with no further ado. No floppy is required. The system that came on the disk included version 5.1 of the Finder. If you buy one and receive that system, I suggest you replace it immediately with Finder 5.2 and System 3.1.1 because some important bugs were fixed.

Although the system requires no floppy to boot, a floppy

is provided which contains a simple format utility. I needed to use it because I experienced a write error while loading up the disk for the first time. Reformatting cleared it up and it hasn't come back. Also on that floppy are a few text documents which cover the fine points of configuring and using the DataFrame. There were no surprises or serious restrictions.

The DataFrame, like any large disk volume, is best used with the Hierarchical File System (HFS) that is standard in the new ROMs that come with the Mac Plus. Organizing files on the disk is simply a matter of nesting files and folders within folders. (There were quite a number of programs which didn't run smoothly under HFS at first, but that situation is already much improved and getting better all the time. It's not specific to this product.)

Software for backing up data on the DataFrame may be offered as an upgrade at a future time. For now, view your files by Date (instead of by Icon) and copy just the files that have been modified since your last backup.

## Hardware

The DataFrame appears to be a very well designed device. In addition to its simple cooling scheme with no moving parts (except air!) it uses a very rugged Micro Science 5 1/4 inch drive and a new SMS/OMTI controller card. The controller uses custom VLSI ICs in surface mount chips, the board is very clean and wouldn't exceed a 3 1/2 inch drive's footprint. The 32 W power card is also clean and small. These 2 cards and the disk itself are mounted on an aluminum frame in a painted metal case with 2 LEDs, an on/off switch, and cable connectors.

The DataFrame has an ordinary power cable and a heavy duty SCSI cable with screw-on strain relief at the Mac end, and clip-on strain relief at the other end. That's all there is to it.

There are two SCSI connectors because SCSI devices can be daisy-chained together. You can have up to 8 SCSI devices online (8 DataFrames would total 160 Meg!) One thing about the SCSI port is that the Mac doesn't like to have a sleeping device out there. You can't even get the unhappy Mac icon if you turn on your Mac while the SCSI device is connected and not powered on. I think this is a result of Apple's implementation of the Mac's SCSI port.

One interesting rumor is about how rugged the disk mechanism is. It's said to be able to withstand the vibration and high G forces found in fighter planes. (Not that you'll need this unless your flight simulator game is more realistic than most.)

## Conclusion

The DataFrame is a good product. It is typical of what one hopes for from the new generation of SCSI drives—simple to use, and so fast you often forget you're accessing a disk.

*John Bennison is a Programmer/Analyst at Micro Dynamics, Ltd., a D.C.-based consulting firm specializing in Macintosh software development and training.* ☐

# BEST OF THE MAC ITEMS FROM UBBS

by Regina Litman

## Mac Programming

### Mac+ Connectors

JOHN J. TURNER ON 03/04 TO ALL

Does anyone know of a source for the mini 8 connectors used on the Mac+ and the Imagewriter II?

TOM WARRICK ON 03/19 TO JOHN J. TURNER

Contact Jay Heller at Adaptation Electronics, 948-7440.

### "December" Supp

TIM BUEHRER ON 03/20 TO ALL

The second half of the "December" software supplement should be arriving soon for all of you who have ordered it. It contains a number of improved versions of the system software (System 3.1.1, Font/DA Mover 3.1, Imagewriter 2.2, etc.) as well as a number of additional programming tools. To create confusion, Apple is now advertising a "March" supplement. This will be out April, May, June... who knows. It can be ordered by sending \$25 to Apple at the usual address.

## Mac Hardware

### Mac+

JIM RHODES ON 03/09 TO ALL

I would really like to hear more about what people's experience has been using the Mac+. I'm surprised we haven't heard more. Maybe they don't have their modem cables yet. Maybe they don't want to talk about it. Anyone care to tell us?

BERNIE URBAN ON 03/10 TO JIM RHODES

Mine works just like a charm. I use PageMaker, Word, Draw, Write, Paint mostly, and except for some slight glitch in looking for the LaserWriter while in PageMaker and some awful-looking screen fonts and surprising changes in spacing when using Bold, both also in PageMaker, it is fine. Am also trying the HD-20 this week. Will let you know of any problems. Tried briefly to use the Dasch Ramdisk with Switcher on the +. No go.

JOHN J. TURNER ON 03/10 TO JIM RHODES

Love it ... love the much faster drives ... no software problems for the things I use, so far ... OverVue, Excel... Making modem and printer cables with those darn little plugs is frustrating, but possible (driving an SCM L-1000 daisywheel) ... the HFS is a big improvement, as are numerous little fixes to the System (like the Time saved for files now visible in the directory windows) ... also have had pretty good luck formatting ordinary disks as two-sided -- only a couple of failures out of about twenty tries ... and the keyboard is finally real, a big improvement if you enter lots of numbers ... also bravo for the cursor control keys ... a hearty endorsement.

WILLIAM I WHIDDON ON 03/07 TO ALL

I was wondering if anyone has heard about the new Finder 5.2 and the new System 3.1 that are now being shipped to Apple dealers. I heard from a software producer that these new releases take care of the bugs in 5.1 and 3.0. I have a Mac+ that we got on Feb. 4th. I also have a 512 Mac, and when I got the Mac+ I found out that the two were not compatible (of course Apple lets their loyal buyers find that out for themselves). The investment that I made in software is in trouble because of the compatibility problem. What are we

going to do with two machines that look alike, but one speaks French and the other English. I also was not able to print for a month until my dealer finally got the printer cables with the mini 8 DIN connector for the Plus. It seems that Apple built this machine without thinking about anything else. No 512 compatibility or Imagewriter I connection for awhile also. The dealers are in a tailspin trying to get cables and other parts. All I can say is watch out all you prospective Mac+ buyers, it is not a smooth road. John Van Vliet

### New Mac Sys on 512K

DOUGLAS E CANTON JR ON 03/13 TO ALL

I have been running the new Finder (5.1) and System (3.0?) which the Mac+ uses. Everything works fine, including the RAM Cache that can be activated (as well as allocate the amount of memory used by it). The reduction in disk access w/ MS Word is dramatic. Some of the other programs I use include Paint, Hayden Speller, MacTerminal 2.0, and Red Ryder. To be able to recognize an HFS initialized disk, a system file named "HD20" must also be on the "STARTUP" disk. This loads HFS into RAM where it resides until the Mac is turned off. The Mac will not boot from a disk that is initialized for HFS. However, after startup, programs will run off of HFS or MFS initialized disks (HFS if the program is designed to work/not bomb under HFS). HFS is great for anyone who really needs organization of their files. Last 4 lines message! Real quick, the RAM Cache is in the control panel. KeyCaps now displays any font chosen from within it. New Font/DA Mover is more flexible. All available from dealers.

### HFS Initialization

DOUGLAS E CANTON JR ON 03/13 TO ALL

On the 512K Mac, to initialize a disk to run under HFS, the following need to be on the startup disk: Finder 5.1; the latest System (3.0?); HD20 System file (HFS patch file). In the case of a new disk, hold down the option key and click/choose the Initialize button. Hold down the option key during the entire process. When you are prompted to name the disk, do so, then hold down the option key when you click the OK button/press return - until the drive stops running. Initializing is done. To reformat a disk, the same process is followed (holding the option key) using the Erase Disk command in the Finder. Note: on an HFS disk, everytime you create a new folder, the disk drive of the particular disk will spin as the Finder keeps track of the folders. It does the same when a folder or file is placed in a folder. Happy HFS-ing.

### New DiskInfo DA

DOUGLAS E CANTON JR ON 03/13 TO ALL

DiskInfo 1.4 works with MFS and HFS. Under HFS, it displays folders and files. Folders can be opened and files displayed. Any file selected can be renamed or deleted (HFS or MFS), which is a convenient way of doing some desktop operations without going back to the Finder. There is a "Find" command which will allow a file to be located. If a desk accessory to create new folders and delete empty folders were available, most of the reasons for having to quit to the Finder or load Finder into a Switcher window would be eliminated and more efficient memory allowed. DiskInfo has other features which are useful but to list them now will take up too much time. DiskInfo is "Shareware", available on CompuServe (and soon at the WAP Library). It takes up 13K. contd.

### 800K/Fat Mac Compatibility?

DAVID GURSKY ON 03/15 TO ALL

Does anyone out there in WAPland know if Apple's new 800K external drive will work with a lowly Fat Mac? I know that there are several third party drives that are, but there seems to be some question as to their compatibility with M+.

TOM WARRICK ON 03/17 TO DAVID GURSKY

Yes, you can use an 800K w/a 512K Mac. You need to have the Finder, System, and Hard Disk 20 files on the Startup volume, which is a bit cumbersome unless you have a hard disk. Also, the 800K drive is actually a 779K drive. I'm somewhat surprised this hasn't been brought out very much.

BOB MASSO ON 03/18 TO DAVID GURSKY

David - to get the 800K internal drive, you are required to upgrade the ROMs as well. Apple charges (or will charge) you \$300 to upgrade both at once. In fact, Apple requires you to upgrade both at once, instead of separately. Once done, you have a 512K Mac with 128K ROMs and an 800K internal drive. As yet there is no cute little acronym for this configuration. Perhaps you could call it the Mac-Minus. Anyhow, the configs currently possible AND supported by Apple are as follows:

<u>Model</u>	<u>RAM</u>	<u>ROM</u>	<u>Drive</u>	<u>Can buy?</u>	<u>Can Upgrade to?</u>
Mac-128	128	64	400	No	No
Mac-512	512	64	400	For now	Yes, parts allowing
Mac-512+	512	128	800	Not yet	Yes
Mac-Plus	1024	128	800	Yes	Yes, parts allowing

### Printers

TOM WARRICK ON 03/17 TO ALL

Apple is interested in users' ideas about future printers. For example, they are thinking about a 250 dot-per-inch dot-matrix printer. What should such a printer cost? Would you rather have that or a letter quality, formed character (formerly called "daisywheel") printer? All input will be summarized and passed on to the right person at Apple (whom I met last week, incidentally).

JOE CHELENA ON 03/17 TO TOM WARRICK

Apple needs both. The print quality of a 24-pin printer would be of great help in selling the Mac to the business market. As good as DMPs are there is no substitute for a Daisywheel printer for that most important business letter or report to the home office. Price?? Apple is not IBM; it cannot keep charging IBM-type prices. The printer should list for no more than 10% to 15% above the Epson model it is marketed against. I am not saying that Apple should give their products away, but they have to be realistic in their pricing. For, as much as I would like a Mac+, why, I have to ask, would anyone but us Apple nuts buy the Mac+ system (computer, extra drive, and printer) for close to \$3000 when one can get an IBM AT clone in the \$2500 range? This is the analyst in me talking, not the Apple nut. You should talk to me about how Jobs all but (?) killed Apple.

FRED SEELIG ON 03/17 TO TOM WARRICK

Tom, here's my 2 cents' worth: The Imagewriter II is more than adequate for office or business rough drafts, especially for letters and graphics. Final graphics: LaserWriter (final text, for that matter!). But for businesses dealing largely with text, like law offices or Beltway Bandits and their proposals and contracts, a fast, quiet Daisywheel printer would well occupy the middle ground between the Imagewriter and the

LaserWriter.

BOB MASSO ON 03/18 TO TOM WARRICK

Tom, my vote is for the super-hires dot-matrix over the formed-character one. One of the Mac's strongest points is the ease of mixing text with graphics. Hobbling it by requiring text-only, single print-wheel output for your letter quality docs seems to me to be wrong both logically and as regards to marketing. This 250 dots/inch dot-matrix—is it going to be designed as a cheaper LaserWriter replacement with both high resolution AND the ability to serve as your primary printer? Or will it be a second printer, using Imagewriter for drafts and internal usage docs, with the 250 DM reserved for low-volume usage where print quality is supreme? This decision would strongly influence the price I would be willing to go. A 250 DM designed for usage rate similar to Imagewriter usage would really fly at \$1000 range.

### Mac Software

#### Try StatWorks

TOM PIWOWAR ON 03/06 TO KEVIN NEALON

Agree with you that StatWorks is the best of the current crop of Mac stat packages. Of the ones I have sampled it does the best job of using the Mac interface, and most operations are obvious. But as stat packages go it is quite primitive. For example, I had a cross tabulation that I wanted to display using the 3D plot. There was no way to enter the data except by putting in the entire data set (which I did not have). At the least I would expect to be able to assign weights to my observations. You also cannot do histograms with nominal data. AND it is possible to clear all the data from your data set without any cautionary alert and with no UNDO. I sure hope they build on what they have to give a more flexible product.

KEITH BLAIR ON 03/06 TO TOM PIWOWAR

That's what I was afraid of. I want to be able to enter an equation and have it graphically solved.

#### MS File 1.02

MARTIN MILROD ON 03/05 TO ALL

Microsoft is releasing MS File version 1.02 which is installable on HD. Microsoft has new address and phone number: Microsoft, 16011 N.E. 36th Street, Redmond, WA 98073-9717 (206) 882-8080.

#### MacLabeler

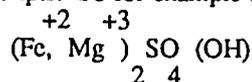
BILL HOLE ON 03/06 TO ALL

I work with the guy who wrote MacLabeler, and he's got it running on the Plus. I don't know when it'll be in the pipeline, but it shouldn't be long.

#### Formula Fonts

BOB MASSO ON 03/18 TO ALL

Does anyone out there know where I can get my hands on a font suitable for chemical formulas? At a minimum, you should be able to have the characters 0-9,-,+,(,) as either super or subscripts. So for example the formula



would be enterable (& editable) as a SINGLE line, as opposed to three. Also nice for my purposes would be the ability to "bar" characters. This is similar to underlining characters but places the line ABOVE the letter. If I need to, I will end up using a Font Editor to roll my own but would prefer using an existing font if one exists for my purpose. Thanks.

contd.

**FRED SEELIG ON 03/20 TO ALL**

While we're on the fonts-begging subject, can anyone recommend a good set of mathematical characters, or rather a set of fonts, preferably multi-sized, containing a complete set of math symbols? This ought to contain integral signs of different sizes, brackets of DS, line and contour integral signs, sigma and pi symbols with characters above and below (or allowing such), vector signs, bold face character for matrix equations, and accompanying transpose symbols, etc., etc. Do I have to create a set myself using Fontastic? Anything better that will give results quicker?

**KEITH BLAIR ON 03/22 TO BOB MASSO**

Princeton!!! I had the same problem until I found this 'Princeton' font. It is supposedly available on CompuServe, but I found it on 'The Twilight Clone' (946-8838 and a \$25/yr. membership) along with a program called SciHelp. This font looks very similar to Geneva, but when you press the Option or Option-Shift, you get a whole bunch of scientific characters, including all those super and subscripts.

**MARTIN MILROD ON 03/25 TO ALL**

Fred S. and Bob Masso may wish to look at a newly-released font called Algebra. It contains loads of mathematical/scientific formulae and stuff like that. I'll try to upload it to the WAP Files Board.

**REGINA LITMAN ON 03/25 TO ALL**

1. Princeton Font is on WAP SigMac disk 11 or 12. (It is recommended that these two MacFonts disks be purchased as a pair.) I believe it is an earlier version than 2.0. These two disks also contain other Math and Logic fonts. 2. Algebra Font recently became available on Twilight Clone BBS (946-8838). 3. Peter Hajdu of Vanier College in Canada has created a disk called MathWrite which contains math fonts. It's available for \$20 (U.S. funds) from MacMag, 3743 Notre-Dame Street West, Montreal, Quebec, Canada, H4C 1P8. Please note that the publication I read this in is several months old, and this may no longer be available.

**Mac+ Firmware**

**JIM RHODES ON 03/31 TO FRANK POTTER**

Well, I've cancelled my order for a Mac+ upgrade and ordered a MonsterMac from Levco instead. I'm not using my Mac for Big Business anyway. I think MonsterMac will suit me better. I can use RamStart and Switcher and all my old software and be very well satisfied, I think. I don't need the hassle of using HFS yet, but it would still be a possibility with MonsterMac.

**Switcher on Mac+**

**JEFF LEVIN ON 03/28 TO ALL**

Overall I'm impressed with the +, but I've had trouble running Switcher 4.4. Seems the Clipboard won't xfer between applications, either with the Option key or the menu selection checked. Anyone else had this problem? (P.S.-Also had a couple of random bombs with Switcher on the +.) Thanks.

**FRANK POTTER ON 03/29 TO JEFF LEVIN**

Switcher 4.6, which is out, may deal with this problem. At least I heard a rumor to that effect.

**Mac Misc. & Gossip**

**IBM PC-RT**

**ROBERT CALHOUN ON 03/01 TO MICHAEL DROLET**  
The RT is basically a very fast machine that uses obsolete technology. Instead of getting its speed from VLSI chips that

have instructions (I am thinking of floating point coprocessors here) like floating point multiply, it uses very simple instructions running very fast. (Sort of like my 6502... except that I'm running very simple instructions at a paltry MHz.) It will be difficult to program this computer, and the object files will be 4-5 times larger than those developed for "normal" machines. It also tries to run AT software...at a sluggish 30% slower than the already slow 6 MHz AT. Forget it...it's obsolete already. Now if Apple introduces a 12MHz open Mac with VMEbus slots and a floating point coprocessor and some kind of custom chip to handle the QuickDraw routines....

**New Magazine**

**MARTIN MILROD ON 03/06 TO ALL**

The Macintosh Journal, Vol 1, No 1, dated February, 1986, arrived in the mail today. It's a no-advertisement review published by B&P Publishing and provides solid reviews and mini-courses in how to run selected software. They also provide software templates (\$15 each) for the software application reviewed and some PD collections. At \$30 per year subscription, it may be of interest to some. If interested further, their address is: B and P Publishing, P.O. Box 1341, Provo, Utah 84603-1341

**128K Blues**

**JIM RHODES ON 03/26 TO ALL**

I never got an external drive because, by the time I was ready, I found out that you could run a RAM disk on a 512K.

I never got a 512K because, by the time I was ready, I found out that you needed 1024K to have room for a good RAM disk.

I never got a 1024K because, by the time I was ready, I found out that Apple was making a 1024K board for the Mac.

I'll never get an Apple 1024K board because, just as I was ready, I found out that the Mac + is a hybrid kludge PC/Business machine.

I think I'd rather have a MonsterMac. - Jim Alredilate.

**EDMON J. DONNELLAN ON 03/27 TO JIM RHODES**

That's one nice thing about a //. The basic machine is so primitive and outmoded that one feels no guilt about adding and shuffling cards about in it at will, like a Dagwood sandwich. If you're by definition a dinosaur, you just relax and tromp around and have a lot of fun.

**JIM RHODES ON 03/28 TO EDMON J. DONNELLAN**

The Macintosh is the // of the future! Things change (just had to get that in). Thanks Ed.

**EDMON J. DONNELLAN ON 03/29 TO JIM RHODES**

Yes, but is the Amiga the Mac of the future?

**ALLAN LEVY ON 04/02 TO JIM RHODES**

I just saw a little plug-in for the Atari that allows it to run Mac software - unfortunately Apple may not sell the guy the necessary ROMs. I think it was in last week's InfoWorld.

**Telecommunications**

**2400 Modem**

**BOB MASSO ON 03/03 TO CHUCK EDMISTON/ALL**  
Well, I broke down and got a 2400 baud modem for home use, but I am having my problems. It's a USRobotics Courier 2400, connected to a 512K Mac. I am able to perform all the AT commands & get response from the modem, so I know my cable must be correct. I can get the modem to autodial a number all right, too. What I can't get it to do is to contd.

understand that when it gets that funny sound, THAT means there is a computer to talk to on the other end!! The manual says it will auto-detect a 1200 on the other end and drop its speed accordingly, but does it really? I have tried both RR7 and FreeTerm 1.8, at both 2400/1200 settings to numbers operating at 1200 and to others at 2400, but I can never get online. It is still on its factory settings: 8 data bits, null parity, 0 stop bits. These settings SHOULD work!! ANY of you Courier owners here encountered this problem or have some suggestions of what else I could try?? Thanks.

DONALD KAHLER ON 03/03 TO BOB MASSO

I also have a USR Courier, and I don't have the problem you mentioned. In fact I don't have ANY problems with it, now that I have disconnected a portable telephone from the line. (I couldn't use it at 2400 baud with the portable phone connected!) The only suggestions I can make are: (1) Read the manual VERY carefully - there's a lot of stuff in there - and make sure your dip switches (on the bottom) are set as they recommend. (2) On WAP boards, I find it necessary to hit RETURN after getting the CONNECT 2400 message. Otherwise, the boards just wait and do nothing. Good Luck!

TOM VIER ON 03/05 TO BOB MASSO

This is not really a solution to your problem, but you share the misconception with many others about speed shifting in your modem. The modem ORIGINATES the call at the speed your serial interface talks to it in. The modem only changes speed when it ANSWERS. If both ends were agile, they would be chasing each other all day.

DONALD KAHLER ON 03/05 TO BOB MASSO

That sounds like a CARRIER DETECT problem. Maybe a cable problem? The following shows the pinout connections for the cable:

Mac		Modem
1	-	1
5	-	2
9	-	3
3	-	7
7	-	8
6	-	20

These are the ones I use and are identical to a Compucable I purchased from Clinton Computer on a trial basis when I was having a problem at 2400 baud. It was identified as a "Mac to HSM (Hayes Smartmodem)" cable. If the cable checks out, either call or write the company. I wrote to them, and a very helpful gentlemen called me and gave me the clue to solve my problem (disconnecting a portable phone from the line). If you write, give them as much info as you can, including printouts of the Mac screen showing responses, diagnostic test results, etc.

DONALD KAHLER ON 03/05 TO BOB MASSO

I just had another thought, Bob. What communications program are you using, and are all of the settings correct? I use Red Ryder or Freeterm with good results. Just to show you how easy it is to mess something up, I was in the process of downloading something once, and the board just died. I panicked and switched to Freeterm and everything was O.K. I found out later that I had accidentally clicked on "Change to Printer Port" under the "Mode" section of the menu bar!

#### Mac Cables

TOM VIER ON 03/06 TO ALL

Someone here asked about connecting the Mac+ with the new

connectors. My hunch is that you can use the //c cables since they also use the little DIN connectors. Sorry I couldn't find the message.

GEORGE KINAL ON 03/10 TO TOM VIER/ALL

No, sorry Tom, the //c uses a 5 pin DIN connector, whereas the Mac+ has a VERY unusual 8-pin (not 9, and not the same as on a Model 100, for example) connector. Why does every new Apple have to come out with a different connector, anyway??

#### Games & Gamesig

##### Orbiter, First Look

RICK STICKLE ON 03/03 TO ALL

Well, Orbiter is long and involved. It consists of all 3-D graphics except for the landing view, which is a "wire frame" view, and the same for every landing site. The average mission will take at least an hour+. Many events are in real time, which means of time spent watching the screen, some time compression is possible. Orbiter also makes good use of speech, the voice acting as mission control and prompting you through launch and landing. There are options so that you can do a whole mission or just part of one (i.e. launch, orbit, or landing). The landing sequence isn't as involved as MacChallenger, but that was to be expected.

##### Personal Computing

TOM PIWOWAR ON 03/06 TO RONALD WARTOW

Read your life story today at Safeway. How did you manage to get top billing? By the way, the 9-year-old is doing well with GATO.

RONALD WARTOW ON 03/06 TO TOM PIWOWAR

What a pleasant surprise having an august Macintosh published database programmer show up here. By way of background, this fellow, Jack Hayes, called me one day a few months ago. We talked for an hour and a half. I gave him some contacts across the country, including some of the GAMESIG's "interesting" games. I thought he was just going to put in a little "sidebar" with bios of the various people interviewed. It was quite a shock when I read the article. By the way, Ray Hakim and Steven Payne are both WAP and GAMESIG members What I really want to know is, what do YOU think of GATO??? Please pass on my regards to everyone on Terry's and Paul's boards.

##### Strategic Conquest

BOB MASSO ON 03/13 TO ALL

OK, OK this is one of those games (for the Mac) which I find myself playing until 2 a.m. if I'm not careful - but I have noticed several glitches which other players might either want warnings on or be able to help me out on, to wit. (1) - Too much wax on those decks, swabby! On several occasions I have seen an aircraft carrier moving under destination orders leave behind an airplane. In this circumstance, the airplane never registered as landing, its fuel is at zero, and it immediately crashes when it comes time for its move. Note that this occurred with an almost empty carrier—this particular glitch is intermittent and rare. (2) - Send in the Marines! Normally to land troops from a troop-transport, you must either (A) be adjacent to a city (B) be adjacent to hostile forces or (C) have unmoved & awake troops and have that be the transport's 1st move after leaving a city. However, I have noticed that the computer seems to be under fewer restrictions, as it seems to land troops quite freely. Or is it that there is a 4th method I just don't know about? (3) - Rubber transports. Supposedly a troop transport or aircraft carrier can only carry a limited # of troops or airplanes respectfully. But, while in contd.

port, the #s each are registered as carrying are upto 99. SOOOO, if one of those blasted enemy subs manages to sneak up to a city and sink a transport, ALL of the armies will die as well. Even worse, any aircraft as well! (Apparently the algorithm destroys all "carried" units without checking further for type.) This works in reverse with carriers as well - so be SURE to somehow screen a carrier docked for repairs OR to move those airplanes elsewhere. (4) - It seems to me that at higher levels of the game, the computer doesn't play any smarter, it just gets more production. Can anyone else confirm this? (5) - Hint—stockpile your nuclear bombers. Use them only in conjunction with regular combat or in mass bombing attacks. Losing a city temporarily every 20 turns is only an annoyance; losing all 4 cities on a continent in a single turn can be disaster. Best is to have your bombers being produced in 2 cycles, so you get several very close together every 10 days. To any other Strategic Conquest players, if you have any other ideas or observations about the game, please leave a message.

#### PR on Macintosh

RONALD WARTOW ON 03/25 TO ALL

On my return, I bring great news. Our favorite game, PIXEL'S REVENGE, is being converted to run on the Macintosh. Release date: the fall of 1986. Rumor has it that the mouse will be sparingly used given the public's squeamish attitudes towards mice in delicatessans. More as it develops.

#### Desk Top Publishing

##### Inside LaserWriter

KEVIN NEALON ON 02/12 TO ALL

Apple has a package that includes their manual Inside the LaserWriter, as well as Adobe's PostScript Language Reference Manual and PostScript Tutorial and Cook Book. Also included are two disks with example programs and a utility allowing the downloading of a PostScript file directly into the LaserWriter. It costs \$75 and should start shipping soon. I'd tell you where to write, but I forgot to copy the address. However you could call Developer Relations at 408-973-4897 and probably find out.

##### Adobe's Newsletter

KEVIN NEALON ON 02/12 TO ALL

I really suggest that if you are interested in finding out more about PostScript and its possibilities you write Adobe systems at Adobe Systems Inc, 1870 Embarcadero Rd., Palo Alto, CA 94303. The subscription to this quarterly is free, but you do have to write them. I hope in future issues they explain how they put these fantastic special effects on the page by just using PageMaker (which is what they use to lay out the newsletter).

##### PageMaker 2.0?

KEVIN NEALON ON 02/12 TO ALL

Any information on the announced PageMaker 2.0? Like cost, availability, or new features.

BERNIE URBAN ON 02/13 TO KEVIN NEALON/ALL

Sure it isn't 1.2? Or do you mean the "Professional" package? My recollection is that the latter version is to be released in the late summer. We may get a copy for beta test at the office.

##### Command File

ANDY GALLANT ON 02/18 TO ALL

I would like to produce documents with full-page MacDraw

figures. Is there software that would include these documents "as-is"? I have been told that MS Word has include file capability but only for text files - so, to include graphics, one must copy each such page into the document via the Clipboard. There is probably no need to mix text and graphics on a page - however, page numbers are important, figure titles would be nice, and headers/footers would be a luxury. Any ideas or experiences to share?

BERNIE URBAN ON 02/19 TO ANDY GALLANT

1. I am always mixing text and graphics in the Journal. 2. I use the copy and paste procedure to get MacDraw docs. into PageMaker. Once in PageMaker you can easily add titles, figure notations, page numbers, footnotes, etc. Cost is indeed an obstacle. Maybe we can deal direct with Aldus on a group purchase.

MARK WALTER ON 02/19 TO BERNIE URBAN

When you say the "copy and paste procedure to get MacDraw docs into PageMaker", I hope you mean you are using the Place command in PageMaker's File menu and not the copy/paste which usually refers to the Clipboard and/or Scrapbook. PageMaker's Place command will place any of the following files: straight ASCII, MacWrite, MS Word, MacPaint, MacDraw (only if saved as PICT format). I have heard that Excel charts also work, but I don't know about that for sure.

##### PageMaker Bug?

FRANK POTTER ON 03/20 TO ALL

I seem to have this problem with PageMaker: I can and do carefully format an article in Word, putting it into the right font and size and justifying it - all those things. Then, when I Place it in PageMaker, it frequently changes font sizes on me - I peer at it and find that Times 10 is now Times 12. 1. Is the program getting even with me for some imagined slight? 2. Once it does this, is there any way to put things back to where they should be without fixing each column?

BERNIE URBAN ON 03/20 TO FRANK POTTER

1. Which version-1.1 or 1.2, and what is the setup you are using? 2. Which version of Word are you using? We experienced strange font changes months ago; never were able to track it down. I think it was while using .95 PMaker or maybe 1.0. The new Word also seemed to have some incompatibility with the version we were then using. No trouble since switching to 1.1. Also if you are using an incorrectly copied version of Pmaker, i.e. mismatched versions of the Finder, Aldus Prep, LaserWriter or Imagewriter drivers, no telling what problems may arise. 3. No recourse other than to recheck Word document before Placing for font size or selecting column by column and resizing font.

FRANK POTTER ON 03/21 TO BERNIE URBAN

I am using Pagemaker 1.1 and Word 1.05. I have them both on an 800K disk and am using Switcher. The problem is not that Word has told PM the wrong fonts - it is PM that is doing it. Someone else has suggested that it may even change fonts, as well as sizes. Woc. ☺

# DISKETTERIA DISPATCH

by Jim Little

I took a vacation over the Easter holidays, so there are no new Apple // disks this month. Volunteers are needed to help distribute disks at the monthly meetings. Please call me or leave a note at the office to help.

There are three new SigMac disks this month. The following descriptions are submitted by Dave Weikert and taken from the notes of Tony Anderson.

## SigMac Disk 37: Fkeys

### In the Fkeys folder:

**Volume FKEY** Set the sound volume instantly.

**BigCursor** For the visually impaired or just for fun.

**Clippy** Place those keys you can't type from the keyboard on the clipboard.

**ComKey** Read the comment from the info part of a document.

**DA Key 1.5a** Use any Desk Accessory without installing it in your system file.

**Date Key 2.0** Insert the current date wherever the insert bar is.

**FadeKey** Makes the screen fade to black.

**FastClock** Displays the current time quick as a bunny.

**fkey3** Screen to MacPaint document.

**Fontsie 1.4** Allows the use of any font without it being installed in the system file.

**PanicKey 1.16** Not destined to replace the bomb alert box any time soon.

**Show Key** Shows what fkeys are currently being used.

**Sleep** When you pause from a mental workout with the Mac use this fkey to give the Mac a rest also.

**SS Key** Another fkey to set the sound volume level.

**Crash Saver** Attempts to trap the bombs and return to the desk top.

**Window Clip** Places an image of the current window on the clipboard.

**Screen Clip** Allows you to copy part of the current screen to the clipboard.

**FKEY Installer** This is the utility that makes this disk so easy to use. Dreams of the Phoenix, Inc. has released it for non-commercial distribution to encourage fkey creation and use. Works similar to font/da mover.

**FKEY Sampler** This application allows you to try out an fkey before committing it to a spot on your fkey lineup.

### In the Extra Fkey/DA folder:

**Extras 1.5** This desk accessory is included so that the associated fkey can be used with it. It does an assortment of useful things. It will show the disk space available on any disk, the free memory in the Mac, delete and/or rename files, without leaving an application. Extras also allows the setting of a quit file. When you select quit on the current application, extras will start up the selected quit file, bypassing the finder. **Extras FKEY** This fkey will allow you to cancel the quit file and go immediately to the finder upon exit of an application.

**Font/DA Mover 3.1** This is the most recent version

of the Font/DA Mover. Most likely there is a newer version by the time you read this. It has been changing very rapidly. It is here to allow you to install Extras 1.5

**Function Key Runner** A desk accessory that determines the function keys available and displays them in a menu that you may select from.

### In the A Little Extra folder:

**Black Box™** This is a Mac game based on a Parker Brothers game of the same name. It's really a game based on sub-atomic physics. You fire electrons into a solid object and try to determine where the atoms are by the way the electrons reflect from the object.

## SigMac Disk 38: Graphics Tools

**BlowUp 3.0** This application enlarges a MacPaint document by a factor of two. It creates 4 MacPaint documents for every MacPaint document it opens. Great for posters.

**MakePaint** MakePaint creates MacPaint documents from PICT type files or resources from the clipboard. Can also be used to cut, clear, or invert sections of the MacPaintings.

**PaintMover** Allows you to work with sections as large as a whole page. You can enlarge, rotate, and smooth as well.

**Scroll Paint 1.0** You can save several Paint documents in the Mac's memory and scroll through them on the screen continuously.

### In the 3D Sketch folder:

**3D Sketch** Allows one to draw a wire frame 3 dimensional picture on the Macintosh screen. To use the program simply select the desired tool from the menu and then use the tool to draw on the screen.

**3D Sketch doc** Documentation for the above.

**3d city skyline** A sample.

### In the Dynamo folder:

**Dynamo** Uses a small number of frames (or a lot if you really want) to anchor the animation. Then interpolates between frames to give very smooth visual effects.

**Dynamo Doc** Just a short document. Most of the documentation is built into the application.

**Examples** Some animations to get started with.

### In the Slide folder:

**Slide** Allows you to create "MacPaint file" slide shows similar to the commercial program "The Slide Show Magician" by Magnum Software.

**Slide Documentation** (by Bill Croft).

**SlideBlank** MacPaint document that has the outline showing what part of a MacPaint document will be shown on the screen.

## SigMac Disk 41: Cap'n Magneto

Adventure has never been like this before. You're Cap'n Lance Magneto of the Intergalactic Rangers, and your ship has been forced to crash land on an unknown planet. Now you must survive. This game allows you to roam all over the planet, but watch out! That humanoid may not be what he appears to be. All commands are entered with the mouse. ☺

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**WAP TUTORIAL REGISTRATION**

The following three WAP tutorials are being offered to Apple // owners on Tuesday evenings 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 1985 issue of the WAP Journal. However, the 3rd tutorial has been changed as follows: It will introduce AppleWorks, Apple's integrated Word Processor, Database and Spreadsheet, for use with Apple //c, //e and ][+ when patched by Norwich Plus Works or similar software. An AW Data Disk will be available for use (or copying) during the tutorial. It contains several small (less than 10K) examples of databases and spreadsheets, in addition to instructions in the form of an AW word processor file. The tutorial is designed to guide new AW users through the procedures for using, adding to, and altering existing files. The particular files used will be chosen in response to requests from registrants.

- ( ) May 6 - WELCOME TO THE WORLD OF APPLE - No Tutorials
- ( ) May 13 - HOW TO USE YOUR APPLE SOFTWARE - in June,
- ( ) May 20 - POPULAR APPLICATIONS FOR YOUR APPLE - July, Aug.

The fee for each tutorial is \$10.00 with an Apple, monitor and disk drive, \$15.00 without (monitors available for 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.

     Tutorials at \$10.00 (with equipment)           Tutorials at \$15.00 (without equipment)

-----

SigMac is sponsoring a series of two monthly tutorials for the beginner. The fee for two tutorials is \$30.00. They will be held at the office, from 7-10 PM on Monday evenings. You are strongly urged to bring your Macintosh. These tutorials fill up quickly - call the office to verify space before mailing in your registration.

- ( ) Monday, May 19 and 26
- ( ) Monday, June 23 and 30

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A tutorial on maintenance and repair of Disk Drives ][ for the Apple is being offered on Saturday, May 17 at 9:00AM. The instructor is Rich Mlodoch. Attendees may bring a drive or just watch. See article by Ted Meyer elsewhere in this issue.

- ( ) \$15, member      ( ) \$20, non-member

Please check the desired tutorials and return this form with fee(s) made payable to Washington Apple Pi, Ltd. to:

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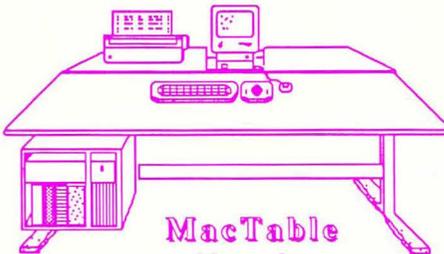


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