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Washington Apple Pi



The Journal of Washington Apple Pi, Ltd.

Volume 7

December 1985

Number 12

Highlights

Macintosh Wizardry

Dos & Don'ts of Spreadsheets: Part 2

Word Perfect & Perfect A// Word Processing

Molecular Biology on the Macintosh

Ten Tips for Using MacWrite

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Give Your Computer A Gift for the Holiday Season



New Products Announced By Apple

Apple™ Computer, Inc. has just announced several major new peripheral products for both the Apple // and Macintosh™ product families.

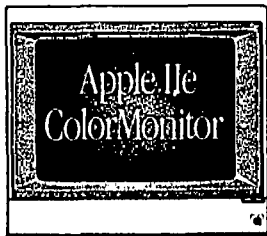
The product line is impressive! It includes composite color monitors for the Apple //e and //c which also display clear 80-column text in a monochromatic mode. The new UniDisk 3.5 is a high-capacity floppy disk for the //e and //c that greatly increases storage capacity and speed. The ImageWriter II, a worthy successor to the ImageWriter, features inexpensive color printing, near-letter-quality text, an optional sheet feeder, and a slot for expansion cards. Apple has also added a 20 megabyte hard disk to the Macintosh product line as well as a new modem and software for both Macintosh and Apple //.

Special Pricing for Pi Members

Clinton Computer is pleased to announce that Washington Apple Pi members will receive a **25% DISCOUNT*** off the list price on all Apple brand peripherals and software and on AppleCare. This discount extends to the new line of Apple peripherals, though quantities may be limited for a short period of time depending on Apple's allocation of product to our stores. To take advantage of this discount, just bring in your Washington Apple Pi Membership Card to our store.

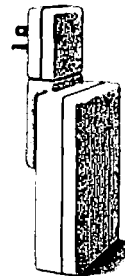
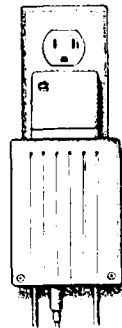
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If you would like further details, please call either of our stores -- (301)856-2500 in Clinton, MD or (703)838-9700 in Old Town Alexandria, VA.



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Color Monitor //c
List \$399.00

Price to Pi Members \$299.25



Apple
Personal Modem
300-1200 Baud
List \$399.00
Pi Price \$299.25

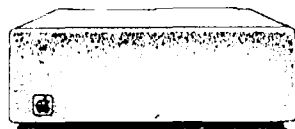
Requires P8 Cable, Pi Price \$22.50



UniDisk 3.5
for //e and //c
List \$499.00

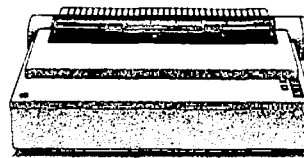
Pi Price \$374.25

Unidisk to //e Kit, Pi Price \$51.75



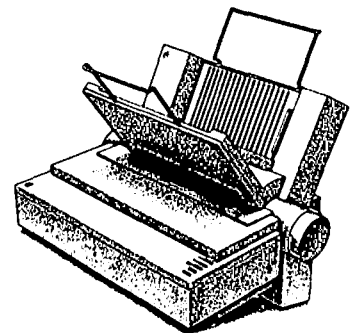
Hard Disk 20
for Macintosh 512K
List \$1499.00

Pi Price \$1124.25



ImageWriter II
List \$595.00
Pi Price \$446.25

Requires P8 Cable, Pi Price \$22.50



Sheet Feeder for
ImageWriter II
List \$225.00

Pi Price \$168.75

*** TERMS AND CONDITIONS:** Discount is available to persons who have been Pi members for at least 3 months. Discount applies to cash and certified check purchases of Apple peripherals and software (no CPU's) and may not be applied retroactively. If 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.

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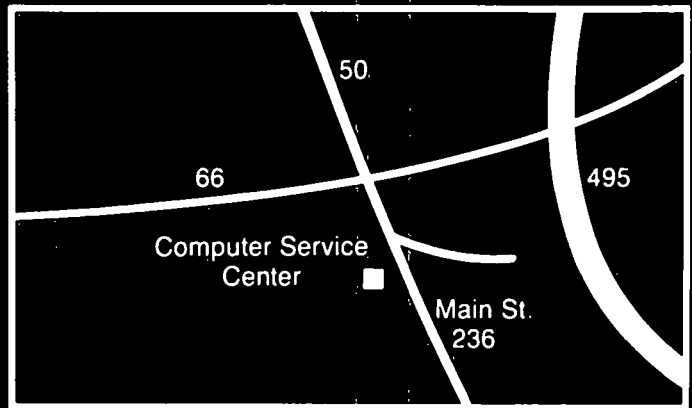
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Washington Apple Pi, Ltd.
 8227 Woodmont Avenue, Suite 201
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EDITORIAL

Be prepared to dust off your charge cards and checkbooks, and to retrieve some of that cash hidden in your mattress. It's that time of year. And we have done our utmost to provide you with all kinds of gift suggestions. (This issue is almost as much fun as a Nieman Marcus Holiday Catalog.) Those of you who are considering a first word processor for the Apple //, or wish to upgrade, check Walt Francis' exuberant testimonial for WordPerfect. Ron Kool (aka Wartow)'s group provides insights into best games to buy for your young ones (or yourself). David Ottalini points out sources for books, magazines and hardware for the Apple /// line. Joe England provides you CP/M devotees ample reason to visit the Disketeria. Bob Platt provides ammunition for you bookworms (positive, not negative connotation here ala Microsoft Word worms). Ray Hobbs and Jim Burger provide more gift suggestions ranging in price from \$19.95 to \$1399. Lynn Trusal

suggests a 1200 baud modem for \$175. Don't forget to look for last minute stocking stuffers at our garage sale in December, and why not give gift WAP memberships to your friends? And while you are at it, renew your own. Now if none of this turns you on, we know where you can choose from 90 used Rolls Royces ...

What was it that Murphy said? Our Sunol hard disk decided to take a holiday and took our UBBS Systems 1, 2 and 3 with it. It was a major disappointment and has generated considerable phone traffic and confusion. By the time you read this we should be back on the air with some stop gap systems as a minimum. Perhaps even totally up to snuff or more. Special thanks to Mike Ungerman who has spent over 12 hours at the office two Saturdays in a row. Look for more information from Lee Raesly and his able crew in next month's issue.

President's Corner

by Tom Warrick

Garage Sale! Have you ever been to a Washington Apple Pi meeting? Whether you have or not, and no matter what computer you own or don't own, you should come to our December meeting on Saturday, December 21, at 9:00 AM at our regular meeting place at the Uniformed Services University of the Health Sciences, 7401 Jones Bridge Road in Bethesda. Instead of a speaker or a demonstration, we're going to hold a "garage sale" (named in honor of Steve Jobs' garage). Bring all the games you've solved, the hardware you've upgraded from, the accessories you no longer need, the magazines you've read, and anything else you're interested in selling. Also bring some money to buy this year's Christmas and (belated) Hannukah presents. Give your computer a present! In past years the bargains have been outstanding and the meeting is always one of the best-attended of the year. If you have anything to sell, come to the USUHS cafeteria between 9:00 and 10:00 a.m. to set up. This also enables sellers to do a little shopping before everyone else comes in. We will also have our regular question, answer and gossip session beginning at 9:00 followed by a short business meeting at 10:00. The garage sale opens to everyone after the regular business meeting at about 10:30. Two notes: there is a \$1 admission charge to the garage sale, and USUHS rules prohibit sales by commercial vendors.

Future meetings: The meeting site for the January WAP meeting(s) is, as it has been in the past, up in the air. We believe that it will be back at USUHS, but check this space next month for more definitive information.

The last episode in the WAP video projector saga (for now, at least): At the October meeting the membership voted to buy a Limelight video projector and screen, and to consider buying another, more powerful projector next year when new models come out and, we hope, prices come down. The choice of a Limelight will also allow us to use the projector at Special Interest Group meetings and at tutorials, because the Limelight is portable and very easy to set up and use. To make arrangements for the use of the projector, contact the office at 654-8060.

Users' Group Cooperation: Late in October, representatives of a number of the microcomputer users' groups in the area met at the Washington Apple Pi office to discuss a number of areas in which mutual cooperation might be possible. Computers represented included Epsoms, IBM PC's and compatibles, Kaypros, Morrrows, NEC's, Tandy/Radio Shack and of course Apples. There was one non-brand specific group, the VIP-Access group for Visually Impaired Persons. Topics discussed included the sharing on an equitable-cost basis of a video projector and coordination of meeting locations--everybody else has the same concerns WAP has. Also discussed was the possibility of setting up an umbrella organization à la Boston Computer Society. This would, of course, be a monumental undertaking and one that would require much study, but there was some interest in exploring it. The group will continue its meetings over the next few months. We tried to invite every area users group

we could, but no doubt we missed a few. If you know of or are a member of a group with an interest in participating in a cooperative effort, please give me a call at 656-4389.

MacWorld Expo: Washington Apple Pi will be attending the third MacWorld Expo, which will be held January 16-18, 1986, in San Francisco. If you are going and could volunteer a few hours to help out at the WAP booth, give SigMac chairman Steve Hunt or me a call. After the fantastically successful Boston MacWorld Expo, a group of us decided it would be a good advertisement for WAP and for the Washington area in general if we showed off some of the great things people here are doing with their Macs. If you've written a Mac program or have a Mac product and would like to show it off at the WAP booth, give me a call.

Excel SIG and tutorials: I admit to being somewhat skeptical about computer programs that get rave reviews even before they are released. Often such programs do not live up to their billing. It's a pleasure, therefore, to work with Microsoft's Excel, a program that is every bit as good as everyone has been saying it is. Ed Myerson, WAP's treasurer, has told me that Excel is an improvement over Lotus 1-2-3 of the same order of magnitude that 1-2-3 was over VisiCalc. Of course, ahem, I wouldn't know about a program that doesn't run on an Apple computer, but I do use spreadsheets extensively at work and at home. Excel is a dream of a program to use. Its power is awesome, and yet you do not lose the ease-of-use that led many of us to buy Macs. If you have a Mac or are thinking of getting any kind of computer for any sort of number-crunching, you will be doing yourself a favor if you check out Excel very carefully. In the near future, WAP will be organizing an Excel Special Interest Group. We will also be offering Excel tutorials early in the new year. Watch our tutorial page next issue for further details.

A comment: Get out your November issue of the WAP Journal. Take a look at Brother Tom Sawyer's "In My Opinion" article on pages 29-30. Read it again. Memorize it. Give it to your friends. Give it to your school board. Brother Tom, thank you.

In the world of Apple: The Apple Computer, Inc. shareholders' meeting in January has become Apple's showcase for new products, and 1986 is likely to be no exception. The rumor mill has been working overtime, but there seem to be a number of items we can expect.

This will be the first shareholders' meeting under the Sculley era, and will probably give an interesting indication of the future of Apple. For this year, expect no thoroughly new computer to be wheeled out. Instead, expect more peripherals and upgrades for Apple's existing product line. Apple may, however, disclose details of the next Mac-like computer, which will have a larger screen separate from the main unit, more memory, and perhaps more ports to attach peripherals to. I would not expect deliveries to begin for some months.

Mac owners should expect upgraded ROMs that will incorporate the new hierarchical file system that hard disk users will find indispensable. Non-hard disk owners will find

contd. on pg 7

EVENT QUEUE

Washington Apple Pi meets on the 4th Saturday (usually) of each month. Library transactions, Journal pickup, memberships, etc. are from 8:45 - 10:00 AM. From 9:00 to 10:00 AM there is an informal "Help" session in the auditorium. The main meeting starts promptly at 10:00, at which time all sales and services close so that volunteers can attend the meeting.

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

PLEASE NOTE: The December meeting will be on the third Saturday, December 21, at USUHS.

Following are dates and topics for upcoming months:

- December 21 - Garage Sale
 - January 24 - Home Control (to be confirmed)
- Dates for SigMac (held at Georgetown University) are:
- December 7 - TBA
 - January 4 - TBA

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 \$27.00 for the first year and \$20.00 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.

Current office hours are:

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

at 984-1228.

JOB MART

POSITION WANTED: Apple Macintosh computer instruction in the general Frederick, MD area. Instruction on the Macintosh and assorted software. Help with pre-buy decisions. Personalized service and reasonable rates. Call Lynn R. Trusal, (301) 845-2651, evenings, with no calls after 10:00 PM. ☎

CLASSIFIEDS

DONATION WANTED: Small non-profit children's theater is looking for an Apple][+ computer. Donations are tax deductible. Onstage Productions, The Little Theater on the Corner, 8121 Main Street, Ellicott City, MD 21043. (301) 465-8717.

WANTED TO BUY: Apple //e (CPU only). Call Bill Weingartner on (301) 746-4097 between 8:30 and 4:30 during week.

FOR SALE: Macintosh XL (or Lisa) 512K memory card by Apple Computer, \$450 (list price is \$700). Expand your 512K Mac XL to 1 megabyte and run Switcher or a RAM disk with plenty of work space. Call Dave Weikert at home evenings or weekends at (301) 926-4461 or at work weekdays at (703) 841-1122.

FOR SALE: IDS Model 480 Microprism printer, dot matrix with graphics capability; comes with the Grappler+ parallel printer interface card for Apple][family compatibility. Both in excellent condition with little usage since purchase in 1983. \$525 complete. Call John after 6:30 PM at (703) 476-3920.

FOR SALE: MicroSci A2 disk drive, brand new, never opened. \$165. Call Arnie, evenings at 460-8093.

FOR SALE: Complete MacLion software and documentation. Registration transferable. \$135 or best offer. Call Al Best (804) 786-8600, days.

FOR SALE: Magic Video Digitizer with camera and tripod. Only used a few times. Retail price including tripod is over \$600. Yours for only \$300. Call (301) 424-3942.

FOR SALE: Macintosh Games: Deadline, Infidel, Planetfall, Suspended; also MacPoly. \$20 for Infocom, best offer for MacPoly. Call Carol (202) 462-0433.

FOR SALE: Apple //e system, 128K RAM, 80-col. card, //e monochrome monitor, 2 Apple disk drives, Apple Super Serial Card w. cable, CP/M card, Apple mouse, Apple joystick, Imagewriter printer, lots of books and software, e.g. dBaseII, WordStar, VisiCalc, Turbo Pascal, Print Shop, Flight Simulator, etc. \$1850 negotiable for whole package or will sell components separately. Call Alfonso at 944-6873 or Eckhard at 944-6944 weekdays, 9:00-5:30. ☎

COMMERCIAL CLASSIFIEDS

FOR SALE: Apple //e with dual disk drives, CP/M and 80-column cards, CP/M WordStar, and Zenith monitor. Like new. \$1600. Call (703) 486-0195.

FOR SALE: Apple][Disk Drives, excellent condition, 8 for sale. \$75 each or \$500 for all 8. Call Dr. Schoenberger Phone 301-984-1228 ☎

* December 1985 *

SIGNEWS

| SUNDAY | MONDAY | TUESDAY | WEDNESDAY | THURSDAY | FRIDAY | SATURDAY |
|------------------------|---|---|---|---|---|--|
| 1 | 2 Mac Beg. Tutr.#2 7-10PM-Off: A/// Pascal 7:30PM-Off. | 3 Apple// Beginning Tutorial #1 7:30-9:00PM Office | 4 Deadline for Journal Articles | 5 SigMac 7:30PM-Lady of Lourdes; GAMESIG 7:30-Off.-> | <-Thursday 5th contd. DisabledSIG 7PM-CCCC | 7 SigMac 9AM-Geotown Univ-PreCln Bldg.RmLA4 Mac/XL SIG |
| 8 Happy Hannukah | 9 | 10 Apple// Beginning Tutorial #2 7:30-9:00PM Office | 11 Executive Board 7:30 PM Office | 12 STOCKSIG 8PM Office; Apple /// 7:30PM-Conv Ctr. Inn -> | <-Thursday 12th contd. FAC Slice 7:30 MRIID Ft. Detrick | 14 Tutr. Mac-Basic Telecommun. 9:00 AM Office |
| 15 | 16 PI-SIG 8:00 PM Office | 17 Apple// Beginning Tutorial #3 7:30-9:00PM Office | 18 | 19 Pascal SIG 8:00 PM Office | 20 | 21 WAP Meeting 9AM USUHS Garage Sale |
| 22 | 23 | 24 Christmas Eve - Office Closed | 25 Merry Christmas | 26 | 27 | 28 |
| 29 | 30 | 31 Have a good one! | | | | |

January 1986

| SUNDAY | MONDAY | TUESDAY | WEDNESDAY | THURSDAY | FRIDAY | SATURDAY |
|--------|--|---|--|--|--|---|
| | | | 1 HAPPY NEW YEAR | 2 SigMac 7:30PM-Lady of Lourdes; DisabledSIG 7PM-CCCC -> | <-Thursday 2 contd. GAMESIG 7:30PM-Off. | 4 SigMac 9AM-Geotown Univ-PreCln Bldg; Mac/XL SIG |
| 5 | 6 Deadline for Journal Articles | 7 Apple// Beginning Tutorial #1 7:30-9:00PM Office | 8 Executive Board 7:30 PM Office | 9 STOCKSIG 8PM Office; Apple /// 7:30PM-Conv Ctr. Inn -> | <-Thursday 9th contd. FAC Slice 7:30 MRIID Ft. Detrick | 11 |
| 12 | 13 | 14 Apple// Beginning Tutorial #2 7:30-9:00PM Office | 15 | 16 Pascal SIG 8:00 PM Office | 17 | 18 Pie Ala Mode 9:00AM Gr.Falls,VA ForthSIG 10AM Office |
| 19 | 20 Mac Beg Tutr.#1 7-10PM-Off; PI-SIG 8:00 PM Office | 21 Apple// Beginning Tutorial #3 7:30-9:00PM Office | 22 | 23 EDSIG 7:30 PM Office | 24 | 25 WAP Meeting 9:00 AM USUHS?? |
| 26 | 27 Mac Begin. Tutorial #2 7-10 PM Office | 28 FAC SigMac 7:30 PM MRIID | 29 | 30 | 31 | |

Apple /// SIG meets on the second Thursday of the month at 7:30 PM in the Convention Center Inn, corner of 12th & K NW. The next meeting will be on December 12. See their news elsewhere in this issue.

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

Appleseeds is the special interest group for our younger members, age 9 and up. They meet during 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 Dec. 5.

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 January 23. See EDSIG News elsewhere in this issue.

ForthSIG meets on the third Saturday of the month at the office, 10:00 AM.

GameSIG meets on the first Thursday of each month at the office, 7:30 PM. The next meeting will be on December 5. See their news elsewhere in this issue.

LISA/MacXL SIG meets after the SigMac meeting on the first Saturday of the month.

PIG, the Pascal Interest Group, meets on the third Thursday of each month at the office, 8:00 PM.

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

SigMac meets on the 1st Thursday of each month (programmer's meeting) at Our Lady of Lourdes School, 7500 Pearl Street, Bethesda, MD; and on the first Saturday (general meeting) at Georgetown University, Preclinical Sciences Building, 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 fourth Saturday. ☺

MEETING REPORTS

by Adrien Youell

Enabling Details - A Review of the September 28th meeting.

Due to circumstances outside my control no details of the September meeting were submitted. This was no slight to the DisabledSIG folks; I just failed to make arrangements. When I next looked around for breath the Journal deadline had passed. Here are some notable names, brief details and contact numbers. Jay Thal is the man if you want more information; Jay is DisabledSIG chairman. Thanks are due to Drs. Kissman and Hakim of NIH who acted as our sponsors to use the Masur auditorium.

Leon Raesly demonstrated the Oberon OmniReader. For An OCR (Optical Character Reader) one can expect to pay from \$695 to \$400, depending on desired reliability of reading accuracy. The facilities and opportunities for our disabled colleagues increase by quantum leaps, but like the option above the price may be high. I should mention that Jay said that all of us will be disabled one day! Pause to think?

The good folks who participated are: Carl Bergman (301) 460-9272; John Stallen (301) 765-4748; Laurel Goldsmith (301) 279-5556 (has some excellent educational programs); Susan Brummel of GSA, 523-1906; and our own Boris Levine.

Telecommunications - A Review of the October 26th Meeting.

What an astonishingly fine meeting we had? Superlatives escape me. I had the feeling of bells, whistles and clappers. Some 400 - 500 imaginative members found their way to an obscure school just outside the Beltway to witness the Q&A starting at 9, Bill Holt (from Brøderbund) for half an hour at 10 and Telecomms for the duration from 10.30. In an auditorium large enough for a political rally, the TelecomSIG had a truly magnificent stage, excellent presentations and on-line comms, with three video projectors (under test). There was also a Vendor Show (by Clinton and the Computer Service Center, both registered Apple dealers advertising in the Journal), GAMESIG and a luncheon truck at the door! Even at writing date I am in a state of high excitement of how well it all went.

How sad that 1200-seat auditorium cannot be ours permanently but the cost is too high. Speaking of which, the attending membership voted by an overwhelming majority to enable the Board to acquire by the most advantageous means a "Limelight" projector at a quoted maximum cost of \$3,500. The Limelight will work with the Mac and //, in monochrome. The President explained that a more powerful projector may be available next year with forecasted newer technology at less cost. Maybe by then we will have found a way to subsidise such a purchase.

Brøderbund found a great Ambassador in Bill Holt who ripped into demonstrations of "Fantavision" an animation program, and "The Print Shop Companion" a superb graphics editor with many other utilities (for 64K Apple //, although he used a //c). It was unfortunate due to the way we

'edited' the meeting that Bill had no opportunity to show "Captain Goodnight", "Dazzledraw" or "Where in the World is Carmen San Diego?" (although amongst his Door Prizes he gave a copy of this to a member asking that it be demonstrated at a future meeting). Bill later showed "The Art of War" for the Mac to a select GAMESIG audience. In later discussion led by Ron Wartow (who else?) Bill related the 'party line' that Brøderbund is now far away from the gaming-alone image and is inclined also to 'education' and utilities. Mac projects are approached with caution because they want bug-free, quality programs. Bill's contact is Brøderbund Software Inc, 17 Paul Dr, San Rafael, CA 94903; (415) 479-1170.

Then, Mike Ungerman let fly with Telecomms. He introduced George Kinal, Chairman TelecomSIG, who set the tone for the rest of the meeting. We had many lines on comms and comms on-line! Great meeting! Congratulations to all those who contributed and helped with set-up. ☺

President's Corner contd. from pg 4

it an annoyance, but one that is easily dispensed with. At the same time you get the new ROMs, Apple will convert your internal 400K floppy drive to an 800K drive as is now available for the Apple // series. The price for these two items is likely to be attractive, I would guess in the \$300-\$600 range for both. (Remember that Apple, like many other computer companies, reserves price decisions until almost the last minute, so any price rumors should be treated with caution.) Another option offered will be an official Apple upgrade to one megabyte of RAM. Rumor has it that one of these upgrades will have a new port that you can attach your hard disk to. The resulting speed improvement in hard disk performance would be considerable.

Apple // owners should also see a few new things at the shareholders' meeting. One would hope that Apple will announce the availability and price of their new extended memory card, which was pre-announced this September. Another thing we may see is an Apple // AppleTalk card so that the Apple // can drive a LaserWriter. (If Apple has their AppleTalk card for the IBM PC line ready, it may be shown as well.) ☺

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WAP HOTLINE For Use by WAP Members Only

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

| | | | |
|--|------------------------------------|--|-----------------------------------|
| General | John Day (301) 672-1721 | DB contd.- VisiPlot | Leon Raesly (301) 460-0754 |
| | Dave Harvey (703) 527-2704 | Games - Apple // | Charles Hall (301) 330-4052 |
| | Robert Martin (301) 498-6074 | Games - Mac | Ron Wartow (301) 654-4439 |
| Accounting Packages | | Hard Disks | |
| Accountant(Dec.Sup.) | Mark Pankin (703) 524-0937 | Corvus & Omninet | Tom Vier (ABBS) (301) 986-8085 |
| BPI Programs | Jaxon Brown (301) 350-3283 | Sider | Jaxon Brown (301) 350-3283 |
| Home Accountant | Leon Raesly (301) 460-0754 | Languages (A=Applesoft, I=Integer, P=Pascal, M=Machine) | |
| Howardsoft (Tax) | Leon Raesly (301) 460-0754 | A | Louis Biggie (301) 967-3977 |
| APPLE SSC | Bernie Benson (301) 951-5294 | A | Peter Combes (301) 251-6369 |
| Apple TechNotes | Joe Chelena (703) 978-1816 | A,I | Jeff Dillon (301) 422-6458 |
| AppleWorks | Jay Jones (Balt.) (301) 969-1990 | A | Richard Langston (301) 869-7466 |
| | Ken Black (703) 369-3366 | A | Mark Pankin (703) 524-0937 |
| Communications Packages and Modems-Telecom. | | A,I,M | Richard Untied (609) 596-8816 |
| Anchor Mark 12 | George Kinal (7-10) (202) 546-7270 | A,I,M | John Love (703) 569-2294 |
| | Jeremy Parker (301) 229-2578 | M | Raymond Hobbs (301) 490-7484 |
| Apple Modems | John Day (301) 672-1721 | P | Donn Hoffman * (412) 578-8905 |
| ASCII Express | Dave Harvey (703) 527-2704 | Forth | Bruce Field (301) 340-7038 |
| | Marv Redd (301) 944-2150 | LISP | Fred Naef (703) 471-1479 |
| BIZCOMP Modem | Jeremy Parker (301) 229-2578 | MS Basic | Raymond Hobbs (301) 490-7484 |
| General | Tom Nebiker (216) 867-7463 | Math/OR Applns. | Mark Pankin (703) 524-0937 |
| Hayes Smartmodem | Bernie Benson (301) 951-5294 | Monitor, RGB | John Day (301) 672-1721 |
| MDM | Joe England (7-10) (301) 953-1949 | Operating Systems | |
| Robotics Modem | Joan B. Dunham * (301) 585-0989 | Apple DOS | Richard Langston (301) 869-7466 |
| SeriAll Comm. Card | Joan B. Dunham * (301) 585-0989 | | John Love (703) 569-2294 |
| Smartcom I | Harmon Pritchard (301) 972-4667 | CP/M | Richard Untied (609) 596-8816 |
| VisiTerm | Steve Wildstrom (301) 564-0039 | | Raymond Hobbs (301) 490-7484 |
| XTALK CP/M Comm. | Bernie Benson (301) 951-5294 | ProDOS | Leon Raesly (301) 460-0754 |
| Computers, Specific | | | Richard Langston (301) 869-7466 |
| Apple //c | John Day (301) 672-1721 | Printers | John Love (703) 569-2294 |
| | Scott Rullman (301) 779-5714 | General | Walt Francis (202) 966-5742 |
| LISA/Mac XL | John Day (301) 672-1721 | | Leon Raesly (301) 460-0754 |
| | Don Kornreich (301) 292-9225 | | Joan B. Dunham * (301) 585-0989 |
| Macintosh: | | | Joe England (7-10) (301) 953-1949 |
| General | Steve Hunt (301) 262-9080 | AJ 831 series | John Day (301) 672-1721 |
| | Scott Rullman (301) 779-5714 | Apple Color Plotter | John Day (301) 672-1721 |
| | Donald Schmitt (717) 334-3265 | Apple Daisy Wheel | Bill Etue (703) 620-2103 |
| Chart | Rob Clark (804) 850-2016 | Daisywriter 2000 | Henry Greene (202) 363-1797 |
| Comm. & Modems | Terry Monks (703) 471-4610 | | Jeff Stetekluh (703) 521-4882 |
| Concertware | Steve Hunt (301) 262-9080 | IDS 460 | John Day (301) 672-1721 |
| Digitizers | Skip Horvath (703) 536-4091 | Imagewriter | Jeff Dillon (301) 434-0405 |
| Excel | JoAnn Stewart (703) 527-4072 | MX-80 | Bill Mark (301) 779-8938 |
| File Vision | David Morganstein (301) 972-4263 | NEC 8023 | Michael Proffitt (301) 874-2270 |
| Hard Disk | Steve Hunt (301) 262-9080 | Okidata | Dan Robrish (301) 530-4202 |
| Helix | David Jamison(day) (301) 589-8841 | | Phil Leber (703) 378-4391 |
| | Jim Berry (703) 662-0640 | Scribe | Bruce Field (301) 340-7038 |
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| | Jon Hardis (301) 330-1422 | Spreadsheets | Walt Francis (202) 966-5742 |
| | Don Landing (703) 690-1010 | Lotus 1-2-3 | Walt Francis (202) 966-5742 |
| Lang.-C,Pascal,XLisp | Carolyn Komada (703) 691-1986 | | Raymond Hobbs (301) 490-7484 |
| MacDraw | Tom Berilla (301) 434-3256 | Multiplan | Terry Prudden (301) 933-3065 |
| MacLion (DBMS) | Mark Miani (202) 362-8123 | VisiCalc | Walt Francis (202) 966-5742 |
| MacProject | Jay Lucas (703) 751-3332 | Sprdsht. 2.0(MagicCalc) | Leon Raesly (301) 460-0754 |
| MacTerminal | Jon Hardis (301) 330-1422 | SuperCalc Ver. 2.0 | Leon Raesly (301) 460-0754 |
| Multiplan | John Boblitz (301) 356-9384 | Stat. Packages | Mark Pankin (703) 524-0937 |
| | Don Landing (703) 690-1010 | | David Morganstein (301) 972-4263 |
| | Steve Hunt (301) 262-9080 | Stock Market | Robert Wood (703) 893-9591 |
| | Walt Francis (202) 966-5742 | Time-Sharing | Dave Harvey (703) 527-2704 |
| Multiplan/Chart | Bob Pulgino (703) 379-0512 | Word Processors | Walt Francis (202) 966-5742 |
| MusicWorks | Skip Horvath (703) 536-4091 | Apple Writer II | Dianne Lorenz (301) 530-7881 |
| OverVue | J.T.(Tom) DeMay Jr. (301) 779-4632 | | Leon Raesly (301) 460-0754 |
| Spreadsheets | David Morganstein (301) 972-4263 | Format II | Henry Donahoe (202) 298-9107 |
| Sidekick | Raymond Hobbs (301) 490-7484 | Gutenberg | Neil Muncy Can. (416) 298-3964 |
| Word | Marty Milrod (301) 464-2154 | & Jr. | Harris Silverstone (301) 435-3582 |
| Data Bases | | Letter Perfect | Leon Raesly (301) 460-0754 |
| dBase II | Paul Bublitz (301) 261-4124 | Magic Window and II | Joyce C. Little (301) 321-2989 |
| | John Staples (703) 759-3461 | Peach Text | Carl Eisen (703) 354-4837 |
| dBase II & III | Raymond Hobbs (301) 490-7484 | PIE Writer/Apple PIE | Jim Graham (703) 643-1848 |
| | Jim Kellock (day) (301) 986-9522 | ScreenWriter II | Peter Combes (301) 251-6369 |
| | Leon Raesly (301) 460-0754 | | E. E. Carter (202) 363-2342 |
| DB Master | Dave Einhorn (301) 593-8420 | Supertext II | Peter Rosden (301) 229-2288 |
| Data Perfect | Leon Raesly (301) 460-0754 | Word Handler | Jon Vaupel (301) 977-3054 |
| Data Factory | Bob Schmidt (301) 736-4698 | Word Juggler //e | Carl Eisen (703) 354-4837 |
| General Manager | Normand Bernache (301) 935-5617 | Word Star | Joe England (7-10) (301) 953-1949 |
| | Leon Raesly (301) 460-0754 | | Dana Reil (301) 350-3283 |
| List Handler | Jon Vaupel (301) 977-3054 | | |
| PFS | Bill Etue (703) 620-2103 | | |
| | Ginny Spevak (202) 362-3887 | | |
| QuickFile II | J.J. Finkelstein (301) 652-9375 | | |

* Calls up until midnight are ok.

APPLE /// SIG News

by Charlene Ryan

The news of the hour is our Apple /// ABBS. Carl Bowman has agreed to be our SYSOP and Dave Ottalini will assist as a backup. Bill Rosenmund, Dave Ottalini and I will rotate attendance at the committee meetings, just to represent the /// group and get our two-cents worth in, and also be a part of things. They were very glad to hear that we were interested. Tom Warwick likes the Apple /// too.

Our Pascal Tutorial (we learned not to put the word in all caps like other program acronyms because the language is named after the man who invented the concept of deductive logic) went very well. I, for one, now know how little I know of the language and will continue to attend the classes. The next one will be on Monday night, December 2, 7:30 PM, at the Apple Pi Office. If you know the beginnings of Pascal and would like to jump into the tutorial at the middle, come on down (up?).

I have a complaint to make. It's a complaint about a certain store. For some time I've heard negative comments about this store from potential and actual customers. The store is "Printers Plus." It's a small place in a nonconspicuous spot, and you would probably miss it if there wasn't a huge sign with an arrow pointing to the entrance. The place is small, but there are printers from wall to wall, and on the floor. Some are connected to computers, but many are not. Paper is sitting under platens displaying various types of printed products. There are many brands on display, some you can't even pronounce, never mind ever hearing of the brand, and of course, there are also the familiar products.

My complaint is with the sales person's obvious discouragement toward the customer's interest in Imagewriter or Epson brands and encouragement toward some of his "off the wall" brands. There is nothing wrong in that, but the customer is told falsehoods, such as, "The Imagewriter is 'terrible near letter quality', and that bargain (unpronounceable) brand is 'just like an Epson underneath.'"

One friend discovered through long distance phone calls to the manufacturer that his printer wasn't even close to an Epson after all, and another friend was goggle-eyed when he discovered what 'terrible near letter quality' from an Imagewriter really looked like during one of our Apple meetings. Other complaints about this particular place involve the sales person's rudeness - especially if you ask an intelligent question, such as, "Did this printer print out what I see on the paper in the roller?" Or, "Will this printer work on my computer?" When the "off the wall" printer is sold to you from this place, there is little or no after-sale assistance when you have problems (notice I said "when"), and there appears to be no return policy if you're dissatisfied.

Communication between your computer and printer can be extremely complex. If you are not familiar with or don't want to get into DIP switches, serials or parallels, cables, parameters, stick to products that have been proven in the configuration you are attempting to complete. Your favorite software packages usually have several different printers all set up for you, and at least one of them was the very one the author


probably used to test his product. Some software packages don't have the capability to do everything your "off the wall" printer is claimed to do. We have great letter quality printers where I work that do graphics, but we can only see them work with the test button. We have no software on the computer that the printers are connected to that address the graphics capabilities. I'm not completely degrading these products. They are less expensive, and do have many nice-to-have features.

I think what really triggered the decision to write about Printers Plus is the ad I saw in the paper last week. They are opening another store. If you do see something there you would like to own and you need to ask questions, check out the answers with another dealer or knowledgeable friend first. It's worth the trouble, and it may save you a lot more trouble.

October's meeting was election night. We reelected Bill Rosenmund to be group leader, and Dave Ottalini will be co-chairman. Dave was absent from the meeting this month. I don't think he has missed a meeting in a year! Missed you Dave, and thanks for taking on the job with Bill. Thanks to Bill too.

Bill has taken on the task of negotiating with the George Washington University to donate an Apple /// to the Washington Apple Pi Office. There isn't one there, and they are now cheaper than Apple //e's!

November's meeting will be on the 14th. This column will be submitted for the December issue of the Pi before the meeting takes place. We will try to get all the hot news on the Bulletin Board, since the majority of us have modems. Get involved. You will need a new password even if you had an old one. They changed those rules when they gave us our own piece of the Pi. December's meeting is scheduled for December 12. I still haven't changed the meeting nights yet. The front office has some new ideas about the SIG meetings. They are thinking about having a general meeting every 4th Saturday, which may then break up into mini-meetings after all the business. This can eliminate Thursday night meetings altogether or be in addition to them. But this column will still keep coming as long as you want it. Until next time. ☺



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APPLE /// NEWS

by David Ottalini, Apple /// Sig Co-Chairman

Probably the most exciting information to hit Compu-Serve lately has been an indication from Apple that it will be placing a number of /// software products into the public domain. Business Basic version 1.23 and the latest Pascal update have already made it (thus we can now truly have self-booting disks for our disketeria). The Apple][tech on MAUG who cares enough to help out ///ers says an announcement will be made soon about what will be released. Hopefully, we can get some of it for our own disketeria.

What do you folks think of the first few editions of the /// Magazine? It took forever for my first edition (September) to come. In fact, it arrived the same day that the October edition arrived. So far, each edition has a "theme"; the first was /// Communications, the second, "Back from the Dead." It costs \$40.00 per year 2nd class, \$50.00 for first class. The publisher is Frank Moore. He recently indicated on MAUG that he is looking into the purchase of a laser printer and hard disk, which indicates a desire to keep improving things. The extra hardware will also be to help with his "/// Unification Project" designed to compile a data base of all known /// owners and users.

The Titan ///+][e card will cost \$499.00, \$399.00 (plus shipping) as an introductory price from Sun Data (who apparently has exclusive rights to sell the card). It is a two-card system giving your /// total][,][+ and][e compatibility (128K), 40/80 column switchable, have upper and lower case, a 128K SOS ram disk in /// native mode, 192K ProDOS ram disk in emulation (256K ///s), serial port, and clock/calendar in ProDOS. The numeric keypad will work in ProDOS or DOS and there are provisions for high and double hi-res graphics and composite color. The Third Apple Users Group (TAU) was trying to put together a group purchase (with commitments made by the middle of November) if they could get a minimum order of 50 of the cards. Their group price was quoted as being \$355 plus shipping..only a little less than what Sun Data was selling it for. If TAU is able to put things together, then delivery would be in early December (about the time you read this). If the interest continues, there will probably be more group purchases. Stay tuned.

If you are frustrated at being unable to get Apple /// Business Graphics to print to your Imagewriter printer (it supports only a limited number of printers unless you have a special and hard-to-get "PIK" program to upgrade the printer-driver for the Imagewriter) remember that the graphs are saved as fotofiles...Member Al Lambert reports he's had success pulling them into Draw On /// and printing from there.

The new WAP BBS System 1 has an Apple /// board on it (#6). If you haven't gotten a password yet and logged on, lets get together! We'll primarily be swapping information but there are library files you can download from.

How about some more articles on the /// for the WAP Journal? What I'd like to see are articles from some of you business users out there. How do you use your ///, how does it contribute to your operations, how do you get the most out of it and how did you overcome any problems? The /// was

(and remains) Apple's best attempt at a business machine and by some estimates still has a good 10 years of life left. Let's hear how you are using it!

I know I said last month that On Three had indicated it would be printing again soon. I also know I have yet to see anything. But on MAUG recently there was some additional info I will pass along here: December is the target date for the next issue. A /// version of the new 3.5" UNIDISK will be offered. It's double-sided, double density with 800K storage (I wonder how big the Bibliography would have to be to fill that up!). Reportedly, they are also coming out with a version of Sidekick with calculator, etc. On Three also has a /// version of the 10 meg Sider Hard Disk with driver for \$995.00 (it requires a special interface card).

I've been hearing lots of great things about D.A. Datasystem's Power Keys Program. Everything I've read about this Macro has been more than positive. The company has many other excellent programs for the /// as well. A good place to check out what is offered is by calling ///'s Company, a ///-exclusive BBS in Norfolk, Virginia. No password required. Ed Gooding, the SYSOP, invites all interested to call 804-747-8752. It's 300/1200 baud, seven bits, odd parity and full duplex. ☺

MINUTES

SUMMARY OF OCTOBER BOARD MEETING

The Executive Board of Washington Apple Pi, Ltd. met on October 9 at the WAP office with President Tom Warrick presiding. The Board moved to officially name Gena and Bernie Urban as joint "Office Managers". A subcommittee was set up to draft guidelines for main meeting presentations. Another subcommittee would study the structure of main meetings so as to hold Apple // and Mac meetings on the same day. The Board voted to recommend to the membership the immediate purchase of a Limelight video projector, with the understanding that newer machines would be considered next year.

OCTOBER GENERAL MEETING

Washington Apple Pi met at Northwood High School at 9:00 AM on October 26th.

A Q&A session by Bruce Field and Tom Warrick was followed by a demonstration of recent products by Bill Holt of Broderbund Software. Mike Ungerman and George Kinal led a Telecom SIG demonstration of techniques and on-line sources. The business meeting included a demonstration of the Limelight, Electrohome, and Hughes Light Valve video projectors. A Board recommendation to buy a Limelight projector immediately, with a view to examining the situation next year, was accepted by the membership with a vote of approximately 200:30.

Bill Holt showed further products from Broderbund, and Clinton Computer and Computer Service Center demonstrated new Apple products. ☺

AN APPLE /// BIBLIOGRAPHY OF OPEN APPLE GAZETTE

by David Ottalini,

Well! The Apple /// Bibliography is up to 89K at this writing and growing. A little more slowly than in past months but growing nevertheless. During my discussions with Al Lambert about how to release this information to you, we've decided that the /// Disketeria will receive an update of the Bibliography every six months or so. That way, you will be able to use the information and not have to worry that your disk was updated the day after you purchased it.

The Bibliography project has grown much larger than I ever thought it would, and certainly it contains more articles than I thought ever really existed for the /// (although compared to the][or the Mac there is still no contest...). At last count it was up to 640 articles!

Anyway, this month's bibliographic listing is for another magazine/newsletter that bit the dust some time ago. I mentioned it last month...the Open Apple Gazette. It was the publication of the Original Apple ///rs in the San Francisco Bay area. You may recognize that group...we will have a couple of their public domain disks in the /// Disketeria.

The Original Apple ///rs were indeed one of the original Apple /// user groups. Don Norris was its president and publisher of the magazine. All told, the group managed to publish nine editions. It ceased publication in March, 1984. It's hard for me to say just what happened to the Original Apple ///rs, except that the group disbanded. By the November edition of the publication, the organization's name had changed to the Business Apple Group (although the Original Apple ///rs logo was still there as well). BAG also died and was succeeded by the Apple Three Users of Northern California (ATUNC), which got started in July of 1985. If I remember what an ATUNC member told me awhile ago,

politics and the loss of support for the /// by Apple was what contributed to the end of the earlier two groups.

In any case, there are a number of excellent articles in the Gazette. I have donated a complete set to the WAP Office for all to read and enjoy. I had mentioned last month that I was unsure which address Don Norris could be located at. That question was resolved when the set of Gazettes I had ordered finally arrived from the Clayton, Missouri address. Norris says you can still get back copies for \$30.00. He also says he plans to begin publishing a new version of the magazine again and is asking \$45.00 per year for a quarterly publication. However, I would say don't waste your money until we really see something in hard copy. Better to support Frank Moore and his /// Magazine (for which he is asking for renewals now to see if he will continue publication).

Note that in the following listing, I have designated Norris as the author in all cases where, in the publication, there was no author listed. Otherwise, everything should be self-explanatory.

As an additional note, the ATUNC Newsletter is an excellent publication, and you can join that group for \$20.00. Their address is 220 Redwood Highway #184, Mill Valley, CA. 94941. A listing of their articles is also in the Bibliography and a copy of all their back issues is on disk and in our Disketeria. I've been working on a "Best of ATUNC" disk and will have it ready for Al shortly. I'm also hoping to get complementary copies of the newsletter sent to the WAP office. ATUNC's Newsletter has been reprinting a couple of this author's articles in recent editions, by the way.

Open Apple Gazette back issues are available from: Don Norris, 516 South Hanley, Suite 660, Clayton, MO 63105.

contd.

WASHINGTON APPLE PI BULLETIN BOARD SYSTEMS

Bulletin Board Operator Leon H. Raesly, L.C.S.W.
SYSOP Emeritus Tom Warrick
Special Consultant Barry Fox
Hard Disk Consultant Dave Harvey
Programming Consultant Rich Mlodoch
Library files Programmer Mike Ungerman
BBS Files List SYSOP Jack Mortimer
Group Purchase Files SYSOP... Rich Wasserstrom
Indexing Committee - Chairman. Emil Levine
Member Bonnie Walker
Member Jeff Berger

SYSTEM 1 (986-8085) SYSOP.. Joe Chelena
Hardware, Software, General &
Lafayette Park Boards SYSOP. Joe Chelena
CP/M Board Board SYSOP Joe England
dBASE II Board SYSOP Nick Veloz
Apple /// Board SYSOP Carl Bowman
Comments/Sugs. Board SYSOP. Lee Raesly

SYSTEM 2 (986-8086) SYSOP.. Larry Half
MAC Hardware, Software, &
Gossip/Misc. Boards SYSOP.. Larry Half
Telecommunications &
Telecom SIG Board SYSOP ... George Kinal
Games/GameSIG Board SYSOP. Ron Wartow

BASIC Prog. Board SYSOP..... Mike Ungerman
AppleWorks Board SYSOP Ken De Vito
Comments/Sugs. Board SYSOP. Lee Raesly

SYSTEM 3 (986-4715) SYSOP.. Mike Ungerman
Passwords Board SYSOP Mike Ungerman

SYSTEM 4 (871-7978) SYSOP.. Lee Raesly
The Classified SYSTEM - Hardware, Software,
Misc. & Employment & Pi Officers/Volun. Boards

SYSTEM 5 (890-8984) SYSOP.. Alice Allen
The Journal & Indexes SYSTEM

SYSTEM 6 (703-450-6822) SYSOP
..... John A. Gersic
(The Manassas/Great Falls Slice SYSTEM)
Hardware Board SYSOP Bruce Johnson
Sftwr., Misc., Gossip SYSOP.. John A. Gersic

BBS Committee - Charirman Lee Raesly
Members - Joe Chelena, Mike Ungerman, Barry Fox,
Dave Harvey, Larry Half, Marty Milrod, Emil Levine,
Dave Helfrick, Joan Dunham, Tom Warrick
& YOU, if you attend!

| SUBJECT | TITLE | AUTHOR | VOL.# | MONTH | YR | PG(S) |
|-------------------|--|--------------|-------|---------|----|---------|
| APPLE /// | FAITH HOPE AND CHARITY | HOCKABOUT | 1 2 | MAY/JUN | 82 | 12-13 |
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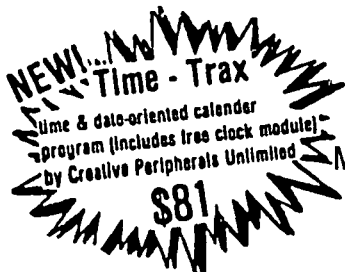
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DISK /// WRITE PROTECT BYPASS

by Ed Gooding (Three's Company BBS)

(Reprinted from Apple Three Users Group of Northern California (ATUNC) Newsletter, August 1985, Vol. 2 # 8.)

Bypassing the Write Protect Switch on the Disk ///

This is a tutorial on how to bypass the write protect switch on an external Disk /// drive. The same principles could be applied on the internal drive, but it is not recommended since this is a potentially disastrous modification (meaning that if you forget to turn off the switch, you could bomb a good disk, which is usually a program in the internal drive). Note also that these modifications could probably be applied to a Disk II drive, as well.

Parts and Tools You Will Need:

Note: All these parts were purchased at my local Radio Shack.

- 1) One Subminiature LED Indicator Lamp Part# 276-068. Price is \$1.59.
- 2) One Subminiature DPDT Toggle Switch Part# 275-614. Price is \$2.19. Note: You could probably use a SPDT, but I already had this one laying around.
- 3) One Experimenter Box (3 1/4 L x 2 1/8 W x 1 1/8 D) Part# 270-230 @ \$1.59. You can use something the equivalent of this if you want.
- 4) One 1/2 watt, 470 ohm resistor Part# 271-019. Price \$.19.
- 5) 22-24 gauge wire (multi strand is best, it withstands bending).
- 6) Rosin core solder and a 25 watt soldering pencil.
- 7) Phillips screwdriver and Allen wrench set.
- 8) Some double sided tape or velcro strips to attach the box to the drive.

This hardware modification will require limited electronic soldering experience. You will have to make about ten solder connections, most of them with easy access. This mod will surely void your warranty, so wait until it is expired before you do it.

Instructions:

- 1) Remove the cover from your drive to expose the analog card (of course you remembered to turn off the power to your /// first, right?)
- 2) Use a small Allen (or hex) wrench to remove the write protect switch so you can get to the back of it to make your first two solder connections. The switch is located at the left-front side of the drive as you look at it. When you remove the cover, you will see the two small Allen screws that attach it to the side of the mechanical assembly. One of these is slotted to allow you to adjust the sensitivity of the switch. You will see the little spring switch on top of the switch assembly that is depressed by a diskette that has no write-protect notch or has its notch covered. This is how it is activated when you slide the diskette into the drive. You've probably heard the slight click before when you have inserted or removed diskettes.
- 3) Cut three lengths of wire about 12" long and strip 1/4 inch of insulation from both ends of each. Solder one wire to each connection on the write protect switch (two of them) where there is a wire already present (the brown one is ground, mark the new wire you are soldering to it at the end opposite from the end being soldered).
- 4) Now we need to get some power for our LED light.

Locate the resistor at location R14 on the analog board. It is located in a group of like looking resistors (they look like multi-colored tubes a half inch long with wires at both ends soldered into the analog board). Solder another 12" length of 22 gauge wire to the wire on the end of the resistor that is closest to the adjacent 74LS74 chip (the other end of the resistor won't give you any juice). Solder the 470 ohm resistor to the other end of this 12" wire. This will cut the voltage to the LED down to the necessary amount required to power the LED properly.

5) Route the wires out the back of the drive around the edge of the back plate. They should come out slightly below the ribbon cable connector on the drive. I routed mine around to the left front of the drive (as you are looking at it). I mounted my switch box on the left side. I did mine this way to avoid drilling any holes in the cabinet. You could do it this way and avoid using the experimenter box if you want.

6) Remove the bottom from the project box. Drill two 1/4" holes in one end of the box wherever it looks good to you. These will be used to mount the LED light and the switch. I mounted my LED above the switch. I thought it would be easier to see this way. Use the drill bit to make a half-moon notch on the other end of the box at the edge where you screw the cover on. You will route the wires through this hole. Mount the LED and tighten the mounting nut. Do NOT mount the switch yet.

7) Solder the wire with the 470 ohm resistor to the longer of the two wires on the LED light. That one is the positive one. Cut a two inch length of 22 gauge wire and strip 1/4 inch of insulation from both ends. Solder one end of this wire to the other, shorter wire on the LED. This will be used to connect the LED to the switch so that it will only light when the switch is on.

8) Solder the positive wire (now you see why we marked the ground wire earlier) to the top-left post on the DPDT switch. Solder the ground wire to the center-left post on the switch. Cut a one inch length of 22 gauge wire and strip 1/4 inch of insulation from both ends. Solder one end of this wire to the same post that you just soldered the ground wire to. Solder the other end of the wire to the center-right post to ground both sides of the switch.

9) Now place the switch inside the project box and push the threaded shaft through the hole below the LED. Screw on the washer and nut to hold it in place. Now for the last solder connection. Solder the loose end of the wire from the shorter of the LED wires to the top-right post on the switch. This will cause the LED to light when the switch is on.

10) Route the three wires through the half-moon hole at the other end of the box and place the box cover in place. Insert and tighten the four holding screws. Attach either the double-faced tape or velcro strips to the bottom of the box and attach the box to the disk drive wherever you feel it will be easiest for you to access it. You can store any excess lengths of the three wires inside the box for a neater look if you wish. I also used electrical tape to wrap the three wires together to further insulate them and to keep them from dangling separately where they might catch on something.

11) Now for the big test. First, power up your Apple /// and turn on the write-protect override switch. If the connections are correct, the LED should light up. If not, you will have to recheck all your solder connections. Next, cover the write protect notch on a diskette or turn it over on its flip side and place it in the disk drive. Boot up the System Utilities and try to initialize or copy to the so-called write

contd. on pg 78

EDSIG NEWS

by Jean Thomas

EDSIG Calendar

Thursday, January 23, 1986 at 7:30 PM.

Subject to be announced.

There will be no meeting in December. All EDSIG meetings are held in the Washington Apple Pi office at 8227 Woodmont Avenue, Bethesda, MD.

Meeting Report

Thursday, October 24: "Creative Writing with the Apple".

The October meeting was a workshop in ways to use word processing to stimulate creative writing. I (Jean Thomas), English teacher at the Madeira School, led the session. The first exercise was to create a scene for a work of fiction. With word processing, the usual tendency to start at the beginning can be abandoned. We started in the middle of the scene and built outward. The first step was to create dialogue between two characters who are in some kind of conflict. In successive steps, the context for the dialogue was added. Descriptive verbs, revealing gestures, and eventually place descriptions were written in stages. Our session was a model of what could happen in a classroom, with the teacher prompting and the students responding. The "students" at the workshop responded with considerable enthusiasm and talent. We had two people at a computer, using different word processing programs. In a real classroom, one student per computer is desirable.

The exercise was intended to show how to create a fictional scene in a way that writers accustomed to "beginning at the beginning" might not otherwise think of. Building up characterization in increments is much easier with word processing. By isolating several steps, it is possible for a teacher to emphasize the following elements of fiction: the use of conflict as the germ of a story, revealing character through concrete actions rather than through abstract explanation, and the creation of point of view through sympathy with one character.

We briefly tried a second exercise in creating an extended metaphor to describe the computer. The exercise could evolve into either a prose passage or a poem. Judging by the originality of the participants writing, exercises such as these can indeed spark creativity.

The most powerful use of word processing to teach writing is still in combination with an imaginative teacher. Programs which prompt students in their writing - expository or creative - are still quite clumsy and cannot respond to the actual content of the students' work. But lessons which combine teacher and word processor can both speed up and dramatize on the screen many creative writing techniques.

I am developing several of such writing activities for the classroom. They will appear in a column in the Newsletter of the Assembly for Computers in English, a special interest group of the National Council for Teachers of English. Anyone interested in the Newsletter may join the ACE by writing Jack Jobst, Humanities Dept., Michigan Technological University, Houghton, Michigan 49931. The fee is \$5.00.

I would appreciate hearing from any teachers who have developed related methods in teaching writing with word processing. My phone number is 538-5107. ☺

Looking for an IBM-compatible personal computer?

Despite the obvious charms of the Atari ST, Macintosh, and Amiga, growing numbers of people are buying IBM computers and compatible equipment. Let's face it: for many computer users, IBM technology is the standard.

Wait a minute, Applefan. Before you bellow another curse into the night about the mindless "IBM-knows-best" attitude, before you launch into yet another sermon on the superiority of 6502/68000 technology, consider this:

Regardless of how much you (and I) love Apple, the fact is that most software development taking place now is in IBM software. IBM's may not be much fun, but they get the job done, by brute force if necessary, because of the wealth of software available for them. And you may not be aware that a great deal of good IBM software is inexpensive or free.

Now you can own a much-improved version of the IBM PC/XT and still crow about how much better—and cheaper—your system is than an IBM. Purists take note: it won't contain a single component made by Big Blue!

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Q & A

by Bruce F. Field



I recently received some more information on printing from MousePaint. Dark Star Systems of Greenford, England has introduced a product called MousePrintz which not only lets MousePaint users print their pictures directly to any dot-matrix graphics printer but has some other features that can be selected from a menu. Full-screen viewing of the current picture, on-screen image inversion, on-screen mirror image, on-screen cropping, independent expansion of the horizontal and vertical screen axes, shading, fast centering and adjustment of the left and right margins are some of the many features. The user's copy of MousePaint is patched by inserting it into the disk drive after MousePrintz has been booted. From that point on, MousePaint will boot every time with the MousePrintz menu co-resident. The program has a suggested retail price of \$35 and is available from the US distributors, Greengate Productions, 2041 Pioneer Court, Ste. 15, San Mateo, CA 94403, tel. (415) 345-3064, Source mailbox: BCH101.

Q. I am having difficulty with the serial interface of a Pixy 3 plotter and a Mountain Computer CPS multifunction card. I am able to operate the plotter with pins 1,2,3,7, and 20 of the Pixy wired to pins 1,3,2,7, and 20 respectively on the CPS card, with pins 4 and 5, and 6, 8, and 20 jumpered together on the CPS card. However, with this configuration the buffer will overflow with a resulting loss of data and a ruined plot. I would appreciate help in preparing an RS-232 cable which takes advantage of the Pixy's ability to tell the serial card that the buffer is full.

A. As you have discovered, connecting a serial device to a serial port is not quite as straightforward as using a parallel interface. As a reminder to our readers (before I actually get around to answering your question), it is generally not possible to buy any RS-232 cable and expect it to work between any two serial interfaces. It is also not usually possible to simply connect all 25 pins on one interface to the exact same 25 pins on the other interface. Two problems can arise. Both interfaces may transmit data on pin 2 and receive data on pin 3. If this is the case the cable will have to be wired so that pin 2 on one end goes to pin 3 on the other and vice-versa. You have apparently already discovered this, as pins 2 and 3 are already reversed. This is verified by the fact that you are getting some data to the plotter. If the pins were wired up wrong, no data would get to the plotter. The second problem is that manufacturers have not standardized on exactly which pins are to be used for handshaking, i.e. telling the other device when to, and when not to, send data. This can only be determined by scrutinizing the specification sheets for the interfaces and then giving up and trying every possible combination anyway. For the Pixy plotter pin 19 is used as a busy flag; it is at a high level when the plotter is ready to receive data, and low when the plotter is busy. You need to connect this to the Clear To Send (CTS) input on the CPS card, pin 5. But you must also remove the jumper from pins 4 and 5 on the CPS card. Pin 4 on the CPS card (RTS, or Ready To Send) is an output and so is the Ready (pin 19) on the plotter. You should not connect two outputs together, thus remove the jumper from pin 4 and leave it unconnected. Similarly pin 20 from the Pixy which is an output should not be connected to pin 20 of the CPS card, leave pin 20 from the Pixy unconnected.

Q. Do you know if there are any parallel to serial converters, that would allow the use of a parallel printer card on the //e to be used with the Imagewriter II, which is a serial printer?

A. I know of one company that advertises a parallel to serial converter, although before buying it I would ask the company if it works with your specific printer card and the Imagewriter. The company is Tigetronics, 2734-C Johnson Dr., P.O. Box 3717, Ventura, CA 93006, tel. (805) 658-7466. The unit costs \$89.95 plus shipping.

However, before going this route I would consider purchasing a new serial card. One of the Super Serial card clones can probably be had at about the same price as the converter and some of the cards are available with built-in graphics dumps. If you sell your old parallel card the total cost might be less.

Q. I have an older 64K Apple //e with an 80 column text card and a Rev B motherboard. Do I have to change my motherboard to the newer CMOS technology (and make it like my newly-acquired //c) in order to add Applied Engineering's Ramworks cards (or any other 80 column + additional memory cards)? I do not want to be limited in the amount of memory I can add--does that restrict me in any way?

A. You don't have to make any changes to your Apple //e to use the Ramworks or other extended 80-column cards. The card will replace the 80-column card you currently have in your auxiliary slot. The 80-column function of your //e is built into the ROM (read-only-memory) on your motherboard, the //e 80-column card only contains memory. Therefore changing your 80-column card will not change the way it works, or the display quality.

You might also take a look at Apple Computer's new Ram card that has up to 1 megabyte of memory. This card is unlike, and is incompatible with, the Ramworks card but it can be used in Apple][,][+ and //e computers. Since this card has the blessing of Apple, software developers may write new software to use only this card so that it becomes a standard for add-on memory.

Q. I have an Apple //e with six slots filled. All went well until I placed a 576K MultiRam //e in the auxiliary slot. By trying various combinations of cards, I can be reasonably sure that it is a low power problem. Can you suggest a power pack that I could purchase that will significantly increase (double) the power output? To run cool, I mount the power pack outside the Apple case and I mount a fan in place of the power pack. Therefore, I do not need a power pack of the same dimensions as the Apple pack; just one that is plug-compatible.

A. At one time ALF Products Inc. (1315F Nelson St., Denver, CO 80215, tel. (303) 234-0871) offered an external power supply for the Apple to be used with multiple disk drives for mass copying of disks. I haven't seen their ads in quite a while so I don't know if it's still available.

Another solution is to use one of the readily available power supplies for the IBM PC/XT. These are available from a number of sources for about \$100, (see the back pages of any BYTE magazine) and have about twice the power of an Apple supply. The connectors are not plug compatible, but the connector can be cut off the Apple supply and spliced into the wires from the new supply without much difficulty.

Q. I own an Apple //c with an Epson RX80 F/T+ printer and am using an Epson serial interface mounted inside the printer. Since I bought the printer five months ago, on booting up my computer the printer defaults to italics mode and I am unable to get to normal mode. The only normal characters I can get are in the printer self-test! After about three months of unanswered letters and telexes to Apple

contd.

Computer and Epson, I managed to solve the problem by switching both the printer interface and the Apple interface to 7 data bits, 2 stop bits. In this configuration everything works perfectly. You can imagine my despair when my newly purchased AppleWorks refused to print (except garbage) with this configuration. I had no choice but to reset to 8 data and 2 stop bits - now Appleworks prints normally but all my other programs print italics.

A. There is a DIP switch in your printer that controls whether italics is the default typestyle. In an MX80 it is switch 4 on SW1. Also in an MX80 there are two switch blocks, SW1 has 8 positions, and SW2 has 4 positions. It is likely to be the same for your printer, but check your printer manual to be sure. It is definitely not normal for the printer to be in italics mode. A friend has successfully used a //c with an MX80 and a Hotlink serial to parallel converter by Orange Micro, and another converter by Street Electronics. I don't see off hand how the serial interface could be giving you this problem.

Q. In using Applewriter II on an Apple IIe (DOS 3.3) a major glitch developed some time ago. I discovered that often, as I typed, an occasional letter would not register on the screen. After a lot of experimentation, I found that the glitch developed only after I made a lot of deletions in paragraphs between carriage returns. If you can shed some light on this phenomenon and suggest a cure I would be mighty appreciative. Other Applewriter users in the neighborhood seem to be unaware of this glitch in the program.

A. I have also used Applewriter II extensively and have not had the problem you describe. I suspect the problem is the speed at which you are typing. It is possible for moderately fast typists to overtype the buffer in Applewriter and lose characters. One can also speculate that many modified paragraphs are spread around in memory and so it takes more time to manipulate the text or pointers and characters can be lost. Try typing slower and see if this helps. Another possible solution (I emphasize possible because I am not sure of the inner workings of Applewriter) is to upgrade your IIe to an enhanced IIe. The 80-column firmware has been re-written and operates more quickly. If Applewriter does use the built in firmware you should be less likely to lose characters.

Q. I have an Apple Super Serial Card connected to a Hayes Smartmodem 1200. My primary need is communication with the Chase Manhattan Spectrum system which requires 7 data bits, 1 stop bit, and no parity bits at 1200 baud. The only required change from the factory settings of the Hayes modem was to put switch 6 in the up position.

Everything works fine with the Spectrum software; however when I try to use the SSC in the terminal mode to access other services, I have problems. The computer goes into never-never land and the only way out is to reset. With switch 6 on the modem in the down position the terminal mode will function but the Spectrum software will not work. According to Hayes, this switch controls pin 8, the carrier detect lead. When the switch is down pin 8 is held "true" so that it always appears to the computer that a carrier is present. I would appreciate any help you can offer.

A. The problem is that the firmware on the SSC checks that a carrier is present before sending any data to the modem. Thus, you cannot use the terminal mode of the SSC to send commands to the modem unless you are already connected to remote service, OR you have the Hayes switch set down to fool the SSC into thinking you are connected. The Spectrum software appears to be just the opposite. The solution is to buy a communications programs that bypasses the SSC firmware. There are a number of such programs available, ASCII Express Professional and Transend II are two of the popular ones.

Q. I recently purchased two cards for my Franklin, a CP/M (generic) and an 80-column card (Viewmaster). My CP/M card came without any software. I asked the supplier and was told that they could not sell the software because of copyright protection, but that I probably could get what I need from a user group. Where can I get the software I need to run CP/M?

Before I purchased the Viewmaster 80-column card I asked Applied Engineering whether I would need a pre-boot to run Applewriter. They said that I would, but that AE didn't sell it. I would be able to get it from Videx, however. Videx told me that their pre-boot will not work with Applewriter using Viewmaster. Where can I get a pre-boot so that I can use Viewmaster?

A. CP/M is an operating system that was written by Digital Research. Usually it is supplied when you buy the Z-80 card. It is copyrighted and can be purchased from Digital Research but probably will cost several times the price of your board and may have to be customized (modified) to even work with your board. It's clear that the company you purchased the card from expected you to pirate a copy from someone who already had it. I wouldn't do business with such a company. The least expensive way out of your dilemma is to take advantage of one of the inexpensive boards that come supplied with CP/M. For a while Broadreach (505 Industry Drive, Seattle, Washington 98188, tel. 800-228-1080) was offering Wordstar (a very popular word processing program), CP/M, and an Appli-Card 2.0 CP/M board for \$164.95 plus \$8.95 shipping. Whether this offer is still in effect I don't know. Applied Engineering also offers a CP/M board with the CP/M system for \$139.00.

For your Viewmaster, Applied Engineering claims that it is totally compatible with the Videx 80-column card. If this is the case the Videx pre-boot for Applewriter should also work for the Viewmaster. Videx is probably not interested in supplying their pre-boot program so people can use other brand cards. Next time I suggest you simply purchase the program and refrain from mentioning what card you want to use with it. ☺

PIE ALA MODE A Slice of Washington Apple Pi by Tom Kroll

Pie Ala Mode meets on the third Saturday of the month at 9:00 AM at the Grange Hall in Great Falls, VA.

Information:

Tom Kroll (703) 368-1929

John Gersic (703) 430-6948

Upcoming Events:

December 21 - We will be holding our meeting at the Washington Apple Pi garage sale.

January 18 - Telecommunications.

In October, Lee Raesly showed us his Apple IIc with Applied Engineering's 512K Z-RAM. It not only expanded AppleWorks, but also Call-A.P.P.L.E.'s Spreadsheet 2.0, not to mention WordStar and dBase II using CP/M. It was amazing that a computer you can fit in your briefcase could be so powerful! Many thanks to Lee for his informative and practical demonstration.

In November we discussed using your Apple to make tax time a little easier. ☺

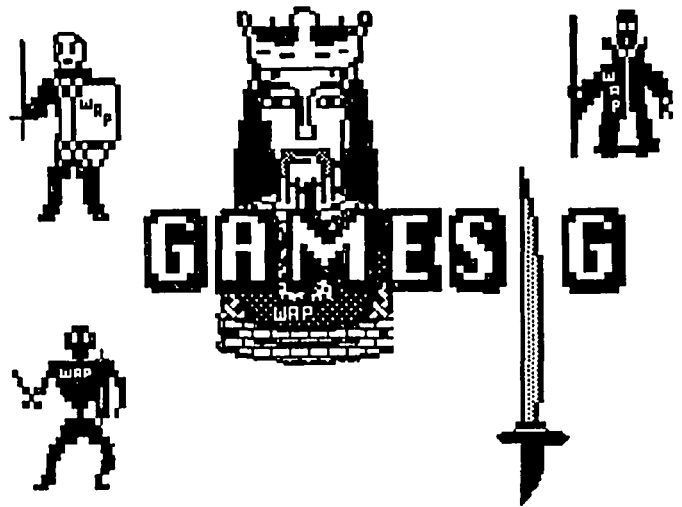
GAMESIG NEWS

by Barry Bedrick

Our November meeting, attended by about 35 members, began with a literal bang, along with whimpers, clicks, pings, and other assorted sounds. Dave Granite and his son, Steve, demonstrated their Mockingboard, both with its own sound effects software and with a few of the 30 or so games which use the Mockingboard, among them Skyfox and Ultima IV. The sounds were most impressive.

Those who had already played Ultima IV, only recently released, were uniformly enthusiastic. It will clearly be among the recommended games which the membership listed at this meeting, and which is published elsewhere in this issue. Speaking of Ultima IV, Ron Wartow recounted a conversation he had recently with Lord British (aka Richard Garriott). One result was that the club will be getting review copies of some Origin Systems games to be released in the near future.

Charles Hall received congratulations for "more or less" completing Time Zone in four months. Mindwheel for the Macintosh was received this month, and Steve Payne will



do the honors. Tom Johnston demonstrated a game he designed based on the GAMESIG party last summer at Paul Moore's house. Finally, the membership discussed the rumors of a forthcoming sequel to Pixel's Revenge, supposedly incorporating a variation of the original's famous kosher delicatessen puzzle.

Next month's meeting will be on Thursday, December 5, beginning at 7:30 p.m. at the office. ☺

GAMESIG'S SUGGESTIONS FOR PROSPECTIVE SANTAS

by Steven Payne

As the holidays approach, otherwise sober computer folk begin to consider gifts of recreational software for themselves and their friends. To help prevent unwise purchases, GAMESIG has assumed the solemn duty of sharing our hard-earned wisdom with other Apple Pi members. The following recommendations, divided into categories, were gleaned from the 30 to 40 people who attended our November meeting, using the most sophisticated modern polling techniques (i.e., a show of hands). Games are available for both the Mac and Apple II series unless otherwise noted (some for the Apple II series are slated to appear in Mac versions at a later date).

1. ALL-TEXT ADVENTURES

Recommended: Zork I (Infocom); Planetfall (Infocom); Enchanter (Infocom); Mindwheel (Synapse & Broderbund)

Not Recommended: Squabbling broke out over this category, so we followed the classic adventure maxim: "It's not important; leave it alone."

2. GRAPHIC ADVENTURES

Recommended: Time Zone (Apple II, Sierra On-Line); Alice in Wonderland and Below the Root (Apple II, Windham Classics); Adventure Construction Set (Apple II, Electronic Arts)

Not Recommended: Rendevous With Rama (Telarium); Expedition Amazon (Apple II, Penguin); Mask of the Sun and Serpent's Star (Apple II, Ultrasoft or Broderbund); Gemstone Warrior (Apple II, SSI)

3. CHILDREN'S/EDUCATIONAL

Recommended: Rocky's Boots and Robot Odyssey I (Apple II, Learning Company); Chipwits (Brain-Power); Where in the World is Carmen Sandiego? (Apple II, Broderbund)

Not Recommended: Any program with the word "educational" on the box

4. ARCADE

Recommended: Stellar 7 (Apple II, Penguin); Lode Runner (Broderbund); David's Midnight Magic (Apple II, Broderbund); Archon and Skyfox (Apple II, Electronic Arts); Pinball Construction Set (Electronic Arts)

Not Recommended: Championship Lode Runner (Apple II, Broderbund); Cannonball Blitz (Apple II, Sierra On-Line)

5. SPORTS

Recommended: One on One (Apple II, Electronic Arts); Computer Football (Apple II, SSI); Microleague Baseball (Apple II, Microleague Sports)

Not Recommended: Star League Baseball (Apple II, Gamestar)

6. WAR GAMES

Recommended: Carrier Force and Kampfgruppe (Apple II, SSI); Carriers at War (Apple II, SSG); Under Fire (Apple II, Avalon Hill)

Not Recommended: Midway Campaign (Apple II, Avalon Hill)

contd.

7. STRATEGY

Recommended: Sargon III (Hayden); Pensate (Penguin); GATO (Spectrum Holobyte); Flight Simulator II (SubLOGIC); Reach for the Stars (Apple][, SSG); Balance of Power (Mac, Mindscape)

Not Recommended: no agreement

8. FANTASY/ROLE PLAY

Recommended: Wizardry series (Apple][[Wizardry I is due shortly on the Mac], Sir-Tech); Ultima II (Sierra On-

Line); Ultima III (Origin); Ultima IV (Apple][, Origin); Phantasie (Apple][, SSI); Bard's Tale (Apple][, Electronic Arts); Sundog (Apple][, FTL Games); Pixel's Revenge (Parser ST Inc.)

Not Recommended: Temple of Apshai (Apple][, Epyx); Ghost Mansion (Apple][, Crystalware)

9. ALL TIME FAVORITE

A tie between Zork I (Infocom) and Wizardry I (Sir-Tech)

MACINTOSH

Wizardry

by Ronald Wartow

(Since I beta tested Macintosh WIZARDRY for Sir-Tech Software, this will not be a review. Rather, it is a description of this long-awaited program simultaneous with its release. A review will appear in a future Journal.)

WIZARDRY is now available for playing on your Macintosh. The program is a fantasy role-playing game involving the creation and development of individual characters, who, up to 6 at a time, and interacting frequently, explore a 4000-location maze (10 levels of 20X20 "rooms" which is a challenge just to map). The party uses magic and weapons against nasties in search of treasure, magical and conventional weapons and items, and a despicable wizard. The game has a plot, some puzzles, a noble goal, and took well over 50 hours to complete on the Apple // series.

This computer game has tradition. The original and its two sequels have sold hundreds of thousands of copies since the original release over 5 years ago. Still a bestseller, and having been translated into French, German, and recently Japanese, the series has been used extensively in schools and in psychological environments as teacher and curative, has been critically reviewed in scholarly journals, has spawned a cottage industry for maps, hints, and character enhancement disks (WAP 161, e.g.), and was consistently rated by SOFTALK as the most popular Apple program. The games are replayable and the deep personal involvement with your developed characters is one of the oft-written-about features.

For those of you who have played it before, the maze, goal, and spells are the same. However, many of the weapons and monsters are decidedly different, the maze has enhanced graphics to show stairs, elevators, and message squares, and lots of new features have been added. During beta testing, this made me feel as if I were playing an entirely new scenario. Adding to this feeling was the program's "devotion" to the Macintosh interface. Icons, windows, and shortcuts abound.

The game is principally mouse-run with parallel keyboard equivalents, which appreciably cuts down on game completion time. While adventuring, the default desktop contains (1) a party window where each character is represented by a distinctive insignia for his/her class (bold shield for fighter, open lock for thief, cross for priest, e.g.), (2) a swag bag for

holding items and moving items between characters., and (3) the maze window which can be enlarged or reduced. Double clicking on a character's insignia brings up a character information window with all the available commands (give item, [un]equip item, pool gold, honors earned, magic spells, identify, e.g.). Activating the "All characters in party" menu command results in an explosion of telescoping character information windows. Movement is by mouse with an arrow cursor which changes direction depending on its placement within the maze window.

When entering the castle's shop or hotel (icons, of course), highlighting the first party member will result in all 6 members marching in one after the other to take care of business. On encountering monsters, the desktop changes to party status, monsters and events & instructions windows. The monsters window contains graphics. When queried as to which monster group a particular character is to fight or "spell," the cursor, now a sword, can be clicked on the targeted monsters and the graphic inverts as the monsters "wince" from your attack. This ease of play surfaces constantly throughout all game routines.

Some of the new game's features:

• Statistics screen, a running database covering everything from playing time (session and total) to mouse clicks, monsters killed, experience points awarded, wins, items found, etc. The following partial "snapshot" is the actual screen from the initial beta version I worked on:

| | |
|------------------------|------------|
| # Game sessions | 108 |
| # Expeditions | 182 |
| # Encounters | 531 |
| # Wins (Amulet found) | 4 |
| # steps taken | 18979 |
| # doors opened | 2299 |
| # mouse clicks | 50201 |
| # keys pressed | 11066 |
| Elapsed Time : Session | 0:00:32:53 |
| Elapsed Time : Total | 2:07:18:03 |

contd.

- At a certain level, a character can become a Guild Master with special combat and magic advantages and the right to redesign his/her own insignia via "Fatbits."

- Upon defeating monsters carrying chests, a screen depicts what each character thinks they see. Thieves and priestly characters with "Calfo" ability are highlighted. Opening the chests is but a click away, and lousy spellers need no longer fear a trap springing due to typos.

- Combat and spell commentary is more vivid, e.g., "Tum Warik casts [any combat spell] and [any monsters] were electrocuted, frozen, vaporized, or asphyxiated." A Level 10 Ninja can "decapitate" one of your party members.

- Restart a party in the maze. (You can now quit the game on maze level 7 at 3 a.m. and go to bed without scurrying back to the castle.)

- For non-magical party combat, the famous "F(ight),F,F,P(arry),P,P,Return" is the default setup and is accomplished by merely clicking on an "Attack" dialog box.

- Casting spells in peacetime is only a double click away and in combat requires only typing in a few identifying first letters of a spell. You can even search for your available spells and magical items in the heat of combat.

- Backup characters utility directly on the scenario disk in

the castle.

- Mark location with a distinctive spot which makes mapping easier.

- Print character information sheets utility.

- Desk accessories, including the notepad.

- Screen Saver to prevent burn-in causing repeating screen inversions.

- Default desktop utility for setting up the screen anyway you want.

- Normal Macintosh "Edit" menu.

- Save the party state every 3 minutes.

- Disband party command, which instantly disbands the party on entering the castle.

Several familiar features of the original are absent. There is no camp, but I was never attacked just sitting around recovering from the last encounter. You cannot change a character's class except when a new level is reached. Age is not part of the statistics screen, although birthdays are announced when visiting the hotel. Finally, specific amounts of gold cannot be traded although the "Divvy gold" command permits gold to be divided equally among the party members.

In sum, the game is faithful to the WIZARDRY tradition.



EPSON PRINTER MAINTENANCE

by Merle Block

The Epson Company, the Mid-Atlantic distributor, and some of the local Epson dealers, sponsored a free check-up, lubrication, and timing clinic on dot-matrix printers. I took my Epson MX80 to Bohdan Systems in Gaithersburg, where "Dr. Chips" from Epson cleaned, checked, and lubricated my printer and answered my questions on maintenance. As the Epson Mx80 Instruction Manual has little maintenance information, it may help other WAP members if I pass on some of Dr. Chips' tips:

First, I had some address labels stuck under the printer platen, which Dr. Chips removed. To avoid getting labels stuck in the printer, he advised that when printing on self-stick material one should never (but NEVER) turn the platen in the reverse direction. He said that removal of the platen should only be done by one experienced in printer repair. (As I watched the procedure, I agreed that I would not want to undertake the operation. After taking off the platen, he used a spray to freeze the sticky goo from the labels, before scraping it off. Reassembly of the platen seemed to be very tricky.) I guess that everyone knows not to try to turn the platen knob, in either direction, unless the printer power switch is off.

Dr. Chips said that re-inking the ribbon is OK, if one uses only an "ink" that does not contain solids, and contains a good printhead lubricant. He also said that WD40 spray lubricant may be used to revitalize a ribbon, until the color on the ribbon is used up. (I've pried off the cover of the ribbon cassette, and without touching the ribbon put a very light spray of WD40 on the fabric. Too much will drip off and make a mess. If the fabric ribbon comes out of the cassette, one can get into a big and dirty problem to get it back in.

After spraying, I let the cassette sit about a week to allow the WD40 to soak in, and then ran it in the printer for at least a complete ribbon circle on a "work-in" operation.) Dr. Chips said that some of the less expensive ribbon cassettes have defective feed mechanisms that can stick and burn out the printer ribbon feed motor. He advised to turn the feed post on a new ribbon cassette with your fingers to assure that it does not stick, before installing.

Dr. Chips said that the line printing time in the forward direction should be approximately equal to the time in the reverse direction. If it is not, something is wrong, and the printer should be checked before an expensive failure occurs.

I asked Dr. Chips about the instruction in "The Print Shop" program, which states that the printer should be turned off to cool after about five minutes of operation. He said that this is not necessary, as an Epson printer has been run continuously for over a week, without printhead overheating. He cleaned the printhead with a Q-tip and a solvent, but did not give me detailed instructions on that operation. He said that replacement of the printhead, if required, can be done by the owner. That is a plug-in job which is covered in the manual.

Dr. Chips put a little solid grease on the rod that carried the printhead, and oiled the little gears that can be seen when the plastic lid is opened. In reply to my question as to what material is used, he said that it is something he brought with him.

Thanks to Dr. Chips, my Epson MX80 now works faster and with less noise than before he did his "magic", and I am sure that his advice will help me keep it running properly. ☺

VIEWS AND REVIEWS

by Raymond Hobbs

This month's reviews include products for both Apple and Macintosh ... and we have a book to look at, as well as the usual array of business, educational, personal and game software.

Apple II Section:

THE WIZARD'S TOOLBOX (Roger Wagner Publishing, Inc., \$39.95). Some months ago we published a review of The Routine Machine & Chart package from RW Publishing--it has been re-issued under the new title, Chart 'N Graph Toolbox--as an Applesoft programmer's assistant package. There are four packages in the RW Publishing arsenal, and The Wizard's Toolbox is one such. Like Chart 'N Graph Toolbox, it runs on all the Apple][series computers, and can be run under either DOS 3.3 or ProDOS. Using The Wizard's Toolbox is really quite easy for anyone who has some experience in Applesoft programming. One has but to include the Wizard's routines in RAM at the beginning of the session, then call those routines as needed when writing his or her own Applesoft code. The programmer may select only those routines that are useful in any particular application--it is not necessary to include the entire toolbox. Used in this way, it is a functional equivalent to a compiled language's runtime library--but one that is entirely customizable. The only other RAM overhead is a single line of code placed at the beginning of the final program, which represents the ampersand "hook" into the Wizard's machine language routines. An added benefit is that the routines may be used at command level as well as from program level, merely by including the single "hook" command. Briefly, let's look at the setup:

1. Insert the Wizard disk in drive 1. Type "EXEC AMPERSAND SETUP". This automatically writes the ampersand "hook" as line 1 of your "program".

2. Type "BRUN WORKBENCH". This calls up the Wizard's main menu of programming options. There are 10 options, including add commands, remove commands, moving routines between disks, loading and saving routines, listing and searching for commands, displaying a memory map, and quit.

3. Type "1" to select "ADD A COMMAND". Here you will be prompted to insert the disk that contains the Wizard's routines (which is already in drive 1 in this example), and to indicate either the routine name, or request a catalog, or quit. In the example contained in the manual, the routine TONE.TB is used, so type "TONE.TB".

4. Now, you will be prompted to enter the name you wish to use for this routine. Type "TONE". The Wizard will add the command to your toolbox, then prompt you for the next routine to be added (as in #3 above). Here, we can quit, so enter a RETURN to quit.

5. Exit the Wizard's menu by either typing "0" or entering a RETURN. You now have the new Applesoft command TONE at your disposal. In order to use it, you need to enclose it in quotes, and precede it with an ampersand (& "TONE").

6. For this particular example, the command you just added, "TONE" is one that takes two parameters (you must pass the command two values), pitch and duration. In this case you can use the TONE command by entering values for pitch and duration, then calling TONE:

10 PITCH = 20

20 DURATION = 10

30 & "TONE", PITCH, DURATION

which will produce the tone. The Wizard's Toolbox contains about forty commands which you can add to your Applesoft arsenal. Among these are commands to search through a string array for a target string (useful for finding a name in a list, for example), sorting string arrays, a fast binary file loader, a function to return the load address of any binary file on the requested disk without loading it, employ a dynamic data pointer within a DATA statement, several error handling routines, variable GOSUBs and GOTOs, memory mover, numerous shape table utilities, prepared game shape tables, turtle graphics, variable swaps, string utilities, automatic hex to decimal conversions, and sound effect routines. In order to give you an idea of the value of these routines to your programs, I took a sample Wizard routine, the array sort, and wrote it first in Applesoft (10 minutes), then in Assembly Language (three hours). Comparing my code to the Wizard's, it wasn't as efficient. Although I am good at assembly language programming, in order to duplicate the Wizard's routines, I figure I would need 150 hours or so, and the resulting code would still not be as efficient. At \$39.95, the Wizard's routines are a real bargain.

The Wizard's Toolbox is, like all the Toolbox series, not copy-protected, but anyone who would pirate these packages which are so reasonably priced would foreclose on widows and orphans.

Summary. Useful, well-organized, good documentation (including a good theoretical discussion of the ampersand "hooks"), reasonably priced. A four-star performer.

KINDERCOMP (Spinnaker, \$29.95). Kindercomp is a collection of six educational games for pre-schoolers. The games range from a lo-res drawing board which uses either a joystick (non-centering joystick recommended) or paddles, to beginning alphabet and counting games. The games are accessed by a well-designed menu which can be learned either by simple word recognition or by position. The design of the games is such that they can be played intuitively by a child, after a brief introduction to them. The package runs in Applesoft on an Apple][+, and Spinnaker indicates that it will run on a //e, if the user puts the CAPS/LOCK on.

The Draw game is the first one on the menu, and it allows the user to draw continuous lines on the lo-res page by moving either paddles or joystick, or even the I,J,K and M keys. The U,O,N and comma keys can be employed to draw diagonally. Whichever method you are using, the B key calls up a black background, and the W key calls up white. Use F to fill an enclosed area and S to stop filling. Either the button

contd.

on the joystick or a C will cause a change of color. The spacebar erases the drawing. There is no provision for saving drawings. Game 2 is Scribble, which is a short game that causes any pressed key to be repeated across the screen for a full line. Not much to say here. Names is the third game. Any string typed in at the keyboard will be graphically and dynamically displayed on the hi-res screen. The fourth game, Sequence, really begins the "learning" games. Five numbers are presented in sequence. The child must fill in the next number in the sequence. Bells and whistles reward the successful attempt. Game 5, Letters, causes a letter to be presented. The child finds the letter on the keyboard and presses it. Again, every fifth successful attempt is rewarded. The sixth game is called Match. Match presents a pattern in a box, along with three other patterns, which are numbered. Pick the pattern that matches the pattern in the box, press the corresponding number, and you receive a dog and pony show. These games, simple as they are, are appealing to children. There is enough there to challenge young minds, as well as some pure fun. (All work and no play, you know...)

There is one major drawback to Kindercomp. It is copy-protected and no backup is provided. Try to envision a child of three or four using the package, and it is easy to conjure up a picture of bent floppies. Also, I find it difficult to imagine a pre-schooler as a hardcore software pirate. If you get this program, be prepared to supervise all sessions with it, and/or to explain to your child why he or she cannot use the games for four to six weeks while a damaged disk is being replaced by Spinnaker.

Overall, the games are well designed and should be fun for youngsters. The documentation is skimpy, but sufficient, and the copy protection and lack of backup is deplorable.

INSTANT ZOO (Apple Computer, Inc. \$19.95). Instant Zoo was designed and developed by Children's Television Workshop, which immediately says something about the level of quality in the package. It runs on an Apple][or][+ with Integer BASIC. Like Kindercomp, Instant Zoo is copy-protected, but a backup disk is provided. The package consists of 4 games plus a utility program. The games are designed for ages 7 to 10, but I found that children in Kindergarten liked it, too. What the heck, I enjoy playing these games, and I'm so old I've had the seven-year itch five times.

Game 1 is Instant Zoo. Random lo-res blocks begin to appear on the screen. When you can identify the subject of the picture (which will be an animal), you type in the name. If your guess is not correct, the picture will continue to develop; however, if your guess is right, the picture will immediately unfold and you will get a cute congratulatory message. Game 2, Star Watch, tests how quickly you can react to the sight of a shooting star which appears suddenly in the nighttime sky. It records your reflex time, and prints out the best time of your "star watch". Game 3 is a word match game, Quick Match, which allows you a short time to tell whether two words displayed on the screen are the same. There are different difficulty levels available for vocabulary, and the word pairs are tricky. Again, score is kept for you. In the last game, Scramble, a word appears one letter at a time in scrambled form. The quicker you can unscramble the word, the more points you get (you can even unscramble the word

before all of it has appeared). The computer keeps score for you. The last program in the package is a word list utility, which allows you to enter new lists of words for use with games 3 and 4. All of these programs are accessible through an easy-to-use menu.

The best part of Instant Zoo, however, is the user manual. Not only are the game instructions contained there, but also suggested activities outside the computer area that will enhance and augment what the child learns while using the Apple. A great relief from the narrow vista of CAI.

In summary, a marvellous package at a bargain-basement price with wonderful documentation. Only a half a minus for the copy protection, since a backup is provided.

WORDSTAR IN 3 DAYS, & WHAT TO DO WHEN THINGS GO WRONG (Maple Leaf Press, \$14.95). When trying to get another convert to micro-computing, I always try to avoid any mention of WordStar, in much the same way that proponents of nuclear energy avoid talking about Hiroshima. However, in order to do this review it is unavoidable. WordStar is rather like an institution in the microcomputing world. The WordStar editor is powerful enough, but not high-powered like an XYWrite, and it is definitely not benign. The other functions that WordStar performs (like printing) require enough keystrokes to make an Addendum to whatever document you wanted to print out in the first place. WordStar is also the package that I am using to write this column. Notice that the title of the subject book includes the phrase, "and what to do when things go wrong". When. Not if. And that, friends, is the crux of WordStar.

Why use WordStar at all, if it is that ornery? The answer is that the WordStar editor (the root of all the fuss) is now the de facto standard editor for the most popular programs that employ text processing. I am referring to dBase II (and III) and Turbo Pascal. Most serious programmers' computers will have one or both of these packages installed, and since they both use the WordStar text editor, it makes sense to standardize all text processing along WordStar lines. The learning curve is frightening, but once learned, one does not have to learn another editor. And that is that.

WordStar in 3 Days is another attempt to shorten the learning curve. In addition, the book serves as a quick reference and a help manual when (not if) problems occur. The book is written in the "learn by doing" mode, and seems to cover the subject well for a three-day course. I rather suspect that five days would be required for the novice to learn to use WordStar with anything approaching facility. However, even five days represents a three-month improvement over what it took me to learn MicroPro's jewel. In the "what to do when things go wrong arena", the basic foulups are covered well, and in a timely fashion. Also there is a comprehensive "Problems" heading in the index, to point you to help whenever things go awry. Nonetheless, not all points are covered. For example, only the rudiments of printer control are included, and a problem I encountered with print control was absent from the book (why did "Set emphasized double strike" cause the printer to double-space?). These minutiae aside, the book does well at the basic snafus of WordStar, and the tutorial is well-presented. The reference function of the book is contained within its index, plus a two-page quick contd.

reference (which is not a tear-out reference, although you can rip it out if you wish). The \$14.95 price is steep, and worth every penny if it helps you control learning and using WordStar. My only complaint is a small one--the book does not fold out to a prop-up, and cannot be used like a steno book. This means that you will have to lay the book flat to use it--I would think that the design for a word processing aid would have taken into consideration that a reference/tutorial would be more useful at eye level, rather than at crane-neck-forward-and-peer-down level.

Summary. A good book, few faults. A solid B for WordStar users.

MACINTOSH SECTION:

Mac Challenger (Aegis, \$49.95). Mac Challenger is a flight simulator representing the United States' Challenger Space Shuttle for Macintosh. The controls are all mouse-driven. There is a menu for start/quit and for explanations of the various and sundry controls on the control panel. The panel itself occupies most of the screen, with the upper area of the screen being reserved for the pilot's view through the windshield. Controls proliferate--airspeed, altitude, bank and turn, and compass indicators are spotted throughout the panel. In addition, there is a VOR compass, throttle, flap and landing

gear controls, joystick and appropriate condition indicators.

The craft handles fairly well. I found that it is rather more responsive to nudges on the joystick than, say a Piper 180. Whether or not this is realistic I really can't say, since I have never piloted the Challenger, but I have my doubts that the Challenger shuttle handles as lightly as a Piper. Suffice it to say that in guiding the craft, a little nudge on the joystick goes a long way.

The exercise consists of making a successful landing. In the event of a crash, the screen displays witty newspaper headlines which lament the loss of the craft rather more than the loss of the pilot. I felt that the lack of anything to do other than to land the Challenger was a serious drawback of the program. Just how serious this drawback is would seem to me to be a matter of taste--my feeling when the simulation started up was, "Here I am starting to land an aircraft..How did I get into this situation in the first place?" True enough, in taking off, the Challenger itself is not a craft--it is a passenger; however, my opinion was that a bit of realism could well have been sacrificed for an equal amount of increased playability. Moreover, the graphic potential of a complete landing FROM ORBIT has been left wanting.

Summary. Good design, good handling, good graphics, right price, but not really a complete package. ☺

NEW CP/M DISKS

by Joe England

These disks, and all subsequent WAP CP/M library disks, contain two special kinds of files, LIBRARY files and SQUEEZED files. In order to process them into usable form you can use the utility programs NULU12 and NSWP207, which can be found on WAP CP/M library disk 410, 'ESSENTIAL UTILITIES', or their equivalents.

CP/M Disk 413: MDM740AB (SSC & COMM)

MDM740 is a terminal program for communicating with and transferring files with another computer over normal telephone lines. It requires use of a modem. Features include xmodem (CRC or checksum) error checking protocol, pseudo-function keys, and optional Smartmodem autodialing from an internal phone number library. Different Z80 card, serial card, and modem combinations require different versions of MDM740. There are two versions on this disk.

MDM740A is a version of MDM740 for Microsoft Softcard, Apple Super Serial Card, and any external modem.

MDM740B is a version of MDM740 for Microsoft Softcard, Apple Comm Card, and any external modem.

M7FNK is a utility program for modifying the character strings that are sent by using the pseudo-functions keys.

M7LIB is a utility program for modifying the contents of the phone number library.

PATMDM4 is a utility program for selecting various options within MDM740, such as whether to allow autodialing, screen clear characters, transfer delays, and many other items.

M7NM-6.AQM is a Z80 assembly language source file provided as an alternative way of changing the contents of the phone number library.

MDM740.DQC contains complete documentation for MDM740, M7FNK, M7LIB, and PATMDM4.

Notes: Some versions of MDM740 do not have the 'SET' command implemented (for changing baud rates through software). Printer function and BREAK signal do not work in most Apple versions. Serial card switches should be set for 1200 baud. Cards not capable of 1200 baud should be set for 300 baud. Default baud rate in MDM740 will normally be 300 in either case.

For those who can't wait to try out MDM740, 'T' <cr> puts you into terminal (communication) mode and ^E (Ctrl-E) gets you back into command mode.

CP/M Disk 414:MDM740CD (7710&A-CAT)

This disk is identical to disk 413 except that it contains different versions of MDM740, as explained below.

MDM740C is a version of MDM740 for Microsoft Softcard, CCS-7710 serial card, and any external modem. See the CCS-7710 manual for information on the special cable needed when using this card with a modem.

MDM740D is a version of MDM740 for Microsoft Softcard and Novation Appecat modem. Appecats with 212 option must be used in slot saver mode. To initialize MDM740D to the desired baud rate, type 'MDM740D 3' for 300 baud or 'MDM740D 2' for 1200 baud.

M7FNK, M7LIB, PATMDM4, M7NM-6.AQM and MDM740.DQC are all contained on this disk. For descriptions see the previous listing for CP/M Disk 413.

Special thanks are due to Bob Hanssen, Kurt Holter, George Kinal, Chip Lenkiewicz, and Sam Swersky for their contributions of public domain software to the WAP CP/M library. In particular I'd like to note Chip's large (10 diskettes) contribution, and George's suggestions, expertise, and help in preparing various versions of MDM740 for release. Additional thanks and apologies to anyone I've forgotten to mention.

Enjoy... ☺

DISKETTERIA DISPATCH

This month we have two new CP/M disks and two new SigMac disks. The description of the CP/M disks by Joe England is presented elsewhere in this issue. The following descriptions of the SigMac disks are taken from Anthony Anderson's notes.

SigMAC Disk 29: Fun and Games

In the Games folder:

Banzai (by Jonathan Gay) This is a demo game program from Silicon Beach Software, the same people who bring you *Airborne*. Like *Airborne*, but without airborne attacks or sound. You fight off wave after wave of tanks and soldiers.

Wizard's Fire (by CSI Design Group) Yet another variation on the *Missile Command* theme. Starts very slowly but speeds up as the game progresses.

In the Core War folder:

Core War (by Robert Martin) *Core Wars*, designed by A.K. Dewdney, is the *Ultimate* game for *hackers*. Two programs battle for control of the imaginary *Mars* computer. The programs are written by the players in an "assembly language" called *Redcode*. The players edit, assemble, and run their programs, all within the *Core Wars* system.

Core War Manual (by Robert Martin) Instructions for *Core War*.

cw/cwtext (by Robert Martin) A file used by *Core War* for text storage. Must be on the same disk as *Core War*.

Program Folder (by Robert Martin) This folder contains seven programs for *Core War*. They include *dwarf*, *gemini*, *geminicannon*, *imp*, *imp.cannon*, *vampire*, *worm*.

In the Demo folder:

MadMenus (by Howard Katz) A clever little demo of windows. If you have *REDIT* (SigMac Disk 21) you can replace the text shown in the menus with your own.

Star Flight 0.1 (by Mike Morton) A three-dimensional representation of faster than light travel thru a star field. You can accelerate, decelerate, warp, etc. "Screen on full magnification helmsman."

In the LAZlife folder:

LAZlife 1.1c (by Larry Hutchinson) "LAZlife or LIFE takes place on an invisible grid where each "cell" on the grid is "dead" or "alive" depending on THE LAW OF SURVIVAL, THE LAW OF DEATH, and THE LAW OF BIRTH. LAZlife simulates these laws on a grid in a Mac window.

LAZlife Documentation (by Larry Hutchinson)

Scrapbook File (by Larry Hutchinson) This scrapbook file contains nineteen LAZlife cell arrangements that you can paste into the LAZlife grid.

In the JoyPaint folder:

JoyPaint (by John Stogdell Stokes III) "JoyPaint is a stand alone application that displays MacPaint drawings and gives you the means for scrolling MacPaint drawings in any direction by using a simulated JoyStick.

JoyPaint Documentation (by John Stogdell Stokes III) Documentation for JoyPaint.

In the Desk Accessory folder:

BigBen (by Riccardo Ettore) I'll bet you didn't know that the Mac is responsible for the accuracy of old Ben. This accessory comes to us from one of our European members. Hi, Riccardo, hope to see you again soon, and thanks for the DAs.

PicZle (by Riccardo Ettore) This is the puzzle-champs puzzle. It's not easy.

PicZle Documentation (by Riccardo Ettore) A short note by the author.

Font/DA Mover 2.4 (by Apple Computer) An update to the *Font/DA Mover* that was released with *Finder 4.1*. This one has the advantage of working correctly on the 128K Mac.

SigMac Disk 30: Education 1

On the DESKTOP:

AppleTones (by John R. Meier) A lesson in music composition. Stresses how to use repetition, silence, change in volume, and timbre.

Fractal Contours (by Jim Cathey) Try your hand at fractals. This is a method of creating realistic simulations of planetary terrain.

Curves (by John S. Rhoades) Recursively created curves.

Venn (by Richard Wesley, Jim Moor, Steve Maker) A drill in formal logic. The program will create various problems in logic which you will solve with on-screen Venn diagrams.

Wave (by Gary Galbreath) This application will allow you to use the four sound channels of the Mac to create wave forms and hear the resultant sound. You select the frequency of the wave and add in various percentages of the first seven harmonics.

Under the Apple menu:

Telegraph (by a famous Mac Programmer) See if you can discover the name of this well-known programmer. The name is displayed but not so easy to find. This DA helps you practice your telegraphy by signaling the proper dots and dashes for anything you type in.

In the Water folder:

Water (by Robert Martin) The game of *WATOR* was invented by A. K. Dewdney. *Water*, a toroidal planet completely covered with water, has two types of inhabitants: sharks and fish. The fish have an unlimited food supply, breed happily. The sharks eat only fish and also breed. Each chronon (increment of time), the fish and sharks move, eat, and breed. You determine the starting parameters, number of sharks, birth rate, number of fish, etc.

Water Documentation (by Robert Martin) The author's notes about *Water*.

In the Drill folder:

Drill 2.0 (by Stephen Rogers, Carl Spitzer, Ward Greenberg) This is an interactive drill system for the Macintosh. You can quickly create your own drills, help files to access, and MacPaint displays of visual material.

Read Me Drill A Drill 2.0 text file to lead you to the example drills. Run this drill first.

Example Drill Folder An example drill for the above.

Creating a Drill Folder A drill on using *Drill 2.0*.



Operant Systems

--- HARDWARE ---

PRINTERS---

| | |
|--|---------|
| Epson FX-85 (160 cps, upgrade of FX-80)..... | 369 |
| FX-185 (wide carriage version of the above)..... | 509 |
| LX-80 (replaces RX-80—call for specs)..... | 249 |
| LQ-1500 (200 cps, fantastic letter-quality model)..... | 925 |
| Okidata 192 (replaces Oki 92—call for specs)..... | 359 |
| 193 (132 column version of above)..... | 519 |
| Toshiba 1940 (144 cps draft, BEST letter-qual matrix)..... | 559 |
| 351 (288 cps, wide carriage version of above)..... | 1149 |
| Texas Instruments TI-855 (150 cps draft, 35 cps NLQ)..... | 675 |
| NEC P2/P3 Pinwriter (180 cps, high quality matrix)..... | 519/725 |
| Citizen MSP 20 (200 cps matrix, 18 month warranty)..... | 435 |
| Panasonic 1091 (120 cps, Epson compatible)..... | 259 |
| Gemini 5C-10 (120 cps, same features as Epson MX)..... | 249 |
| Powertype (18 cps daisywheel)..... | 335 |
| Quadram QuadLaser (8 pages/min, based on Canon mech)..... | 2495 |
| C. Itoh F-10 Starwriter (40 cps, office quality)..... | 849 |
| F-10 Printmaster (55 cps, same as above)..... | 1049 |
| Silver-Reed 550 (18 cps daisywheel, BEST at this speed)..... | 439 |
| NEC Elf (16 cps, par & ser interface, NEC/Diablo esul)..... | 439 |
| 8830 (55 cps daisywheel, built like a tank)..... | 1399 |
| Diablo 630 API (40 cps daisywheel)..... | 1549 |
| Queue LetterPro 20 (20 cps daisywheel)..... | 419 |

MODEMS---

| | |
|--|-----|
| Hayes Micromodem J1c (tone dialing/speaker/Smartcom II)..... | 145 |
| Smartmodem 2400 (2400/1200/300 baud, RS-232)..... | 599 |
| Smartmodem 1200 (1200 baud, RS-232, auto-dial)..... | 389 |
| Smartmodem 300 (300 baud, as above)..... | 145 |
| Novation Apple-Cat II (w/ Comware; 1200 baud capable)..... | 199 |
| Smart-Cat 300/1200 (RS-232, auto-dial/answer)..... | 309 |
| Prometheus Promodem 1200 (300/1200 baud, RS-232)..... | 309 |
| Promodem 1200A (300/1200 card w/ software)..... | 299 |
| Microcom ERA 2 (300/1200 baud card with software)..... | 345 |
| ZoomModem J1c (300 baud Microcom compat w/software)..... | 125 |
| US Robotics Password (300/1200 baud, auto-dial/answer)..... | 229 |
| Courier 2400 (2400/1200/300, autodial/ans)..... | 449 |
| Anchor Automation Express (300/1200 loaded w/ features)..... | 249 |
| Volkmodem 12 (300/1200 baud, RS-232)..... | 199 |

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| MicroSci A2 drive (100% Apple-compatible)..... | 169 |
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| A.5c (half-height for Apple J1c)..... | 169 |
| Corvus Winchester drives..... | (call) |

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| Applicard (6 Mhz Z-80, 64K to 192K RAM, 70-col video)..... | 125 |
| Microsoft Softcard J1c (Z-80, 80 col & 64K on one card)..... | 265 |
| Softcard II (includes CP/M 2.2 and MBASIC)..... | 239 |
| Titan Accelerator J1c (3.6 Mhz 6502C coprocessor)..... | 229 |
| Speed Demon (6502C high-speed coprocessor)..... | 195 |
| Applied Engineering Z-Ram (256K, CP/M, ramdisk for J1c)..... | 365 |

MONITORS---

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|--|---------|
| Adek 900G/300A (12" green/amber anti-glare, 18Mhz)..... | 125/139 |
| NEC JB-1201/1205 (green/amber anti-glare screen, 20Mhz)..... | 145 |
| JB-1260 (12" green, 15Mhz, best value for money)..... | 99 |
| USI PI-2 (12" green anti-glare screen, 20 Mhz)..... | 125 |
| PI-3 (12" amber anti-glare screen, 20 Mhz)..... | 125 |

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| Pkaso/U printer interface (superior graphics & more !!!)..... | 99 |
| Quadram Microfazer (8K to 128K parallel buffer)..... | 139 |
| Grappler+ printer interface (parallel w/ graphics)..... | 85 |
| Buffered Grappler+ (16K to 64K buffer plus graphics)..... | 149 |
| CCS 7711 Super Serial (for printers & modems)..... | 99 |
| Practical Peripherals Graphicard (parallel w/ graphics)..... | 79 |
| ProClock (PRODOS compatible)..... | 109 |

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| Videx Ultratera (160 column/48 line display !!!)..... | (call) |
| Videtera (80-column w/ softswitch & inverse)..... | 215 |
| MicroSci 80-col card (w/64K RAM, AppleWorks-compatible)..... | 79 |
| Applied Engineering RamWorks II (64K to 3 meg + 80 col)..... | 139 |
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| pfs: Write J1c..... | 79 |
| ScreenWriter II (40/70/80-col display w/speller)..... | 85 |
| HomeWord / HomeWord Speller..... | 49/35 |
| Sensible Speller IV (DOS or PRODOS versions)..... | 79 |
| The Word Plus (super spelling checker for CP/M)..... | 95 |

SPREADSHEETS---

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| Multiplan (state-of-the-art spreadsheet)..... | 70 |
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| The General Manager 2.0..... | 149 |
| Thinktank (electronic thought organizer)..... | 95 |
| DB Master 4+ (latest version)..... | 185 |

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| Peachtree Peachpak (GL/AR/AP)..... | all three: 229 |
| Back to Basics Accounting (GL/AR/AP) each..... | 59 |
| BPI Accounting (GL/AR/AP/PAY/INVENTORY)..... | 245 |

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| Ascii Express Professional (best DOS/PRODOS program)..... | 80 |
| Z-term Professional (for CP/M)..... | 90 |
| CompuServe Starter Kit (password & 5 free hours)..... | 25 |

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| KoalaPad Graphics Tablet (with graphics software)..... | 85 |
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| Filevision (graphics database system)..... | 119 |
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| Microsoft Word (what MacWrite should have been)..... | 125 |
| Excel (best Mac spreadsheet available)..... | 255 |
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| Hippo C..... | 99 |
| Kensington MacModem (300 baud)..... | 99 |
| Surge Protector (replaces power cord)..... | 39 |

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CRAFTING A GOOD ELECTRONIC MODEL

Dos and Don'ts of Spreadsheets: Part 2

by Joseph T. Kelley © 9-28-85

(Ed. Note: Part 1 of this two-part article was published in the November 1985 WAP Journal.)

Crafting A Good Spreadsheet

Good spreadsheet design always starts with the final report the model will be used to produce. Think about the layout of the output and set aside areas of the spreadsheet for it. While you are doing this, set aside room for the other portions of your spreadsheet as well. Every spreadsheet should have a place for general information, data entry, calculations and documentation. Each of these will be discussed in turn below using a case study to exemplify the points.

A Case Study: Checking Account Reconciliation

Since frequent reference will be made to the case study of a simple checking account reconciliation template, the reader is encouraged to study Exhibits 1, 2 and 3 which are, respectively, the template design portion of the external documentation, a printout of the spreadsheet, and its internal documentation. (The complete external documentation is omitted due to limitations of space.)

Reconciling a checking account consists of explaining the difference between the account balance as reported on a bank statement and the check register balance. The adjusting entries are usually such items as deposits or withdrawals not yet recorded, checks not yet received by the bank, charges recorded

by the bank that are not in the check register (such as the charge for printing checks and fees for the use of automatic tellers) and, last but not anything but least, corrections of errant entries (wrong amounts, deposits recorded as checks, etc.).

Since the balance recorded by the check register is generally more up-to-date than the bank's statement of the account balance, if there are no errors, the reconciliation consists of adjusting the statement balance to reflect subsequent activity and comparing it with the register balance. The two numbers should be equal; if they are not, it is necessary to locate the errors and correct them. The latter process is, alas, too lengthy (and entertaining) to be discussed here. It is included, however, in the omitted external documentation.

Throughout your examination of the case study, remember that it has been chosen more for its ability to exemplify the principles of spreadsheeting than for its excellence as a checking account reconciliation system. The informed reader will note a number of possibilities which would improve the functional characteristics of the spreadsheet.

The Major Spreadsheet Components

Exhibit 1 is typical of the possible structure of many electronic spreadsheets. It has areas for general information, data entry (in the case of our example, two such areas), a discussion of the logic of the spreadsheet, a list of range names and a macro documentation area. (The "Reconciliation" area on the upper right is used to determine the accuracy of the reconciliation and is an example how each spreadsheet is unique.) Last but not least is a documentation area.

Every spreadsheet should have a place reserved for general information including its title, name of preparer, date of preparation, information about the date and source of data used in the spreadsheet, and any helpful information (such as the location of the internal documentation). The upper left hand corner is a good spot for this information since many people naturally begin their examination of a spreadsheet there. See Exhibit 1 which shows the broad physical design of the spreadsheet.

All spreadsheets should have a data entry area which should be clearly labeled as such. Learn to recognize fundamental variables when you see them (e.g., inflation assumptions) and put them in the input area--don't bury them in some formula in the middle of the spreadsheet. In our case study, the data entry area consists of two parts: a place to enter the statement balance and a place to enter the data on checks. In the example, the major part of the spreadsheet is for data entry since the key element is the check register which occupies a large part of the spreadsheet.

When extensive formulas and/or calculations are used in a spreadsheet, it is best to set aside a special calculation section for them, if possible. In the case of the check reconciliation example, formulas exist in the Check Register (the Balance and Outstanding Items columns) and Reconciliation portions of the sheet (not apparent from the Exhibits). This

contd.

CHECKING RECONCILIATION TEMPLATE DESIGN

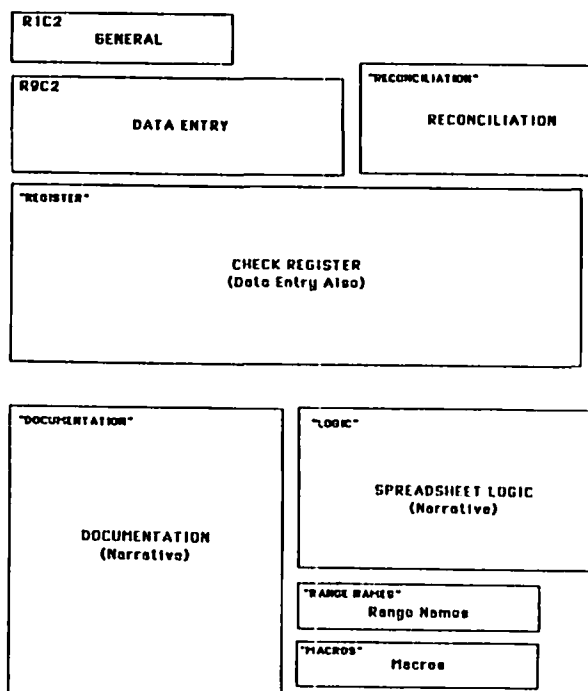


Exhibit 1

Check Reconciliation Template Formulas

CHECKING ACCOUNT RECONCILIATION TEMPLATE
 Prepared by Joseph T. Kelley
 Date Prepared 09/02/85
 Checks/ATM Data as of 09/01/85
 Statement Date 08/09/85
 Documentation Starts in Range "DOCUMENTATION"

RECONCILIATION as of 09/02/85
 Statement Balance \$1,334.86
 Outstanding Items (\$100.00)
 Adjusted Balance \$1,234.86
 Checkbook \$1,234.86
 ERROR TO BE CORRECTED \$0.00

 | DATA ENTRY AREA |
 | Enter Statement Amount Here =====> \$1,334.86 |
 | Enter Checks and ATM Data in Check Register Below |

| CHECK REGISTER | | | | | | | | | |
|---------------------|----------|----------|------------|------------|-------------|-------------|----------------|-------------------|--|
| Payee | Decrease | Increase | Balance | Check Date | ATM/Chk No. | Re- turn =1 | Statement Date | Outstanding Items | |
| BALANCE | | | \$986.99 | | | | | | |
| MaoWorld | \$19.97 | | \$967.02 | 07/05 | 562 | 1 | 08/09/85 | \$0.00 | |
| C&P Telephone | \$47.00 | | \$920.02 | 07/05 | 567 | 1 | 07/10/85 | \$0.00 | |
| Citibank Visa | \$965.00 | | (\$44.98) | 07/05 | 568 | 1 | 07/10/85 | \$0.00 | |
| Shawmut County | \$250.00 | | (\$294.98) | 07/05 | 569 | 1 | 08/09/85 | \$0.00 | |
| VOID Check No. 498 | | \$250.00 | (\$44.98) | 07/05 | None | 1 | 07/05/85 | \$0.00 | |
| ATM Deposit/Wthdrw | \$50.00 | \$72.84 | (\$22.14) | 07/08 | 3947 | 1 | 07/10/85 | \$0.00 | |
| ATM Deposit/Wthdrw | \$100.00 | \$299.25 | \$177.11 | 07/11 | 4579 | 1 | 08/09/85 | \$0.00 | |
| ATM Deposit | | \$548.19 | \$725.30 | 07/12 | 4714 | 1 | 08/09/85 | \$0.00 | |
| ATM Withdrawal | \$100.00 | | \$625.30 | 07/18 | 5914 | 1 | 08/09/85 | \$0.00 | |
| ATM Deposit/Wthdrw | \$100.00 | \$548.19 | \$1,073.49 | 07/30 | 5945 | 1 | 08/09/85 | \$0.00 | |
| ATM Deposit/Wthdrw | \$100.00 | \$435.21 | \$1,408.70 | 07/31 | 6157 | 1 | 08/09/85 | \$0.00 | |
| ATM Withdrawal | \$100.00 | | \$1,308.70 | 08/14 | 0039 | | | (\$100.00) | |
| Washington Apple Pi | \$43.84 | | \$1,264.86 | 07/20 | 570 | 1 | 08/09/85 | \$0.00 | |
| GFRC/GFOA | \$30.00 | | \$1,234.86 | 07/25 | 571 | 1 | 08/09/85 | \$0.00 | |
| | | | \$1,234.86 | | | | | \$0.00 | |
| | | | \$1,234.86 | | | | | \$0.00 | |
| | | | \$1,234.86 | | | | | \$0.00 | |
| | | | \$1,234.86 | | | | | \$0.00 | |
| | | | \$1,234.86 | | | | | \$0.00 | |
| | | | \$1,234.86 | | | | | \$0.00 | |
| | | | \$1,234.86 | | | | | \$0.00 | |

Exhibit 2

Check Reconciliation Template Formulas

 DOCUMENTATION

I) ENTERING TRANSACTIONS

Enter the data for either checks or ATM transactions in columns 2, 3, 4, 6, and 7. For ATM transactions enter the transaction number in character format to keep it in its own column (e.g., "1234")

II) INSERTING NEW ROWS

After inserting new rows at the bottom, fix the boundary (columns 1 and 11) and column 10 by a Fill Down command from the last entry. Format columns 3, 4, and 5 for \$ format and column 6 for align center. Fill Down column 5 as well.

III) DELETING OLD/RECORDED TRANSACTION

You may only delete a consecutive series of transactions starting with the entry below the BALANCE line (line 18) and stopping where you wish. Make sure all transactions have a "1" in column 8 to show they have been recorded by the bank. Select the transactions to be deleted including the boundary. Make sure you are correct. Note the balance in the last line to be deleted. Enter it in cell R18C5 (the BALANCE line). Delete the transactions and shift cells up. Check your work by recalculating and examine the reconciliation. In the cell below the balance amount, insert the correct formula: =Cell above minus 2 cells to the left plus the cell to the left. Recalculate and check the reconciliation.

IV) RECONCILIATION TO THE BANK STATEMENT

Take the bank statement and for each transaction on it, enter the balance in R10C4 (range name Bank_Amt) and locate the corresponding transactions in this sheet and enter a number 1 in column 8. Recalculate the sheet. Examine R10C10 for the amount of error in your work. If it is zero, print out the sheet and put with the Bank Statement.

 SPREADSHEET LOGIC

The logic of the spreadsheet is extremely simple. Transactions are entered in rows according to the column headings. The balance column takes the previous balance, deducts checks and adds deposits. The logic function in column 10 determines outstanding items by looking for other than a "1" in column 8. The reconciliation at the top takes the statement balance, adjusts for outstanding items and compares the result with the checkbook balance at the bottom of column 5. The ERROR TO BE CORRECTED amount assists in finding your errors.

 RANGE NAMES

| | |
|----------------|---|
| Bank_Amt | The bank balance |
| My_Amt | Check register balance |
| Balance | The balance amount from the statement |
| LOGIC | Location of spreadsheet logic narrative |
| DOCUMENTATION | Location of documentation |
| RANGE NAMES | Location of this file |
| MACROS | Location of macro documentation |
| REGISTER | Location of the Check Register |
| RECONCILIATION | Location of the Reconciliation |

 MACROS

No macros are used in this spreadsheet

Exhibit 3

contd.

approach was chosen since it makes the resultant spreadsheet more natural by imitating an existing check register.

A section of a spreadsheet devoted to explaining the logic used in achieving the desired results of the model can greatly facilitate both understanding the model and possibly changing it. Without such advice from the creator of a model alterations to the sheet can only be made with increased risk of error.

Use descriptive range names (and list them in a range name area of the sheet) which suggest their role in the model. Range names like "Bank_Amt" and "My_Amt" can make the interpretation of a model containing them much easier and can tremendously facilitate the modification of the model for other purposes. The case study uses several range names as shown on Exhibit 3; two names are for convenience in getting around the spreadsheet (DOCUMENTATION and LOGIC) and have no other purpose.

If your spreadsheet uses macros, they should all be located in a macro documentation area with an explanation of the purpose of each macro. Exhibit 1 shows a likely spot for macros for the sake of completeness though no macros are actually used in the case study.

Documentation

Documenting anything is a bore. So, for that matter, is breathing. Yet they are both very useful. Only documentation is not automatic, it requires conscious effort. There should be a technical review and documentation of any 'important' spreadsheet as defined below.

If an electronic spreadsheet is used by more than one person, used to support entries to the accounting system, used for reporting (to managers, other departments, or in external reports), or used in decision-making then documentation is essential. Even if only the data is used for the above activities, documentation is essential. Spreadsheets are becoming increasingly necessary for ongoing operations and it is vital that the appropriate documentation be prepared and be kept up to date for all key models.

Documentation should be both external (paper) and internal (within the spreadsheet itself) and should be available from some central location where the authoritative version is always at hand. An authoritative copy should always be kept under lock and key to eliminate unauthorized access. Changes to documentation should be through a formal process including a log book of all changes.

External Documentation

The paper documentation that should accompany any important spreadsheet should include the version number and date, the name of the author, a narrative explaining the purpose of the spreadsheet and how the model works, data entry instructions, identification of inputted and calculated variables, a complete list of options which the model allows, a description of the normal sequence of processing (i.e., what to expect), sample data with corresponding sample outputs, a list of formulas used in the spreadsheet (invaluable for determining if a cell has been altered), a schematic of the spreadsheet layout (See Exhibit 3), a list of all range names, a list and description of all macros, and a 'log book' to record changes to the spreadsheet.

Once a spreadsheet is used for more than testing purposes, all versions should be saved in magnetic form indefinitely, in case a problem arises later which requires replication.

The above list is not new; it can be found in any good book on data processing procedures. Indeed, as microcomputers become increasing powerful and central to the decision-making process, the need to apply the accumulated wisdom from mainframe data processing will grow accordingly.

Internal Documentation

Paper documentation is not enough. It is too easy to grab the disk and run to one's own micro. After all, real men don't need documentation. To the extent possible include as much immediately useful information within the spreadsheet itself as electronic documentation. (See Exhibit 3.)

The minimum electronic documentation should include the version number and date, a brief statement of the models uses and nonuses (e.g., "If your goal is to ... use the Widget model."), instructions on data entry (e.g., "Enter all dates in yy/mm/dd format."), operation, and any significant caveats (e.g., "This model is not tested for amounts exceeding six figures."). The author, the date of the data in the spreadsheet, a description of each macro, user instruction area describing in narrative form how to input data round out the list of things which should be included.

Documentation is not something that happens at the end of a model's development. It should be part of your approach to every entry in the spreadsheet; for example, make labels explanatory--use "Check Date" not just "Date".

In general it is a good idea to have central storage of any spreadsheet used by more than one or two people and its documentation. Such storage should be supervised during the day and locked at night. Anyone who has a need for a given spreadsheet should have a personal copy (date stamped as to date of creation and version number, etc.) and if staff frequently work late, spare copies should be available in an accessible location. Under no circumstances should the original be used for anything but copying. It goes without saying that alterations to the original should be made only through a formal procedure comparable in significance to an inquest.

Documenting spreadsheet models takes tremendous effort and is one of the most frequently neglected aspects of the use of micros. The risk of undocumented software is that those who created it will all have gone and there will be no record of how to use it--perhaps rendering the model useless.

Documentation is so expensive you can't afford not to do it.

Avoiding Errors In Spreadsheet Construction

Avoiding errors in spreadsheet construction begins in the design stage: the clearer your plan is, the less likely you are to make errors of logic. Beyond planning, always emphasize clarity and neatness. Neatly put together models are more easily understood, more quickly verified, and result in fewer errors.

Make the data entry area resemble existing forms or reports whenever possible and make sure that data is entered
contd.

only once. The fewer the keystrokes, the less likely one of them will be incorrect. But don't be slavish in doing this. In Exhibit 2, the "Check Date" column is placed near the center (instead of the more traditional left-hand side) for convenience based on the width of the screen (it tended to be off the screen at inconvenient times).

Always cross-foot matrices, that is, set up row totals and column totals and separately add row totals and column totals. If these two numbers are not equal, there is an error somewhere in the formulas. (See "Working with Matrices" in the next installment for an example and suggestions on dealing with this problem.)

After each change to a spreadsheet, move the cursor to a place where you know the values should be altered by the change you have made. Recalculate the spreadsheet and make sure that the change occurs and that the new values are reasonable. If there is no change or if the results are unreasonable, there is an error in the portion of the sheet you are working on.

Use range names (shorthand titles for rectangular arrays of cells) to the extent possible. When ranges are moved, formulas using range names remain correct, but don't overdo it; range names are probably unnecessary for small spreadsheets, e.g., one pagers.

For complicated spreadsheets, try to systematically distinguish macros from range names to reduce the risk of confusion. For example, consider using upper case for macros and lower case for range names (if your software will support this approach). Alternatively, you might begin every macro name with an "x" or a "z".

Make your spreadsheet's capabilities work for you. If you know the size of calculated numbers, set the formats to precisely that size. Most spreadsheets will indicate an over- or under-flow by displaying a string of *s or #s. If this occurs, there must be an error in the spreadsheet. Hunt it down and get it before it gets you.

Understand the messages your micro gives you. If you are informed that you have a circular reference and the model does not employ one, stop and find the error. In general, it is desirable to be familiar with the list of standard error messages a spreadsheet produces. These can be found in the software documentation and should be read and remembered.

Use the format options of your spreadsheet to portray data in appropriate forms: for dates generally include years; for currency show pennies for small sums; for large amounts, consider dollars only; for percents use 9% as preferable to .09; for text, format for appearances: use centering, left/right flush to improve the general appearance of the spreadsheet.

Before changing an existing spreadsheet you must understand the model's structure. Successfully modifying a model usually requires an examination -- and understanding -- of the formulas being used and an appreciation of the core logic of how the model achieves its results. Without such an understanding, model modifiers are computing in a fool's paradise.

Model Testing: The Fine Art of Finding Errors

In testing a model, check for all the standard problems such as: erroneous data; mathematically incorrect formulas; incorrect cell references (consider using range names);

mistyped or misdefined range names; use of the wrong version of the model, and an inappropriate mode of calculation.

Assume your spreadsheet is wrong until proven otherwise.

As a general technique, use your spreadsheet as a true worksheet: insert temporary rows or columns and use them to hold calculations that check intermediate steps. Re-key formulas in this new space to see if the ranges are correct. When you have "debugged" a portion of a model, you can eliminate the temporary rows and columns.

The best ways to avoid erroneous data are 1) to have someone else verify the entered numbers to their source, and 2) to replicate in the spreadsheet any information you may have about the data. For example, if the data consist of a series of percents which total to 100 percent, put in a formula to total the percents. (But first be sure to understand the effect of using rounded numbers has on such a test!)

Display the formulas (rather than the values) and scan them for consistency. This is a simple but powerful technique which can be applied without even fully understanding the logic of the model. The questions it raises provide an opportunity to gain an insight into the "guts" of the model.

To locate incorrect formulas, enter data for which an answer is known; in lieu of this try using zeroes and ones as data. For example, it doesn't take a pocket calculator to know that 1001 and 10 add to 1011. Since such data can often be evaluated by sight, certain errors can become quite obvious. Consider using a calculator to verify totals (but don't be afraid to insert temporary rows or columns and perform ancillary calculations right in the worksheet).

Again, use plausibility checking: if you have no iterations (a calculated value which becomes an input to the same formula), you should have no circular references (a warning that a formula refers to a cell the value of which depends on the value of the cell containing the formula), so if a circular reference indication exists, you have error. Take the time to hunt that error down immediately; don't wait until the spreadsheet has become more complicated.

Incorrect cell references are best avoided by the use of range names which tend to survive spreadsheet "reconstructive surgery" much better than the use of cell addresses.

Mistyped or misdefined range names can only be avoided by careful checking. Keep a list of range names as they are created and the ranges to which they are supposed to apply. Periodically compare the list to what is actually in the spreadsheet.

Using the wrong version of a model can cause chaos, but there appear to be only two kinds of spreadsheet users: those who make no backups and are always working on the only version of their spreadsheet and those who make backups more frequently than a minute hand (remember those?) circles the dial. The first group run the risk of losing everything but at least always know where they are. The second group always have a correct version somewhere but frequently aren't sure which one it is.

People who use the spreadsheets developed by the second type of people run the risk of using the wrong version--
contd.

frequently with disastrous results. The right approach is to make frequent backups during development and to delete old versions systematically. Few people who have lost the only copy of something important will contest the usefulness of appropriate backups but individuals whose time is valuable will frequently convince themselves that they don't have the time to spend 'housekeeping.' Some people never learn. Deleting old versions of a model while you still remember the correct from the incorrect versions is a valuable exercise because the time spent trying to find the 'right' version a few months later can be much greater and even more frustrating.

Number versions successively, save them frequently, delete all intermediate versions at the end of the development session, save the major intermediate versions on a different disk (dated, documented as to what they do and don't do) and wait at least a year before you dispose of them.

Know your model's mode of calculation (whether it is by row, by column, natural, etc.) because it can directly affect the accuracy of the outputs. For example, a sheet being evaluated by row will most likely show an incorrect value for a cell whose formula is dependent on cells which are "below" it on the sheet. While multiple recalculations may solve this problem, you must always be wary (especially when using spreadsheets prepared by others or when others are using your spreadsheets).

Working with Matrices

Matrices--rectangular arrays of numbers--are widely used in model building. Consider the following matrix which was designed to show sales of a hypothetical company as organized by regions (the rows) and by product line (the columns). The row totals are intended to show total sales by region and the column totals display total sales by product. Such matrices are very useful--when correctly prepared--and are an important tool in management decision making. Unfortunately, if the matrix contains incorrect data or if the formulas used in calculations are wrong the results will be wrong as well, possibly resulting in a disastrous management decision.

| ESS Examples | | | | | |
|--------------|-----------------------------|-----------|-----------|-----------|-------|
| | 1 | 2 | 3 | 4 | 5 |
| 1 | SALES BY REGION AND PRODUCT | | | | |
| 2 | | Product A | Product B | Product C | Total |
| 3 | Region 1 | 867 | 254 | 127 | 1248 |
| 4 | Region 2 | 656 | 693 | 512 | 1861 |
| 5 | Region 3 | 434 | 102 | 821 | 1357 |
| 6 | Total | 1957 | 947 | 1460 | 4364 |

Exhibit 4 - A Sample Matrix

Whenever a matrix is first encountered, it should be tested for plausibility: are the results at all likely? For example, a column containing a dozen or so of numbers that are generally above 1,000 should have a total above 10,000. This is a very crude check and it is a sad commentary on the output of computers (mainframes, minis, and micros) that much of that output fails this simple test. This author was once presented with such a matrix: there was no way that the totals could be correct. When I pointed to a column and quietly remarked: "That column doesn't add," I was told: "What? That can't be. This is a computer report!" And this from a self-styled computer 'expert.'

After a scan for plausibility, matrices should be crossfooted to verify accuracy. If the grand total (the number in the lower right hand corner has been calculated as a total or the rows to the left, recalculate it as the total of the column above it. This should be standard procedure for the construction of all spreadsheets; it is a very informative procedure as can be seen in the example below.

| SALES BY REGION AND PRODUCT | | | | |
|-----------------------------|-----------|-----------|-----------|-------|
| | Product A | Product B | Product C | Total |
| Region 1 | 867 | 254 | 127 | 1248 |
| Region 2 | 656 | 693 | 512 | 1861 |
| Region 3 | 434 | 102 | 821 | 1357 |
| Total | 1957 | 947 | 1460 | 4364 |

Exhibit 5 - The Sample Matrix Crossfooted

The disagreement of the row and column totals shows that there is an error in the formulas of the matrix which must be found and eliminated. There are several ways to do this. First, a temporary row and column can be added at the bottom below the total line and on the right beside the total column. Formulas should then be keyed into the row and column and the results compared with the existing totals. It is important to key in the new formulas rather than copy them from the existing formulas so that an incorrect formula is not inadvertently used.

Another technique for finding errors is to scan the formulas and use your knowledge of symmetry to locate the incorrect entry. If the formulas are very complicated, it is useful to check each 'piece' of the formulas separately rather than trying to evaluate each formula as a whole. Thus, in Example 6, the beginning entries in each formula in the total row (the R[-3]Cs) would be scanned first, then the concluding entries. In our case, the R[-2]C stands out because of its disagreement with the preceding and following R[-1]C.

| | | | |
|----|---------------------|---------------------|---------------------|
| 12 | Product A | Product B | Product C |
| 13 | 867 | 254 | 127 |
| 14 | 656 | 693 | 512 |
| 15 | 434 | 102 | 821 |
| 16 | =SUM(R[-3]C:R[-1]C) | =SUM(R[-3]C:R[-2]C) | =SUM(R[-3]C:R[-1]C) |
| 17 | | | |
| 18 | | | |

Exhibit 6

The Sample Matrix With Formulas Displayed

While it is obviously desirable to be able to detect and correct an error in a spreadsheet, it is even more important to construct them in such a way that they are error-free. Better yet, they should be "error resistant," that is, designed to avoid common errors. This is particularly true for a spreadsheet that will be used by other people. For instance, it is common practice to insert new rows or columns into a matrix, frequently along the margins (between the last number and the total). This is dangerous because the new data will not be added into the total. To avoid this, always have a blank line (or a line of column headings) at the top, a line of dashes between data and totals and invisible columns. If the formulas include these zero value cells, inserting rows or columns--even along the edges--will automatically result in correct calculations.

contd.

| ESS Examples | | |
|-------------------|-------------------|---------------------|
| 4 | 5 | 7 |
| Product B | Product C | Total |
| 254 | 127 | =SUM(RC[-5]:RC[-1]) |
| 693 | 512 | =SUM(RC[-5]:RC[-1]) |
| 102 | 821 | =SUM(RC[-5]:RC[-1]) |
| =SUM(R[-5]:R[-1]) | =SUM(R[-5]:R[-1]) | =SUM(RC[-5]:RC[-1]) |

Exhibit 7 - The Sample Matrix With "Error Resistant" Ranges

The example above shows the formulas of the previous spreadsheet after the recommended adjustments. Note that column 6 does not show but that it is included in the formulas in column 7 and that the bottom row now adds the cells from the title line to the dashed line.

Common Spreadsheet Problems

Planning as a virtue is more easily praised than practiced. Planning requires self-control--something which few people really enjoy since the effort is up-front but the value is returned only toward the end of the project. Yet when models are designed without adequate planning--when they, like Topsy, 'just grew'--they frequently display twisted logic which can be indecipherable. When such a situation occurs it is worth the time and effort to reorganize the spreadsheet to simplify it.

Some problems will never disappear. With spreadsheets, these include the use of incorrect formulas, incorrect data and the effects of sheer ignorance. Formulas can be verified by inputting numbers whose correct answer is known. The formulas themselves can often be verified by reference to books which contain lists of formulas (although the user must understand the precedence used to evaluate formulas on the particular spreadsheet in use).

If at all possible, have someone else go over your spreadsheet. A fresh look will often uncover logical inconsistencies as well as formula errors. This procedure has the added value of providing insight into whether the spreadsheet is confusing or unduly complicated.

If a model is used by more than one person, there is a significant risk that an uninformed user will cause data to overwrite formulas. Protecting the non-data entry portions of the spreadsheet -- to the extent possible -- from change is a necessary step for any spreadsheet which is to be used by a group of people.

Users also have a bad habit of entering atypical data (e.g., words in numeric fields, decimals in date fields, very large numbers where the logic is dependent on small ones, etc.). Always test for this. Don't assume that the data put into the model will be what is expected.

Steps You Can Take

Mainframe computers have their data copied (called a 'backup') daily. Networking systems will probably feature a utility to do this when they become widely available but, until then, most of us will be obliged to make our own backups. As has been said many times, "A word to the wise...."

Avoid inadvertently erasing the last correct version of a

spreadsheet by write protecting the diskette containing the most recent copy of the model. Similarly, lock the non-data entry portion of the spreadsheet to prevent inadvertent overwriting of formulas.

Modeling Standards

Avoid the chaos that can result from conflicting spreadsheets, each of which is intended to be a model of future, by mandating the use of the same data base (hopefully from a common corporate data base where verification of data is made) and insist that the assumptions used in each model are clearly stated and displayed in one area of the spreadsheet. Each model should be audited for consistency and accuracy and be fully documented in writing.

Learn to question computer printouts: question the data, question the assumptions.

Remember the two ultimate facts about data processing outputs -- number one: they are late; number two: they are wrong.

Develop effective documentation procedures (as discussed above) to avoid the "only the guy who designed the model knows how it works" problem and make documentation a standard operating procedure for any important spreadsheet. Formal spreadsheet procedures for, first, auditing spreadsheets and, second, documenting them should be developed and implemented.

Power Versus Complexity

One of the most exciting features of the more advanced spreadsheets is the ability to automate complicated tasks by recording the key sequence used to perform the task. The pre-recorded sequence thus created is generally referred to as a macro. The ability to have one macro 'invoke' another and to use the logic capability of the spreadsheet (e.g., "if-then") can be used to decide which macro is to be implemented next) gives the spreadsheet designer the power to design spreadsheets of amazing versatility.

Users experienced in the application of macros often say that macros can be used to "really make the spreadsheet stand on its head." Unfortunately, spreadsheets are like people: when standing on their head they may be too confused or confusing to get much work done. Therein lies the problem: when a spreadsheet makes extensive use of macros, it is better thought of as a computer program than an electronic metaphor of the traditional paper worksheets of the bookkeeper. Experience shows that few people have the ability to design and write accurate programs in computer languages. It would seem necessary that there should be office standards in the use of macros, yet there rarely are.

Rules regarding the use of macros should require that they are all put into the same area of the spreadsheet and that each is labeled as descriptively as possible. In addition, macros which are frequently used in an office should be standardized and made available to all who need them. It is probably wise to demand that only staff who have had special training be allowed to write any but the most simple macros.

contd.

Macros are like chain saws, tools of great power which must be used with even greater caution.

The ability to link spreadsheets is another powerful tool that must be carefully understood if it is to be used effectively. Beyond the increased complexity (e.e., multiple files which must be kept together) which this feature brings, the increased time required to load and calculate the sheet can cause confusion. Some users have assumed that the time consumed in calculating the linked variables represented an error of some sort and have rebooted the system. Again, office conventions and good procedures can solve these problems but only at the price of increased complexity.

What to Expect in the Future

The lack of compatibility between similar products (for example, the different macros in Lotus 1-2-3 and Symphony) points up the need for an increased ability to transfer information across product lines of both hardware and software. Given the growing demand for this capability, the future is likely to offer increased compatibility between similar products (horizontal compatibility).

Beyond this limited goal, there is likely to be increased integration between spreadsheets and other office oriented software such as graphics, word processing, database management, and telecommunications. Lotus 1-2-3 at least partially integrates spreadsheets, simple graphics and basic database functions and Symphony added word processing and telecommunications. Unfortunately, to date such integration has resulted in products which, while fully integrated, generally provide less than full featured functional capability.

While only time will tell, it is likely that the Macintosh approach--offering an integrating environment--will prove a superior solution, if only because of the range of choice it offers the user, since he or she may choose from many word processors, many spreadsheets, etc., and let the system integrate them.

Thus the integrating solution, offering windowed environments capable of handling different applications at the same time (each in its own window) with the capability of transferring data between applications/windows and the capability to link windows so that a change in one window automatically changes a linked window (e.g., the Macintosh, Top View, Windows), is likely to be with us for a long time.

In the future, it is likely that your computer and the application you are running will notice what you are doing, and respond accordingly (e.g., each choice by the user would be made the current default choice for that document). In the future, when errors are detected, the computer and/or application will suggest possible correct entries which you will choose from a menu similar to those provided by spelling checkers.

An increased ease of micro spreadsheets to mainframe/database links is also likely to be on its way. The demand is great and someone will provide the service if major corporations don't.

Conclusion

Because even a primitive spreadsheet can be used to construct dynamic models which mimic financial behavior with a relative minimum of effort, electronic spreadsheets will be with us into the foreseeable future.

Any spreadsheet is better than none.

With all of their limitations and attendant risks, electronic spreadsheets are a truly powerful and wondrous tool which can greatly extend the capabilities of anyone who must develop financial models. As with any powerful tool, it is incumbent on the user to know the risks that the use of the tool entails if it is to be used wisely.

You Can Do It

This article has tended to focus on the risks of using electronic spreadsheets. While these risks are real and inadequately understood, it is not the intent of this article to discourage the use of these marvelous modeling devices. It is very much the intent of this article, however, that spreadsheets be used with greater care. A user of spreadsheets will not find it difficult to apply the principles recommended in this article and the benefits of doing so will vastly expand the use and the accuracy of spreadsheet results.

Note: Portions of this article are based on material that first appeared in the March 1984 issue of Resources in Review - a publication of the Government Finance Research Center of the Government Finance Officers Association.

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DVORAK FOR APPLE

by Michael Spevak

I had heard of the Dvorak keyboard before, but an article in the Washington Post on March 9, 1985, got my attention. The Dvorak keyboard, which had languished for decades, got a new lease on life when the influential American National Standards Institute accepted it as an alternative standard keyboard in 1983. I marvel at all the interest in state-of-the-art hardware to speed data manipulation at the same time that computer users peck away inefficiently on the keyboard designed during the Civil War to slow typists so the keys wouldn't jam on the primitive machines then in use.

I bought an Apple][+ computer in 1983 after my then 12-year-old son bugged me for one, and my wife and I baby-sat his school's computer over the summer. I quickly learned the advantages of a word processor for writing reports. After a long wait, the Magic Keyboard I ordered (I do not know if anything better is available for the Apple][and][+) came, and I easily installed it and set about trying to learn Dvorak with a standard typing manual and the old (QWERTY) version of Mastertype. However, the control characters still came out in QWERTY, and the manual could not teach new finger movements and typing rhythms. I have been assured that this can be fixed with a little soldering. The learning problem was more easily solved.

When the D. C. government office I work for part time changed its policy, I had to do all my work on site. Dictating and transcribing my reports was too time-consuming. I considered the Radio Shack 100 for direct typing, but I thought the Dvorak keyboard would be less distracting and fatiguing to use for composition. I got an Apple //c in May because we generally liked the Apple, wanted portability, and wanted a switchable keyboard. My wife and I also wanted our children, 12 and 14, to learn the more efficient keyboard. Unlearning QWERTY is practicable but not fun.

I got in touch with Virginia Russell (802-247-6020), the busy President of the Dvorak International Foundation (DIF), which I joined. I had purchased Mastertype for the //c to learn Dvorak. However, we have found that the best way to learn it is to use August Dvorak's original manual, first published by Smith-Corona, now reissued by and available, (\$10.95 + \$2 S&H from DIF, P.O. Box 128, Brandon, Vermont 05733). The manual, like the keyboard, is systematic and efficient, just what you'd expect from a student of Frank and Lillian Gilbreth, pioneer efficiency experts and the parents in "Cheaper by the Dozen." Mrs. Russell recently told me that an up-dated version will include exercises with programming words.

The Dvorak keyboard can be learned 10 times as quickly as QWERTY, partly because 70% of all keystrokes are on the home row. And while a typist's fingers move 12-16 miles in 8 hours of typing with QWERTY, they move only 1 mile with Dvorak. International typing competitions have been won with Dvorak for decades, with a 16-year-old girl typing 200 wpm in the early 40's. Productivity increases at least by a third. There is inevitably a period early in the relearning process when one used to know how to type. One should

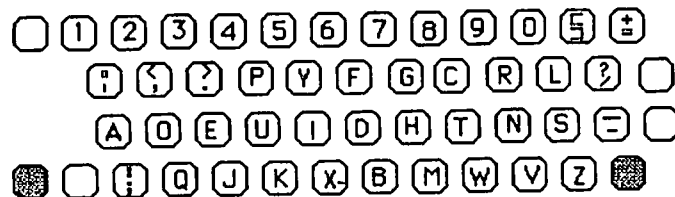
estimate 10 hours of practice with Dvorak for each 10 wpm at which one is typing with QWERTY. Alternating between Dvorak and QWERTY is as easy, or difficult, as between English and Aramaic.

Some 100,000 people use Dvorak. The Washington School for Secretaries began offering it this fall. My wife and I use it all the time. I have already regained my former speed; my error rate is down; and typing is much less distracting and fatiguing. A friend of ours in western Virginia who was weakened by a neurological condition is learning it, and DisabledSIG might consider promulgating it. Green Acres School has had 2 of its //e's made convertible, and a teacher there had her son's modified. Dvorak is awkward to use for some old word-processing programs and games that use a diamond for cursor movements. We've found no other disadvantages.

IBM Selectrics can be modified for \$75 or \$100, depending on the model; for reasons I do not understand, a Dvorak element would not work. The //c has a switch built in. The Macintosh can use Dvorak just by booting SigMac Disk 7, and there is commercial software available, too. The //e has Dvorak capability built in. It can be activated with a chip and switch available from DIF for \$25, or with a little simple soldering as described by Bruce Field in the September 1985 issue of this journal. I would be glad to assist anyone in WAP wanting to perform this surgery. An advantage of the chip over the soldering is that the latter probably invalidates the warranty.

The keys of the //c can easily be removed and placed in the Dvorak positions. This cannot be done with the //e because the keys are sculpted. We have found that someone who is a confident touch typist has no problem typing with the "wrong" keyboard labels. However, it can be confusing to try to learn Dvorak when the only key markings you see are QWERTY - especially if you are a long-time QWERTY typist. The rates of speed increase and error decrease are impaired. The Dvorak letters and symbols could be stuck to the front face of the keys or above the QWERTY ones. Stick-on letters from a stationery store should do the trick; the overlays available from DIF may be best, but we have not yet seen them.

Mrs. Russell, a stimulating and well-informed speaker, would be happy to address WAP. I also wonder if there is interest in a DvorakSIG group.



LAP COMPUTERS AS APPLE ACCESSORIES - Installment 2: Input/Output Mechanisms in the Little and Big Machines by George Kinal

This is the second in a series of articles on using "laptop" computers as "accessories" to "big" (well, bigger....) Apple computers. Primarily, this means taking advantage of ways to transfer text from one machine to the other; "text" can be not only word processing material, but program source code, usually in BASIC, and data bases or spreadsheets converted to text format [A question for readers: has anyone tried to link Multiplan files between a laptop and an Apple ?]. There are actually several different ways to import and export data to/from each machine, though most people are familiar with and use only the most obvious Telecommunications program technique.

I/O MECHANISMS IN THE LAPTOP:

1. **TELCOM:** The Kyocera-built and MicroSoft-programmed laptops (Radio Shack Model 100, Tandy 200, NEC 8210, and Olivetti M-10) come equipped with a rather rudimentary Communications program called TELCOM. The UPLOAD and DOWNLOAD functions of TELCOM allow text files to be sent out or received into memory, either through the RS-232C port connector or the built-in modem (if provided). Most owners are pretty familiar with the use of TELCOM, and its operation is described in the manuals. Its use in conjunction with AE-Pro on an Apple // was covered in an article by Nancy Harvey in the October WAP.

2. **Other Communications Software:** Other, more sophisticated communications programs are available for the laptop computers, both commercially and via public domain sources. For text transfer, these programs won't necessarily do much more than TELCOM will, and TELCOM has the advantage of being in ROM, so no RAM is consumed. There is a version of XMODEM protocol software available for the Model 100, but the error correcting advantages of XMODEM aren't really necessary when two computers are connected directly together, rather than over a telephone line.

3. **"Roll Your Own" in BASIC:** It is possible to write your own communications software routines in Microsoft BASIC on the laptops. This is something that is very difficult on an Apple //, for example, though quite practical on the Mac (witness MACTEP). What makes this so easy on the laptops is that direct access to both the modem (MDM) and RS-232C port (COM) is available directly in BASIC. The Model 100 manual has an example in the Appendix. For example, the statement OPEN "MDM:8N1E" FOR OUTPUT AS 2 activates the modem for sending data. Very simple, short programs can be written using this technique to do some pretty elegant things. For example, I have written one that calls up CompuServe at a specific time (checked against the built-in clock), does an automatic log-on, goes to the stock quotation service ("GO QUOTE"), sends CompuServe a list of stock symbols, saves the received list of quotations, and signs off. All this in about 50 lines of BASIC code. The other feature which makes this useful is that the XON-XOFF capability is built into the

firmware, so that there is no risk that data will be lost just because BASIC is a bit slow in execution (the "E" in the MDM:8N1E above means that XON-XOFF control is enabled). So, if TELCOM doesn't suit your particular application, you can write your own program to do something special.

4. **The SAVE and LOAD commands:** These are available in both the TEXT processor modes and while in BASIC. I suppose most people think these commands apply only for data transfer to and from tape. Not so! If you want to send a text file out the RS-232C port at 1200 baud for example, press the SAVE function key, and for the file name, enter COM:58N1E when you are ready. Or, if you would like to bring into the laptop a BASIC program that has been previously stored on your Apple disk drive (in text form!), the command LOAD "COM:97I1D" will prepare the laptop to receive the output from the Apple at 19.2 kbps! What's the big deal, you say? What's wrong with TELCOM? Well, LOAD and SAVE are memory-efficient and much faster. Downloads (that is, the LOAD operation) are possible at 9600 or 19,200 bps, because the data goes directly to memory, with no screen scrolling delays. Though TELCOM does work at speeds up to at least 9600 baud, a download at greater than 1200 baud involves lots of pauses (X-OFFs) while the laptop manages its screen display. In order to transfer a BASIC program out of the laptop using TELCOM, you must first convert to a text (ASCII) equivalent file in memory (by adding " ,A " after the SAVE "RAM:PGMNME.BA" command). Likewise, if you LOAD into the laptop, the received text is converted directly into tokenized BASIC, whereas if you download first using TELCOM, you will have the text version of the program in memory, and the BASIC interpreter will use a separate memory area for the tokenized program. These memory saving advantages of the LOAD and SAVE technique with BASIC programs, compared with the intermediate step of text file format and TELCOM, can be critical when you don't have much to spare on the lap machine.

For word processing, a transfer using the SAVE command has one additional very important advantage over TELCOM. TELCOM sends text files in a line-oriented manner: it asks you what line width you want (128 maximum). At the end of each line, it adds a carriage return. Most word processing programs, ScreenWriter and WordStar included, prefer that the text not contain returns after each line of text. Well, if you SAVE the text to the COM port instead of using TELCOM, no returns are inserted - the text is sent out in one continuous stream just as it was typed in.

For all of these reasons, I think that once you've tried and learned how to use the LOAD and SAVE commands, you'll never again resort to TELCOM for transfer between the laptop and an adjacent Apple. (TELCOM is still very useful for remote access via telephone line, of course).

contd.

I/O MECHANISMS IN THE "BIG" MACHINE (APPLE //, ///, Mac)

Almost the same general techniques apply on Apples, with a few exceptions.

1. **COMMUNICATIONS SOFTWARE:** For the Apple // series, any one of the popular communications packages will suffice for text file transfers. Still the King of the Road here is ASCII Express Professional (AE-Pro). Under CP/M, XMODEM programs, particularly MODEM 7/30 and 7/40, will do everything you could need in the way of data transfer, though most versions are limited to either one baud rate or selection between 300 and 1200 baud. And then, under DOS 3.3, there is COMM-TERM, written by yours truly, and in the Disketeria WAP #44, which does on an Apple // almost exactly what TELCOM does on the laptop; if your only interest in having communications capability on the Apple is for connection with the laptop, COMM-TERM will suffice.

2. **DIRECT I/O:** A serial card in the Apple can be activated for output using the PR#n command ("n" usually 1 or 2). What good is that? It will permit you to LIST an AppleSoft BASIC program via the serial interface, where the laptop can be connected and set to receive the listed text. Incidentally, this technique takes care of a real pain in transferring programs from the Apple: the need to convert to a Text file version of the program. LISTing with a serial port enabled takes care of the conversion without the usual step of LISTing to a disk file first, then using a communications program to transmit the Text file. With some serial cards, you can use the IN#n command in a similar way to input a BASIC program from the external source (the laptop, say).

The CP/M equivalent of PR#1 is CTRL-P at the command level; under MicroSoft BASIC use LLIST. If your serial card is in slot 2, the CP/M operating system can be patched so that these commands work in that slot, rather than #1. To my knowledge, there is no direct equivalent of the IN# command under CP/M. But, CP/M does have something better than DOS or ProDOS....:

3. **CP/M's PIP Utility:** PIP is a bit like DOS' FID, in that it is used to transfer disk files from one disk to another. But how many people know that PIP can have an Apple I/O port designated as either the source file or the target file? The "devices" in Apple slot #2 (where serial communication cards usually go) are "PUN" for output, and "RDR" for input. So, if you want to send a text file through the serial port, no communication software is needed. Just type the command PIP PUN:= TEXTFILE.TXT [This assumes that you have PIP.COM on your disk, and that the file's name is TEXTFILE.TXT. Got the idea?] To place a file being received on the serial card in Slot 2 onto disk, type PIP FILENAME.TXT:=RDR: .

Perhaps some people have tried this very handy technique, and have not succeeded because MicroSoft CP/M has a bug that keeps this from working. On 60K CP/M 2.23, the following patch is needed:

```
DDT CPM60.COM
S2897 08 04 <cr>
do a warm boot
SAVE 44 CPM60.COM
CPM60
```

Use COPY/S to update system tracks of other disks

Using PIP in this way is efficient and convenient. One caution, though. PIP.COM, on the Apple // at least, does NOT respond to X-OFF. So downloads to the laptop using TELCOM will drop characters at speeds above 300 baud. Use the LOAD technique described above instead. Not all combinations of Z-80 cards and serial interface cards will work reliably in the laptop to Apple direction at 19.2; 9600 baud should be OK.

4. **Word Processor Output:** You can usually configure your text or word processor program to send its output to a serial card in slot 2 (//c and Mac owners have ONLY serial ports, so they're always sending to a serial port). The program has no way of knowing that it's sending data to a lap computer instead of to a printer. It is true that besides the text, there may be some printer control codes included in the output. But the point is, you don't need any communications software at all to send text data out of an Apple serial port. I admit, of course, that in most cases, you want to transfer text from, not to, the laptop....

Well, I hope the above discussion hasn't confused more people than it has enlightened. To summarize the key points: Learn to use the LOAD and SAVE technique, both from TEXT and BASIC modes, on the laptop, instead of relying on TELCOM. This method will give you the capability of file transfer at 9600 or even 19,200 baud, which is the same speed as Tandy's new 3.5" disk drive for the Model 100, and also the same speed at which the Disk Plus package connects Model 100s to Apples. Even at 1200 or 2400 baud, LOAD and SAVE are faster and more memory efficient than using TELCOM. If you use CP/M, PIP.COM will give you local (directly connected) file transfer capability. Under DOS 3.3, the PR#n and IN#n commands can be used for BASIC program exchange; with ProDos, the TYPE command extends this to text files, as well.

In future installments, I hope to cover some of these applications and techniques one at a time, in more detail. Your comments will help me to choose whatever is of the most immediate interest. Drop a note via the WAP office, or leave a message on one of the WAP BBS systems. ☺

LETTER TO THE EDITOR

Dear Editor,

Just in case you sometimes wonder if anyone's out there reading the WAP Journal, you might like to hear the following anecdote:

Recently, during a business 9 telephone call to the American Consulate in Alexandria, Egypt, a US diplomat with whom I was speaking asked if I were the same person who writes the MacNovice column in the Journal. She said she uses her Macintosh in Egypt, and is an avid reader of the column and other Journal articles, and she welcomed the service the Journal provides to personal computer users.

You never know how far-flung the influence of the "Pi" really is!

Ralph J. Begleiter

☺

A LIST FORMATTER FOR ALL PEOPLE

by Ken Knight

Those of us who still use and enjoy Applesoft have found that there are numerous problems. One of the most serious is that the Apple has a very poor editor. There are several programs that you can buy that attempt to solve this problem, but they do cost money. I have long wanted to be able to make my BASIC listings more Pascal-like in nature. I do not own one of those program editing programs nor am I likely to buy one, so I wrote one for my use. The program, LIST FORMATTER, will re-format your listings to any output device (40-columns, 80-columns, printer). The program is internally documented so if you examine the code and read this article you will be able to develop a very clear idea of how and why LIST FORMATTER works and what you can do to improve upon it.

LIST FORMATTER is written in assembly language. There is just one reason for this, speed. If you do not care about how the program works then you can skip the remainder of the article and start typing.

The first thing that the program does is to set up the CSW vector to itself. What is the CSW vector? CSW is a location in memory (\$36,37) that points to the output routine currently in use. So by changing this value to point to our routine we force all output to be processed by it.

Lines 54-58 set up the print routine. As I have said, LIST FORMATTER will work with any output device. The way this is accomplished is to store the starting location of the specific output device in question in OUTLOW and OUTHIGH. The first thing that is done is to store a \$20, the machine language code for a JSR, in PRINTOUT (the starting location of LIST FORMATTER's print routine). Next we store in PRINTOUT+1 and PRINTOUT+2 the actual address of the print routine. Since most people are probably not going to know where a print routine starts, I have included a configure program that has some of the common ones (80 columns, 40 columns, and printer). If the program does not work with those values you will have to find out what values should be used. For that information look through your printer manual. (Note: if your output device is connected through an interface, i.e. printer or modem, check the interface's manual instead.)

Lines 69-80 check for special incoming characters and current character position. If any one of the characters is found or if we have reached the right margin the program will branch accordingly. Let's handle them in order of appearance. The first thing that is done is STA in line 69. We have now saved the character. Line 70-72 gets the current cursor position and checks to see if it's at the right margin. If it is, then LIST FORMATTER branches to LINEND, which will perform a carriage return and place the cursor at the left margin for a multiple line.

Lines 71-79 check to see if the incoming character is a colon (:), a carriage return, or a quote mark ("). If it's any one of these, then the program will branch to PRCOL, PRCR, or QUOTESET respectively. (More on those routines when we get to them.) If the character that is currently in the A-register

is not one of the three, we can just print it out and continue on from there, and that is exactly what is done.

Next we reach the part of the program that does some of the more visible formatting. The PRCOL routine first checks to see if we are between quote marks (like in a PRINT statement). If we are, then we do not want to move to the next line on the screen and thus break up that PRINT statement, so we just print a ":" and continue on. If, however, we are not in between quote marks we branch to PRCOL1 (lines 103-112) and do several things. First, lines 103-106 print a ":" and then a carriage return. The remainder of the routine (lines 107-112) positions the cursor at the left margin for a multiple line, and also sets a flag which informs the program that a multiple line is being printed and that the NEW left margin is to be set accordingly.

The next routine is PRCR (lines 113-118). This routine prints a carriage return and sets all flags to zero. The reason the flags must be reset is that we are at the end of a line in the file that is being printed and the next line could be very different.

LINEND, next in line, has been described earlier. The last routine is the QUOTESET routine, which is located between lines 133 and 142. The QUOTESET routine simply sets the quote flag (QFLAG) to either 0 (false) or 1 (true) depending on whether we are between quotes. The sole function of the QFLAG is to force the program to take no special action regardless of the character currently being printed.

As has been mentioned before, there is a special CONFIGURE program included which will help you to use LIST FORMATTER. The configure program is written in BASIC and most of it is self-explanatory. The program will allow you to select a print routine and a right hand margin for LIST FORMATTER. These values will be saved in a text file and all that you will have to do is EXEC the file into memory to setup up LIST FORMATTER. Then you specify the appropriate PR# of the output device, and CALL 768 to engage the formatter. You do not need to use the CONFIGURE program to run LIST FORMATTER successfully. If you decide not to do so then you must make sure you POKE the appropriate values into the appropriate memory location before CALLING LIST FORMATTER. I strongly urge that you use CONFIGURE and make a library of commonly used formats (i.e. 80-column, 40-column, printer).

I hope that you can find many uses for this program and, more importantly, that you can think of ways to improve it. If you have questions or comments you can either call me at (216)-263-2000, extension 2649 or write: Ken Knight, BOX C-2018, College of Wooster, Wooster, Ohio 44691.

CONFIGURE Listing

```
10 REM *****
20 REM *          CONFIGURE          *
30 REM * WRITTEN BY-- KENNETH KNIGHT *
40 REM *   DEVELOPED-- 8/15/85      *
50 REM *****
```

contd.

```

100 TEXT : HOME : INVERSE :A$ = "LIST
    FORMATTER": GOSUB 1000
110 PRINT :A$ = "WRITTEN BY: KENNETH
    KNIGHT": GOSUB 1000
120 PRINT :A$ = "CONFIGURE PROGRAM":
    GOSUB 1000
125 NORMAL
130 FOR A = 1 TO 39: PRINT "-.": NEXT : PRINT
140 PRINT "THIS PROGRAM WILL CONFIGURE
    THE": PRINT "LIST FORMATTER PROGRAM
    FOR YOUR SPECIFIC": PRINT "NEEDS.": PRINT
150 PRINT "YOU WILL ONLY NEED TO RUN THIS
    PROGRAM": PRINT "WHEN YOU WISH TO
    RE-CONFIGURE": PRINT "LIST FORMATTER.
    ALL PARAMETERS THAT YOU": PRINT "ENTER
    HERE WILL BE SAVED TO A TEXT FILE":
    PRINT "CALLED 'LIST CONSTANTS'"
160 PRINT : PRINT CHR$(7); CHR$(7); CHR$(7)
170 PRINT "*** IMPORTANT ** THE TEXT FILE AND ":
    PRINT "      LIST FORMATTER MUST":
    PRINT "      BE ON THE SAME DISK":
    PRINT
180 PRINT "PRESS A KEY TO GO ON": GET Q$
195 REM CONFIGURE
200 HOME : INPUT "DO YOU WANT TO
    RECONFIGURE (Y/N)":Q$
210 IF Q$ < > "Y" AND Q$ < > "N" THEN 200
220 IF Q$ = "N" THEN 500
230 REM GET VALUES
240 HOME
250 PRINT "1. 40 COLUMN DISPLAY": PRINT
    "2. 80 COLUMN DISPLAY (CARD IN SLOT 3)":
    PRINT "3. PRINTER (CARD IN SLOT 1-APPLE
    SERIAL)": PRINT "4. SPECIAL": PRINT :
    INPUT "-->ENTER CHOICE":Q
260 IF Q < 1 OR Q > 4 THEN 240
270 IF Q = 1 THEN P1 = 240:P2 = 253
280 IF Q = 2 THEN P1 = 7:P2 = 195
290 IF Q = 3 THEN P1 = 7:P2 = 193
300 IF Q = 4 THEN GOSUB 400
320 PRINT : PRINT "WHERE DO YOU WANT THE
    RIGHT MARGIN": PRINT "NOTE- ON THE 40-COL
    DISPLAY IT MUST BE": PRINT "LESS THEN 33":
    INPUT "-->ENTER VALUE":MA
330 PRINT : INPUT "ARE ALL THE VALUES
    CORRECT":Q$
340 IF Q$ < > "Y" AND Q$ < > "N" THEN 330
350 IF Q$ = "N" THEN 240
355 HOME : PRINT "INSERT THE DISK WHICH HAS
    'LIST': PRINT "'FORMATTER' ON IT AND PRESS
    A KEY": GET Q$
357 PRINT
360 PRINT CHR$(4)"OPEN LIST CONSTANTS":
    PRINT CHR$(4)"WRITE LIST CONSTANTS"
370 PRINT "POKE 3,"P1":POKE 4,"P2
380 PRINT "POKE 5,"MA
390 PRINT "BLOAD LIST FORMATTER"
392 PRINT CHR$(4)"CLOSE"
395 GOTO 500
400 PRINT : PRINT "ENTER YOUR SPECIAL
    ROUTINES LOCATIONS": PRINT "VALUE IN
    -DECIMAL-": PRINT : INPUT "-->ENTER VALUE":Q
410 P2 = INT (Q / 256)
420 T = (Q / 256) - (INT (Q / 256)):P1 = T * 256
430 RETURN
500 HOME : PRINT "YOU SHOULD RE-NAME THE
    FILE 'LIST': PRINT "CONSTANT TO REFLECT
    THE OUPUT DEVICE": PRINT "IT IS TO CALL
    (IE:LIST-80COL FOR AN 80": PRINT "COLUMN
    CARD.": PRINT
510 PRINT "IF YOU ARE GOING TO USE 'LIST
    FORMATTER": PRINT "WITH AN OUTPUT DEVICE
    OTHER THAN THE": PRINT "40 COLUMN
    DISPLAY MAKE SURE YOU DO A": PRINT "PR#
    (SLOT OF DEVICE) BEFORE YOU CALL":
    PRINT "'LIST FORMATTER.'"
998 END
999 REM CENTER TEXT
1000 HTAB 20 - (LEN (A$) / 2): PRINT A$: RETURN

```

```

1 *****
2 * LIST FORMATTER *
3 * *
4 * Written by: Kenneth Knight *
5 * *
6 * This program will format an *
7 * APPLESOFT BASIC listing to *
8 * your screen. *
9 * It will allow you to edit *
10 * the line while it is on. *
11 * To turn the formatter on *
12 * BRUN LIST FORMATTER (or BLOAD *
13 * it and type CALL 768). To *
14 * turn it off again you just *
15 * type RESET. *
16 *****
17 *
18 ORG $300
19 TELDOS EQU $3EA ;Set I/O pointer
20 CR EQU $8D ;CARRIAGE RETURN
21 COLON EQU $BA ;COLON
22 QUOTE EQU $A2 ;QUOTE MARK
23 TEMP EQU $00 ;Temporary storage
24 OFLAG EQU $01 ;In between "" marks
25 COLFLAG EQU $02 ;Multiple line flag
26 OUTLOW EQU $03 ;Pointer to print routine (low)
27 OUTHIGH EQU $04 ;High byte for print routine
28 RIGHTMAR EQU $05 ;Right margin
29 CH EQU $24 ;Current X-pos
30 JSR EQU $20 ;M/L code for a "JSR"
31 *
32 *****
33 * Set up CSW switch so that *
34 * all further output passes *
35 * through this routine. *
36 *****
37 *

```

contd.

```

0300: A9 21 38 START LDA #<ENTER
0302: A2 03 39 LDX #>ENTER
0304: 85 36 40 STA $36
0306: 86 37 41 STX $37
0308: 20 EA 03 42 JSR TELDOS
030B: A9 00 43 LDA #$00
030D: 85 02 44 STA COLFLAG
030F: 85 01 45 STA QFLAG
46 *
47 *****
48 * This routine modifies the *
49 * PRINTOUT code for the appro- *
50 * priate output routine. *
51 *****
52 *
0311: A9 20 53 SETOUT LDA #JSR ;..SET
0313: 8D 37 03 54 STA PRINTOUT ;...UP
0316: A5 03 55 LDA OUTLOW ;....PRINT
0318: 8D 38 03 56 STA PRINTOUT+1 ;.....ROUTINE
031B: A5 04 57 LDA OUTHIGH ;.....POINTERS
031D: 8D 39 03 58 STA PRINTOUT+2 ;.....
0320: 60 59 RETURN RTS ;Everything is set
60 *
61 *****
62 * Filter out special characters *
63 * "." Represents multiple line *
64 * CR Is end of line *
65 * "" 1=pass all data unchanged *
66 * 0=scan data and act *
67 *****
68 *
0321: 85 00 69 ENTER STA TEMP
0323: A5 24 70 LDA CH ;Get current X-pos
0325: C5 05 71 CMP RIGHTMAR ;Are we at the right margin?
0327: F0 41 72 BEQ LINEND ;YES, jump to LINEND
0329: A5 00 73 LDA TEMP
032B: C9 BA 74 CMP #COLON ;Is it a ":"?
032D: F0 0C 75 BEQ PRCOL ;YES, set up for multiple line
032F: C9 8D 76 CMP #CR ;Is it a return?
0331: F0 2B 77 BEQ PRCR ;Set up for a new line
0333: C9 A2 78 CMP #QUOTE ;Is it a ""?
0335: F0 4D 79 BEQ QUOTESET
80 *
81 *****
82 * The 3 NOP's that follow are *
83 * modified by the code for *
84 * varying print routine (ie- *
85 * $FDF0 for screen,$C107 for a *
86 * printer,or $C307 for 80col *
87 * card. In theory you can send *
88 * output to any device using *
89 * this method. *
90 *****
91 *
0337: EA 92 PRINTOUT NOP ;.
0338: EA 93 NOP ;..Print
0339: EA 94 NOP ;...Characters
033A: 60 95 RTS
033B: 85 00 96 PRCOL STA TEMP
033D: A9 01 97 LDA #$01
033F: C5 01 98 CMP QFLAG ;Are we in between "" marks?
0341: D0 06 99 BNE PRCOL1 ;NO, continue on
0343: A5 00 100 LDA TEMP
0345: 20 37 03 101 JSR PRINTOUT
0348: 60 102 RTS
0349: A5 00 103 PRCOL1 LDA TEMP
034B: 20 37 03 104 JSR PRINTOUT
034E: A9 8D 105 LDA #CR
0350: 20 37 03 106 JSR PRINTOUT
0353: A9 07 107 LDA #$07
0355: 85 24 108 STA CH ;Set left margin
0357: A9 01 109 LDA #$01
0359: 85 02 110 STA COLFLAG ;Set multiple line
035B: A5 00 111 LDA TEMP
035D: 60 112 RTS
035E: A9 8D 113 PRCR LDA #CR
0360: 20 37 03 114 JSR PRINTOUT
0363: A9 00 115 LDA #$00

```

contd.


```

0365: 85 02 116 STA COLFLAG
0367: 85 01 117 STA QFLAG
0369: 60 118 RTS
036A: A5 00 119 LINEND LDA TEMP
036C: 20 37 03 120 JSR PRINTOUT
036F: A9 8D 121 LDA #CR
0371: 20 37 03 122 JSR PRINTOUT
0374: A9 00 123 LDA #$00
      124
0376: C5 02 125 CMP COLFLAG
0378: D0 05 126 BNE TAB
037A: A9 05 127 LDA #$05
037C: 85 24 128 STA CH
037E: 60 129 RTS
037F: A9 08 130 TAB LDA #$08
0381: 85 24 131 STA CH
0383: 60 132 RTS
0384: 20 37 03 133 QUOTESET JSR PRINTOUT
0387: A9 00 134 LDA #$00
0389: C5 01 135 CMP QFLAG
038B: D0 05 136 BNE QSET1
038D: A9 01 137 LDA #$01
038F: 85 01 138 STA QFLAG
0391: 60 139 RTS
0392: A9 00 140 QSET1 LDA #$00
0394: 85 01 141 STA QFLAG
0396: 60 142 RTS

```

;Multiple line on
;YES, set margin

;Is this the 1st quote?
;NO, so clear QFLAG

;Set flag

;Clear flag

-End assembly, 151 bytes, Errors: 0

How Do You Store Diskettes contd. from pg 50


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EDITING APPLESOFT LINES

by Eli Argon

The machine language routine presented here is for Applesoft programmers. It will list any program line without any added spaces and position the cursor at the beginning of the line for easy editing. It will work with 40- or 80-column screen.

For a long time I was satisfied with editing Applesoft program lines with the following procedure: I would type.

```
TEXT:HOME:POKE 33,33
```

and then I would list the lines to be edited and use the Apple escape commands for moving the cursor and editing. Limiting the screen width to 33 columns prevented the extra spaces that the Apple produces when you list lines with the normal 40-column screen.

This was a partial solution. Since I usually incorporate many statements within a line, editing a line even with a 33-col. screen, required (for long lines) re-typing of the line with no spaces so that the last statements would not be truncated. You see, The LIST command was designed for making the lines easier to read, not to edit. Spaces are liberally inserted before and after each Applesoft command, thereby expanding the line to more than the 239 characters permitted when you enter a line from the keyboard. The 'POKE 33,33' solution prevents only the added spaces at the beginning of each screen line, but not the other spaces.

I had to live with the 'POKE 33,33' for a time. However, I started working with the 80-column screen quite frequently, and it was clear I needed a better solution.

I found the idea in an article by Sandi Mossberg in the December 81 issue of Apple Assembly Lines (a great magazine for 6502 programmers). It presented a routine that provided the same solution that 'POKE 33,33' provided. However, it gave me the idea. The following routine is only 112 bytes long, and is fully relocatable. You can put it in any available memory place and activate it in a variety of ways.

You can enter it directly from the monitor using Listing 1. Or, use the Applesoft program in Listing 2. If you have an assembler, you can use Listing 3. (I used the S-C Macro Assembler. If your assembler does not have local labels, replace the tags '.1' through '.6' with 'N1' through 'N6')

Once entered/run/assembled save the routine with:

```
BSAVE E.LINE,A768,L112
```

The listing is for page 3 (loc. 768 decimal). Once the program has been entered you can use:

```
CALL 768,line#
```

and the line specified will be listed. If the program in memory has no such line, you will hear a beep.

If the ampersand vector is not used for something else, you can POKE the starting address of the routine into \$3F6-\$3F7 (1014-1015 dec.) (i.e. POKE 1014,0:POKE 1015,3) and then use:

```
&LIST line#. ('LIST' can be replaced with any character or Applesoft command).
```

Since I am using the ampersand vector for other routines and page 3 is usually occupied in my programs, I embedded the routine inside an Applesoft program line. The simplest way to do it is by inserting line number 0 in your program

that says:

```
0 REM -----(115 dashes)---
```

Then, load the routine into the address of the beginning of the program plus 5.

```
Address= 5+PEEK(103)+PEEK(104)*256).
```

The dashes will be replaced with the routine. If you list the line, you will get a meaningless list of commands, but don't let it bother you. Use 'LIST 1,' to list the entire program. You can delete line 0 when all the editing is done.

By the way, the insertion of machine language routines into a program line can be done for any routine which is less than 239 bytes long. There is only one condition. The routine should not contain bytes with the value 0. If it does and you edit/add any line to the program, then the program will be destroyed. My routine had originally one zero byte at the beginning. The 'JSR CHRGET' instruction generates the bytes \$20 00 B1. To avoid the byte with the zero value, I used instead 'JSR \$D83C'. That location in Applesoft ROM contains a 'JMP CHRGET' instruction, thus accomplishing the same function and meeting the 'no zero byte' condition.

LISTING 1: MONITOR DUMP

```
0300- 20 3C D8 20 7B DD 20 52
0308- E7 20 1A D6 90 5A A9 0B
0310- 20 5B FB 20 42 FC 20 57
0318- DB A0 02 B1 9B AA C8 84
0320- 01 B1 9B 20 24 ED A4 01
0328- D0 03 20 5C DB C8 B1 9B
0330- F0 39 10 F6 C9 BA D0 04
0338- A9 3F D0 EE 84 01 38 E9
0340- 7F AA A0 D0 84 02 A0 CF
0348- 84 03 A0 FF CA F0 0B C8
0350- D0 02 E6 03 B1 02 10 F7
0358- 30 F2 C8 B1 02 48 20 5C
0360- DB 68 10 F6 A4 01 D0 C5
0368- 4C 3A FF A9 0A 4C 5B FB
```

LISTING 2: APPLESOFT

```
10 FOR I=768 TO 879:READ A:POKE I,A :NEXT
20 PRINT CHR$(4)"BSAVE E.LINE,A768,L112"
30 END.
100 DATA 32,60,216,32,123,221,32,82,
231,32,26,214,144,90,169,11
110 DATA 32,91,251,32,66,252,32,87,219,
160,2,177,155,170,200,132
120 DATA 1,177,155,32,36,237,164,1,
208,3,32,92,219,200,177,155
130 DATA 240,57,16,246,201,186,208,4,
169,63,208,238,132,1,56,233
140 DATA 127,170,160,208,132,2,160,207,
132,3,160,255,202,240,11,200
150 DATA 208,2,230,3,177,2,16,247,
48,242,200,177,2,72,32,92
160 DATA 219,104,16,246,164,1,208,197,
76,58,255,169,10,76,91,251
```

contd.

LISTING 3: ASSEMBLY

```

***** S/E.LINE *****
1010
1020 * (C) BY ELI ARGON 10/1985
1030 *
1040 * COMPACT LISTING OF APPLESOFT
1050 * LINES FOR EASY CURSOR EDIT/COPY.
1060 * LIST A LINE WITH NO SPACES
1070 * WORKS WITH 33,40,80 COL. SCRIN.
1080 *
1090 * FORMAT:CALL ADDR.,LINE#
1100 * OR:&-LINE#
1110 * where - can be any char.
1120 * or token (i.e. &LIST 10)
1130 *
1140 * Monitor & APPLESOT ROUTINES
1150 *
24- 1160 CH .EQ $24
25- 1170 CV .EQ $25
FC42- 1180 CEOP .EQ $FC42 -958
FB5B- 1190 VTABZ .EQ $FB5B
FF3A- 1200 M.BELL .EQ $FF3A
D83C- 1210 ICHRGET.EQ $D83C contain JMP CHRGET
D0D0- 1220 * Indirect JSR $00B1 avoids 0 in code.
DD7B- 1230 TKTBL .EQ $D0D0 token table
E752- 1240 FRMEVL .EQ $DD7B
D61A- 1250 GETADR .EQ $E752
ED24- 1260 FNDLIN .EQ $D61A
DB5C- 1270 LINPRT .EQ $ED24
DB57- 1280 A.COUT .EQ $DB5C OUTDO ROUTINE
9B- 1290 OUTSPC .EQ $DB57 PRINT SPACE
02- 1300 LOWTR .EQ $9B,9C
01- 1310 PTR .EQ $02,03
1320 YY .EQ $1
1330 *
1340 .OR $300
1350 *
0300- 20 3C D8 1360 E.LINE JSR ICHRGET get line#
0303- 20 7B DD 1370 JSR FRMEVL or line#expr
0306- 20 52 E7 1380 JSR GETADR convert to int
0309- 20 1A D6 1390 JSR FNDLIN & addr. in LOWTR
030C- 90 5A 1400 BCC .5 not found
030E- A9 0B 1410 LDA #11 VTAB 12
0310- 20 5B FB 1420 JSR VTABZ
0313- 20 42 FC 1430 JSR CEOP
0316- 20 57 DB 1440 JSR OUTSPC prints a space
1450 *-----print the line #-----
0319- A0 02 1460 LDY #2
031B- B1 9B 1470 LDA (LOWTR),Y put line #
031D- AA 1480 TAX in A and X
031E- C8 1490 INY
031F- 84 01 1500 STY YY save Y
0321- B1 9B 1510 LDA (LOWTR),Y
0323- 20 24 ED 1520 JSR LINPRT and print it
0326- A4 01 1530 LDY YY
0328- D0 03 1540 BNE .11
1550 *-----
032A- 20 5C DB 1560 .1 JSR A.COUT AppleSoft Cout
032D- C8 1570 .11 INY
032E- B1 9B 1580 LDA (LOWTR),Y
0330- F0 39 1590 BEQ .6
0332- 10 F6 1600 BPL .1 print it
1610
1620 *--- note:delete the following
1630 * four (4) lines if you
1640 * want to print,PRINT not '?'
1650
0334- C9 BA 1660 CMP #186 'PRINT' token
0336- D0 04 1670 BNE .12
0338- A9 3F 1680 LDA #?
033A- D0 EE 1690 BNE .1 always
1700
033C- 84 01 1710.12 STY YY
033E- 38 1720 SEC

```

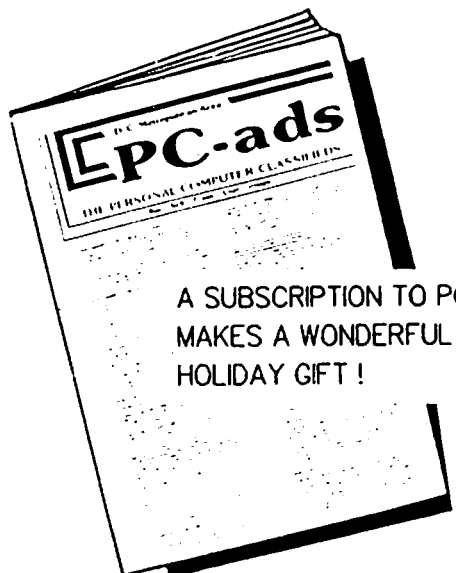
```

033F- E9 7F 1730 SBC #$7F
0341- AA 1740 TAX
0342- A0 D0 1750 LDY #TKTBL
0344- 84 02 1760 STY PTR
0346- A0 CF 1770 LDY /TKTBL-256
0348- 84 03 1780 STY PTR+1
034A- A0 FF 1790 LDY #SFF
1800
1810 *--- search for token
1820 * by counting msb
1830
034C- CA 1840 .2 DEX
034D- F0 0B 1850 BEQ.4 token is found when x=0
034F- C8 1860 .21 INY on first call PTR+1=+1
0350- D0 02 1870 BNE .3
0352- E6 03 1880 INC PTR+1
0354- B1 02 1890.3 LDA (PTR),Y get a char from
0356- 10 F7 1900 BPL .21
0358- 30 F2 1910 BMI .2
1920
1930 *--- print the token
1940
035A- C8 1950.4 INY
035B- B1 02 1960 LDA (PTR),Y
035D- 48 1970 PHA
035E- 20 5C DB 1980 JSR A.COUT
0361- 68 1990 PLA
0362- 10 F6 2000 BPL .4
0364- A4 01 2010 LDY YY
0366- D0 C5 2020 BNE .11 always
2030 *-----
0368- 4C 3A FF 2040 .5 JMP M.BELL exit with beep.
2050 *-----
036B- A9 0A 2060 .6 LDA #10
036D- 4C 5B FB 2070 JMP VTABZ put cursor there
2080 * and exit.
2090 *-----
0000 ERRORS IN ASSEMBLY

```

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STEP-TRACE FOR FORTH

by Chester H. Page

The definition of a word in a FORTH program is typically a colon definition; this definition comprises a sequence of pointers to words already in the vocabulary. In English, or any other spoken language, putting known words together in an original order constitutes a statement; in FORTH, such a statement is the definition of a new word. In a normal public language, we seldom inquire into the words behind the words we use; we do not make an etymological analysis of every statement we encounter. In FORTH, however, etymology is vital. Each statement is analyzed in terms of its components, in terms of the components of these components, etc., back to a set of primitive words. In FORTH, these primitives are the fundamental machine-language words on which the entire FORTH language is built. (FORTH is, indeed, a nit-pickers' language!)

When we are debugging a program, i.e., a set of newly defined words, we do not want to follow each operation back to the primitive level, but to examine its consequences only at the present level. For a trivial example, if we have defined a word called TEST that is supposed to add 8 to 5, then multiply by 6 and print the result: TEST 6 5 8 + * . ; the debugging would consist of looking at each entry in sequence and examining the stack after this entry has been executed. A numerical input, such as 5, is actually a call to LIT to compile 5 onto the stack. We are not interested in all the genealogical details of LIT--we just want the step-trace to display "LIT" and show that 5 has been put on the top of the stack. Similarly, after "+" we want to be told that "+" was the operation, and that 5 and 8 are no longer on the stack, but that 13 is.

Understanding a means of accomplishing this requires understanding the nature of NEXT, wherein FORTH proceeds from one word to another, down to the primitive level, and then back up to the next word at the top level. Our illustrative word TEST comprises a sequence of pointers, i.e., a sequence of word calls. The addresses of these pointers are successively held in the variable IP (interpretive pointer); each pointer in IP supplies the execution address of a word to be called--this address is loaded into W (word pointer). As FORTH goes back into etymological history to find its operating primitives, the successive pointers in IP also come from history. Our problem is to stop and display the name of a word only when it is called from the present. Since IP holds the address which supplies the call, any address in IP which is above the top of the original vocabulary (FENCE) represents a call from a recently coined word. The operation requested by the call, however, is not completed until all the "ancestors" have been called. The completion of the operation is signalled by the presence of another call from the new word. Thus, every time IP holds an address from the area of recent words, the operation requested by the previous call has been completed. It is then time to exhibit the stack.

The actual sequence in FORTH is as follows: the address held by IP is used as a pointer to the word address to be loaded into W; IP is then incremented (by 2) to hold the address of

the next pointer, then W is called. For step-tracing, we detour this sequence just before the jump to the contents of W, subtract 2 from IP to find the address from which the call was made, compare this address with a "floor" which separates the present from the past (upstairs in memory from downstairs). Ordinarily, the FENCE supplies this "floor". but the "floor" can be moved down to provide display of lower level components and their actions.

If IP holds an address above the "floor", the name of the word called is displayed. When the next above-floor pointer is encountered, the stack is displayed as a continuation of the line showing the word name. In this way, all word names are at the left margin and followed by their consequences.

This kind of program cannot be written in FORTH or it would try to analyze itself, getting into a disastrous recursion; the entire routine must be written in machine code and entered by CREATE.

OPERATION

Loading the STEP-TRACE screen installs the program, stores the value of FENCE as the FLOOR. Entering TRACE and pressing the SPACE-BAR installs the detour jump at the end of NEXT. Words can be defined from the keyboard without interference; when called, they are step-traced. Depressing any key will call for one step; using the REPEAT key, or holding a key down on the //e, results in repeated stepping, or tracing, until the key is released. To examine words already in a vocabulary, enter " 0 FLOOR !". Keyboard input will now be traced, and even a "trivial" command will result in a torrent of ancestral calls.

With TRACE in operation, each word executed is displayed, followed by a printout of the stack as it exists after the word has been executed. Even when FORTH is operating in DECIMAL base, the stack print-out will be in 4-digit hex numbers, as stored. To stop the tracing operation, enter NOTRACE and depress SPACE BAR until the command has been executed. To resume TRACE, enter TRACE and press the bar.

```
SCR # 16
0 \STEP-TRACE                                19OCT85CHP)
1 HEX
2 CREATE STEP  A538 , E9EE , 8502 , A55E , E9EF , 8500 ,
3 C55F , 905B , D052 , A506 , C55E , 905A , 864A , A259 ,
4 E4DC , 9059 , B513 , 2001 , FDDA , 00B5 , DA20 , A9FD ,
5 20A0 , FDED , CACA , E9D0 , 0C20 , A6FD , 2059 , FD8E ,
6 A538 , E9F1 , 8522 , A55C , E9F2 , 8500 , A05D , 881F ,
7 5CB1 , FB10 , B1C8 , 305C , 0907 , 2080 , FDED , F4B0 ,
8 ED20 , A9FD , 850C , A024 , 4C00 , 00F0 , SMUDGE
9
10 5A CONSTANT FLOOR
11 FENCE @ FLOOR !
12 : TRACE ' STEP 85F ! ;
13 : NOTRACE F0 85F ! ;
14
15 DECIMAL
```

contd.

:ASM

```

1000 *****
1010 * STEP-TRACE FOR FORTH *
1020 *
1030 * CHESTER H. PAGE *
1040 * OCT 1985 *
1050 *****
00EE- 1060 IP .EQ $EE
00F1- 1070 W .EQ $F1
0059- 1080 XSAV .EQ $59
005A- 1090 FLOOR .EQ $5A
005C- 1100 NAME .EQ $5C
005E- 1110 FROM .EQ $5E
FD0C- 1120 INCH .EQ $FDOC WAIT FOR A CHAR.
FD8E- 1130 PRCR .EQ $FD8E PRINT RETURN
FDDA- 1140 PRBYTE .EQ $FDDA PRINT HEX BYTE
FD8E- 1150 COUT .EQ $FDED
0800- 38 1160 SEC CHECK CALL LOCTN.
0801- A5 EE 1170 LDA IP
0803- E9 02 1180 SBC #2
0805- 85 5E 1190 STA FROM
0807- A5 EF 1200 LDA IP+1
0809- E9 00 1210 SBC #0
080B- 85 5F 1220 STA FROM+1
080D- C5 5B 1230 CMP FLOOR+1
080F- 90 52 1240 BCC DONE
0811- D0 06 1250 BNE STACK-4
0813- A5 5E 1260 LDA FROM
0815- C5 5A 1270 CMP FLOOR
0817- 90 4A 1280 BCC DONE
0819- 86 59 1290 STX XSAV
081B- A2 DC 1300 LDX #SDC
081D- E4 59 1310 STACK CPX XSAV
081F- 90 13 1320 BCC OUT-3
0821- B5 01 1330 LDA 1,X PRINT STACK
0823- 20 DA FD 1340 JSR PRBYTE
0826- B5 00 1350 LDA 0,X
0828- 20 DA FD 1360 JSR PRBYTE
082B- A9 A0 1370 LDA #SA0
082D- 20 ED FD 1380 JSR COUT
0830- CA 1390 DEX
0831- CA 1400 DEX
0832- D0 E9 1410 BNE STACK
0834- 20 0C FD 1420 JSR INCH STEP (CALL KEY)
0837- A6 59 1430 OUT LDX XSAV
0839- 20 8E FD 1440 JSR PRCR
083C- 38 1450 SEC PRINT NAME
083D- A5 F1 1460 LDA W
083F- E9 22 1470 SBC #S22
0841- 85 5C 1480 STA NAME
0843- A5 F2 1490 LDA W+1
0845- E9 00 1500 SBC #0
0847- 85 5D 1510 STA NAME+1
0849- A0 1F 1520 LDY #S1F
084B- 88 1530 LOOP DEY FIND NAME START
084C- B1 5C 1540 LDA (NAME),Y
084E- 10 FB 1550 BPL LOOP
0850- C8 1560 PRINT INY
0851- B1 5C 1570 LDA (NAME),Y
0853- 30 07 1580 BMI LAST
0855- 09 80 1590 ORA #S80
0857- 20 ED FD 1600 JSR COUT
085A- B0 F4 1610 BCS PRINT
085C- 20 ED FD 1620 LAST JSR COUT
085F- A9 0C 1630 LDA #12
0861- 85 24 1640 STA $24 TAB
0863- A0 00 1650 DONE LDY #0
0865- 4C F0 00 1660 JMP W-1

```

=====

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WORDPERFECT AND PERFECT APPLE // WORD PROCESSING

by Walton Francis

The Apple // series continues to have, by far, the greatest variety of software packages of all types available on any personal computer. But until recently, the best software available for both word processing and spreadsheet was only good, not great. The porting of SuperCalc to the Apple gave the Apple // family a program the equal of Lotus 1-2-3 in the spreadsheet arena. And the porting of WordPerfect from MS-DOS has now given the Apple //e and //c very nearly the equivalent of Lotus in the word processing arena. WordPerfect is not as famous as Lotus, but is by any reckoning one of the top two or three wordprocessing packages available on any machine at any price.

I have used WordPerfect on a daily basis for over two years on an MS-DOS machine whose manufacturer shall remain unnamed. My office chose WordPerfect version 3.0 for both professionals and secretaries after an extensive series of comparisons with its competitors, and it won hands down on ease of use, flexibility, power, documentation, support, and virtually all of the nuances of each. Earlier this year we upgraded to the version 4.0 and gained again, and we will move to version 4.1 shortly. InfoWorld's review of version 4.0 (February 25, 1985) gave it perfect scores--the best rating ever given any word processor--and InfoWorld was right.

Now Satellite Software has come forth with an Apple // version which, while lacking a few of the features of the MS-DOS versions, is awesome when compared to its Apple competition. InfoWorld (September 9, 1985) only gave the Apple version three out of four possible disks--a rating which I regard as virtually a slander, and only justifiable in the sense that there are a few better word processors in the world (mainly versions 4.0 and 4.1 of WordPerfect, and Multimate Advantage) and hence the Apple version arguably should not get a perfect score.

Magic Window and WordStar are the Apple word processors most similar in approach, spirit, and style to WordPerfect, but thereafter all comparisons end. The virtues of Magic Window in ease of learning and screen appearance barely compensate for its clumsiness and lack of features. WordStar comes fairly--but not very--close to WordPerfect in power, but is considerably harder to learn and to use.

The WordPerfect Approach

WordPerfect is a "what you see is what you get" word processor to virtually the full extent possible on any machine short of a Macintosh. Indents, page breaks, margins, double spacing, and all the rest show on the screen in the precise location on which they will print out. The formatting codes which are ever present in most word processors are absent from the screen (except when you want to see them, as discussed below). A few features (alignment of righthand words when using right justification, footnotes, and headers) don't show on screen, but for all practical purposes you see your text as nature (and you) intended.

WordPerfect relies extensively on function keys, menus, and submenus for accomplishing its complex features. You don't memorize exotic commands, but simply hit the proper function key which either completes the command or lets you select the feature you want from the list shown on the menu. In this respect it is most Macintosh-like. Because there are so many features, WordPerfect is forced to use dozens of menus, and it takes a bit of time to learn what each of them does, but this particular problem is inescapable given the power of WordPerfect. The approach taken is to use the open and closed apple keys in conjunction with the entire top row of keys to provide 28 commands and functions. Almost a dozen of these perform the most common commands such as defining a block, centering text, searching and replacing, saving files, or retrieving files; the others produce a menu. Many of these, in turn, involve submenus. A template eliminates the need to memorize any exotic commands.

WordPerfect has a considerably more complete repertoire of formatting options than its competition, but eliminates all the nonsense of coded commands. Things like underlining and font changes are so complex in AppleWriter //e, for example, that books have been written on how to accomplish them. WordPerfect solves such problems in three ways.

First, the program comes with a simple printer configuration routine in which you tell it what printer you normally use by checking one of 30 different entries (yes, it is difficult to own a printer that WordPerfect doesn't recognize--but if you happen to own a weird brand that isn't listed or doesn't emulate a popular control set such as Epson or Qume, Satellite Software will provide you any necessary patches). Because it already knows your printer codes, WordPerfect can then let its standard function keys and menu choices do the work rather than force you to memorize that "control V escape O" or whatever turns on some particular feature of your printer.

Second, WordPerfect provides a menu choice for virtually any formatting option or combination of options ever invented. Suppose you are writing a manual and want to have the page number always appear on the outer corner of each page, and widen your margin on the inside of each page (alternate left and right) to allow for binding. No problem--WordPerfect has thought of these choices and simply allows you to select them off a menu with a keystroke or two.

Third, WordPerfect lets you switch into a format code display mode at any time. This feature, which is analogous to the spreadsheet approach of displaying results on screen but displaying formulas when you put the cursor on a cell, or to MacWrite's rulers, gives you the best of both the "what you see is what you get" and control code galore approaches. The code displayed is in abbreviated English such as "LM 12" for a left margin setting, rather than in printer code language.

Power and Features

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contd.

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features of WordPerfect. Envision the most complex chart of word processor features you have ever seen or imagined, one with hundreds of entries. A moderately powerful program like AppleWorks or AppleWriter //e will get a check mark in as many as two thirds of them, and WordStar in eighty percent or more. WordPerfect will hit ninety-five percent.

Consider a few of the things that WordPerfect handles routinely which are rare or nonexistent in other Apple word processors. First, macros. A macro is series of keystrokes which you predefine and which you can have the machine execute automatically at any future time by hitting a single key. Macros are very handy for such things as complex formats for documents, canned paragraphs, and the like. Let me describe how I use Word Perfects' macros most frequently. I use three printers in one of my offices--an Epson, a Qume, and a shared LaserJet which I can only use part of the time and which we move around on a cart. Although WordPerfect makes switching from one printer to another easy--a half dozen keystrokes or so (did I mention that WordPerfect lets you preselect multiple printers?)--even that is too many for me. So I simply defined a macro which lets me hit a single key to tell the machine to save my text, select the LaserJet printer, change the top margin to accommodate an idiosyncrasy of that printer, and print the document.

Second, footnotes, widows, and orphans. (If you don't know what a widow or orphan is, don't worry--I have to keep a few secrets). WordPerfect eliminates widows and orphans automatically. The footnote feature, though crippled compared to the MS-DOS version, is just fine for the average dissertation or legal brief. The superscripting is handled automatically, as is the numbering and renumbering of multiple footnotes. Lengths up to a page are allowed, and pagination and placement are controlled automatically, no matter how many footnotes wind up on a particular page.

Third, hyphenation. WordPerfect lets you preselect the number of spaces you will allow before a hyphen is needed. When the program identifies that the hyphen is needed, you pick the break point (sorry, but no word processor I know of is smart enough to understand syllabification) and the program inserts a "soft" hyphen. If you later decide to change the margins and the hyphen is no longer needed, the "soft" hyphen goes away automatically. Of course, the program also identifies any words which newly need a hyphen after the margin change, and allows for "hard" hypens which are maintained regardless of margins.

Fourth, the indent function. In WordPerfect, use of the indent key allows you to set up an indented paragraph or bulleted text (indented left only, or both left and right) which continues downward at the new margin setting until you start a new paragraph. This feature is automatic and eliminates the nuisance of setting up a new margin and then having to respecify the old margin to accomplish the same purpose. Using indent, unlike tabs, preserves the ability to edit the text and have it reformat itself automatically. This seemingly exotic feature is all but essential for office memos, lengthy quotes, and any writing task which requires a fast and easy way to change the indentation of text repeatedly within a page.

Fifth, print spooling. If you have been foolish (or lucky) enough not yet to have invested \$100-200 in a printer buffer, so that you can continue writing while a document prints out,

WordPerfect throws in an automatic buffering facility using the Apple's memory.

The list could go on and on. Mail merge? Speller? Document merges? Print directly without leaving editor? Downloading and uploading of text files? Find and replace with sensitivity to case? Cut and paste? Decimal alignment of columns of numbers? Change any aspect of format at any place in the document? Toggle from insert to overwrite mode? Handle any size paper? Allow for printing any page or pages as well as entire document? Headers and footers? Automatic page numbering with an option to leave the number off page one? Delete by letter, word, line, or page? Of course! (Though in all honesty I must admit that the speller must be purchased separately for the princely sum of \$30. I haven't used the Apple version but the MS-DOS version is as good as any standalone speller sold.)

Ease of Learning and Use

WordPerfect is not as easy to learn as Bank Street Writer or Magic Window. But it is substantially easier than, say, AppleWriter //e or ScreenWriter. Satellite Software has spent a lot of time and trouble to make the most common things--just plain writing, simple format changes, printing, and file maintenance--not only powerful but easy. With this as the foundation, plus help features, on-disk tutorial, and an excellent manual including both tutorial and reference sections, almost anyone should be up and running within an hour or two. Identifying and understanding (just what is a macro, hot zone, or widow?), let alone learning, all the more exotic features will of course take considerably more time. But that is the price of power and simply unavoidable. One can, after all, simply elect not to bother with such esoterica.

In actual use WordPerfect is as quick and easy as any word processor I have ever seen, including the dedicated machines. Few programs on the Apple come even close. Programs such as Bank Street Writer and Magic Window, for example, are easy to learn but force awkward moves or extra keystrokes for some of the simplest things, and programs which use the hires screen simply won't keep up with a speed typist.

WordPerfect is a writer's tool, one in which the software stays out of the way, operating smoothly but unobtrusively, while one commits words to screen. Functions which are used most frequently during actual text entry (such as underlining or indenting) require minimum possible keystrokes. Functions which are unavoidably a bit more complex (such as search and replace, or block moves), use the simplest possible command instructions, oriented towards the most common choices. Only the most complex and least used features require the use of submenus. And wherever possible your options are presented consistently and easily across different commands. For example, cursor keys and inverse highlighting are used to identify blocks (similar to AppleWorks), and blocks are used wherever this would be sensible to help in another function; for example, to add underlining or cut existing text one simply highlights the text to be changed and hits the relevant function key.

The screen is uncluttered (unlike WordStar in its default mode, the menus stay off the screen until you need them) and moving from one part of a document to another is a snap.

With only half the features WordPerfect would be the best
contd.

"slap the text onto the screen and edit it" software around; yet at the same time it is the most powerful office word processor for the Apple.

Warts and other Weaknesses

What's the catch? Where are the weaknesses? Well, there are a few. To fit the program into the Apple // world, with 128K RAM standard, Satellite Software had to leave a few things out of the 192K MS-DOS version. The Apple version has footnotes but not endnotes, and only one choice of footnote style. It cannot construct a table of contents or index for a document automatically. It does not have a full text database facility allowing you to search the content of all files on a disk to find, say, all documents concerning a particular client regardless of the file names used. And the math capability was left out of the Apple version. Owing to the limitations of the Apple character generator, and quite correctly eschewing using of the fuzzy hi-res screen, Satellite Software could not show underlining or boldface on screen (highlighting is used for both). And, like the MS-DOS version, reformatting of the screen after extensive editing is not automatic; you must either page down or hit a special rewrite key. The Apple LaserWriter has inexplicably been left off the list of printers supported.

Of course, almost none of these features exist in any other Apple word processor, so it is hard to call them weaknesses when viewed against the competition.

There is, however, one failing which is unforgivable. The WordPerfect manual comes in a binder which is not only IBM style, but colored baby blue.

A Few Miscellaneous Items

I've saved a few goodies for last. WordPerfect will let you work with files of any length up to disk capacity (16 megs on a hard disk). It supports a RAM disk as well.

The price is a steal--\$180 (or \$210 including speller) for a program which lists for \$500 in the MS-DOS version and has been near the top of the bestseller lists for over a year.

And WordPerfect is not copy protected!

A Caution

The advice which follows I would give unhesitatingly for an MS-DOS machine. My colleagues and I have invested tens of thousands of hours in WordPerfect. We know its limits, which are few indeed. And our judgment is shared by an extensive body of reviews. But I have only used it on the Apple for a few hours and there may be, unknown to me, a bug or other defect in the Apple version which would vitiate my conclusions in part (indeed, the Epson MX printer driver in WordPerfect fails to underline on my printer, though this is because I own an early 1981 Epson without grafrax plus, never designed for underlining). Nonetheless, Satellite Software is particularly noteworthy for its attention to detail, responsiveness to users, and policy of perfecting its software. If there is a problem of some kind, I have no doubt that it will be fixed, and soon (Satellite Software immediately promised to give me a patch if I can't get underlining to work on my vintage Epson).

Conclusion

Until recently, I could not quarrel with the logic of friends who opted for a Kaypro with WordStar as the most economical way to get word processing power, or those who argued that only MS-DOS machines gave both top power even if more money was involved. Now, the lowly Apple // with WordPerfect is the hands down price/performance winner.

Many Apple owners should run, not walk, to get WordPerfect. If you are a lawyer, academic, or professional writer of any kind, this is in my opinion the only Apple // word processor to consider using.

If you are a new Apple owner who expects to do medium or heavy duty word processing, or a frustrated][+ owner who wasn't sure whether it was worth trading up to a new Apple, ditto.

If, on the other hand, you are a light to medium user who has mastered another product, and are satisfied with its performance (as I used to be with ScreenWriter and Magic Window), then you have no need to switch and should probably not have read this article. Better to remain happy in your ignorance.

For a family in which only young children use word processing, Bank Street Writer, PFS Write, or especially Magic Window may be a better choice because they are easier to learn (by the time the children start writing term papers, however, switch to WordPerfect.)

The most difficult case is the person who needs the particular virtues of AppleWorks--the ability to move rapidly and painlessly from data base to spreadsheet to word processor. Here the choice depends on whether you have reached the limits of any of the modules. Only you can tell whether the cost, time, and trouble of using a new word processor is worth it.

The only remaining question is when the Macintosh version will come out? ☺

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SOLVING DIAGRAMLESS CROSSWORDS WITH EDITOR

by Richard Fitzhugh

In the June 85 issue of the WAP Journal, L. Aronow gave a program for printing a matrix to be used for solving diagramless crossword puzzles. One difficulty with solving such puzzles is that one does not know initially in which columns to place the letters for the solution; this is found only by trial and error. Even using such a matrix, it is usually necessary to rewrite the solution several times by hand.

The simple fullscreen editor written in BASIC by Walter Lee (WAP Journal Nov. 81) and contained in the New Members Disk (Vol. 134) under the name EDITOR, can be used for entering solutions to these puzzles, with much less rewriting. However, the modifications of EDITOR described below make it much more useful for this purpose.

The text format in which I enter the puzzle solutions is shown in Figure 1. Each square of the solution occupies a 2x2 square of characters. On the upper line is the number (if any) of the square. In the lower right position is the letter. The 2x2 squares are separated horizontally by one space, to keep successive 2-digit numbers from running together. They do not need to be separated vertically.

Using EDITOR, the solution is constructed in this format by trial and error, moving the cursor left and right and up and down over the diagram. Since the whole diagram is usually too large to fit on the screen at once, one views it through a window limited by the screen size. The diagram can be moved up, down, and sideways within this window, to view different parts of it. To see the whole diagram at any time, one can send it to the printer with the command "PR#1".

Several changes make EDITOR more useful for solving puzzles. First of all, operations are entered into EDITOR either in the command mode or in the fullscreen edit mode. In the edit mode, EDITOR allows the deletion of only one character at a time from a line by entering Ctrl-D. Moreover, characters cannot be inserted into an existing line; instead, the whole line must be retyped. In moving a block of text to the left or right while solving a puzzle, it is more useful to be able to insert or delete a predetermined number of blanks in each line, and perform this operation on as many lines as necessary.

In the edit mode, one can move the text up and down within the window using the Ctrl-O and Ctrl-L operations. To move the text to the left or right, however, one must exit to the command mode, reset the left margin to a new value n using the "LS=n" command, and then reenter the edit mode. It is more convenient to be able to do this without leaving the edit mode.

To modify the program to do these things, first load EDITOR. Then type in the lines given in Listing 1 below, or EXEC them from a text file. (I did not bother to update the help display). The revised program is saved with the name EDX.

Deletion in EDX is performed in the edit mode as before with Ctrl-D, but now the number of characters deleted is

specified by the variable DE. The current value n of DE is displayed in the status display at the top of the screen as "Dn". You may change n by typing the new command "DE=n" in the command mode.

In EDX, typing Ctrl-B inserts n blanks at the cursor (where n is the value of the variable BL), and moves the subsequent characters in the line to the right. The current value of n is displayed in the status line as "Bn". n can be changed by typing "BL=n" in the command mode. To insert non-blank characters, insert the desired number of blanks and then type the characters over them.

To move the text left or right with EDX in the edit mode, enter Ctrl-Q or Ctrl-W. The distance the text is moved, as with the up and down movement, is controlled by the value of the variable IN, which can be reset by the "IN=n" command in the command mode. Entering n = 6 will move the diagram 3 squares up or down, and 2 squares left or right.

Sometimes separate blocks of letters in the puzzle diagram have to be interchanged horizontally. That is, a block entered initially on the right is moved to the left and also lowered one square, to preserve the sequence of square numbers. This cannot be done with EDX; it would require an elaborate block moving operation. In this case it is necessary to do some retyping, using the printout as a guide, with the new character insertion facility.

A useful property of diagramless puzzles is that the diagram is symmetric about a center point; i.e. rotating it 180 degrees leaves the pattern the same. Thus when the top half of the puzzle has been solved, the design of the bottom half can be constructed by symmetry. In the figure, the center point is at the "L" of 45 across.

The revisions described here could also make EDITOR more useful for other applications than puzzle solving.

Listing 1

```
1015 PRINT F$;FT$;" ";; HTAB 20: PRINT
      "L";LS;" C";LC;" P";CP;" I";IN;" B";BL;
      " D";DE
1400 IF A=2 THEN 6000
1410 IF A=17 THEN 6100
1420 IF A=23 THEN 6200
2025 IF LEFT$(I$,3) = "BL=" THEN BL =VAL
      (MID$(I$,4)); BB$ = LEFT$(B$,BL): RETURN
2030 IF LEFT$(I$,3) = "DE=" THEN DE =
      VAL(MID$(I$,4))
3730
4840 IF LS + H = 1 THEN L$(CP + V) =
      MID$(L$(CP + V),DE + 1)
4850 IF LS + H > 1 THEN L$(CP + V) =
      LEFT$(L$(CP + V),LS + H - 1) +
      MID$(L$(CP + V),LS + H + DE)
6000 IF LS+H > LEN(L$(CP+V)) THEN 1200
```

contd.

```

6010 IF LS+H=1 THEN L$(CP+V) = BB$ +
      L$(CP+V)
6020 IF LS+H > 1 THEN L$(CP+V) =
      LEFT$(L$(CP+V),LS+H-1) + BB$ +
      MID$(L$(CP+V),LS+H)
6030 GOSUB 90: GOSUB 500: GOTO 1200
6100 LS=LS+IN: GOSUB 1010: GOSUB 500:
      GOTO 1200
6200 LS=LS-IN: GOSUB 1010: GOSUB 500:
      GOTO 1200
10060 IN=6: BL=6: BB$="  ": DE=1

```

N.Y. TIMES MAG. 13 OCT 85, P.128 19X19

```

      1 2 3                4 5 6
      A R S                A L S
7     R A N      8 9 10    11
      T I C                G O A
12    A N A      13        14
      U S S R                R E L
15 16 17      18        19
T H E B I G A P P L E      E S S
20          21          22 23 24      25 26 27
H O T      G N P      A P P L E S A U C E
28          29          30          31
A V A      E T E      E L I      T R A
32          33          34 35 36 37
N E T      D E R      A S T I      T A R
38          39          40
E R E                S P I T      E N E
          41 42 43          44
          E L E M E N T      R E D
          45 46 47 48
          A N A P P L E A D A Y
49 50 51      52
A S S      C O L L I D E
53          54          55 56 57
G A T      I S L E                M A L
58          59          60 61 62      63
A L A      S H E A                M E D      A R E
64          65 66          67          68
M E M                G S A      A R A      O R A
69          70 71 72          73 74
A P P L E S E E D S      P I P      R A S
76          77 78          79 80
I C Y      A P P L E P O L I S H
81          82          83
E L L      M A R E      L I I
84          85          86
G A P      S T Y      E L K
87          88
E T H                D Y E

```

FIGURE 1

AN APPLEWORKS - RAMWORKS LIMITATION (AND HOW TO BEAT IT) by Fred I. Edwards

As a part of my effort for the WAP Disketeria I have been keeping two text files (A-I & J-Z) which contain all of the program titles, file types, lengths and volume numbers for Volumes 41 through 160. This involves about 2000 records, and all of the master catalog programs I could find were limited to about 1000 records and had rudimentary sort capabilities and no useful search commands. New disk catalogs had to be read into the A-I file and the J-Z file and inappropriate file names deleted from each.

Although what I had was better than nothing I decided to convert the two text files to one big AppleWorks data base, where I would have all its wonderful features AND just one file to contend with.

Since I have a 256K Ramworks card and the Super Desktop Expander disk (Ver 3.6) I foresaw no problem, since this is supposed to allow 4283 records per data base. Now we come to the problem and how to beat it. I carefully edited the two text files to get the entries into a form that would feed into an AppleWorks data base, joined the two files together and converted the new file to ProDos. All being well, I fired up Appleworks and chose "Make a new data base file from an ASCII (text) file" and sat back to await my new data base.

Imagine the consternation and frustration when the screen lit up with a message along the lines of "Unable to get file - exceeds Appleworks limit of 1350 records per data base". Thinking it might be my fault I used Super Desktop Expander to reconfigure a copy of versions 1.0, 1.1 and 1.2 AppleWorks, and still got the same result every time.

After I cooled down a little it occurred to me that perhaps Ramworks only changes one part of AppleWorks and wasn't changing the "New file" limits inherent in the program. Fortunately I had my two original text files back there on a DOS disk so I converted each of them to ProDos, went back to AppleWorks and made a new A-I data base and a new J-Z data base, with no problems at all since each data base had about 1000 records. Now the only problem was how to join the two data bases together - but that's what the Clipboard function is all about. I put both files on the Desktop and alternated between putting 200 records into Clipboard from J-Z, going to A-I and bringing the 200 records from Clipboard into that data base. Lo and behold, in five passes I had my 2000 record data base, and I can hardly wait to start playing with it.

It's too bad that AE's Super Desktop doesn't patch the part of AppleWorks that restricts the size of new data bases made from ASCII files, but you can get around it, and both Ramworks and AppleWorks are still terrific in my book. ☺

Book Reviews

by Robert C. Platt

A man who serves as a valuable role model and will always be an inspiration to me is Philip Morrison, the physics professor who writes the book review column each month in *Scientific American*. Morrison is probably the most widely-read man I have ever met. Each month he covers all of human knowledge from Asian art to archaeology to the Amazon to astronomy. His column adds distinction to *Scientific American*, and I believe the *WAP Journal* can benefit from his example by featuring a regular book review column. Unlike Morrison, I will attempt to confine the column to computer books and magazines (and I promise to exclude any books dealing with corporate takeovers.)

New Magazines

Believe it or not, the void left by the death of *Softalk* is being filled by a number of Apple-specific magazines. One of the more promising is // *Computing: for Apple // Users*. It is published by the people who write *Antic* magazine for the Atari. The premier issue offers an impressive array of authors including Margot Comstock Tomervik, former *Softalk* editor, and Neil Shapiro, MAUG SYSOP. The magazine features "how to" articles, product reviews, interesting applications, and full Applesoft Basic listings. (The listings are conveniently grouped in the back of the magazine. This is a pleasant change from some magazines which now require a reader to download the listing from a BBS.) [Subscriptions are \$11.97 for 6 issues. P.O. Box 1922, Marion OH 43306.]

A second, excellent Apple // publication is *Open Apple*, a monthly newsletter published by Tom Weishaar, former *DOSTalk* columnist. Tom continues his *DOSTalk* characters such as Uncle DOS, but expands his coverage to include ProDOS and AppleWorks. The magazine is clearly written, and does not skimp on the technical details. [Subscriptions are \$24 for 12 issues. 10026 Roe, Overland Park KS 66207.]

Disk Operating System Books

Speaking of Tom, his *DOSTalk* columns along with those of his predecessor, Bert Kersey, have been collected in *The DOSTalk Scrapbook*. This book is superior to the previous leader in the field, *Beneath Apple DOS*. The book is a suitable introduction for a beginner, and no knowledge of assembly language is necessary. All programs are written in Applesoft, and are available on a disk for \$10. Among the items covered here, and in few other works, are the changes that Apple made to DOS 3.3 in January and August 1983. The authors dub these versions DOS 3.3e and 3.3f. (By the way, the *WAP* library uses only pure DOS 3.3 and has avoided 3.3e and f.) *The Scrapbook* also covers the differences between DOS 3.3 and ProDOS. Highly recommended. [TAB Books, 266 pp. \$14.95.]

The *ProDOS Handbook* by Timothy and Karen Rice is a handy introduction and reference to ProDOS. With the Apple-written manuals now being separately marketed by Addison-Wesley, outside-Apple books are proving better

written and more reasonably priced. This step-by-step guide walks the beginning user through the "ProDOS User Disk" and "System Disk." It also covers sample Applesoft programs for using sequential and random access files. The final chapter covers the ProDOS machine language interface. Recommended. [Sybex, 278 pp. \$15.95.]

Well that's it for this installment. Returning for a minute to the fate of Prof. Morrison, it turns out that most of the Cornell faculty from the sciences to the humanities were very disappointed when he decided to move to MIT. A professor was designated to ask him why he was going. Morrison looked the emissary straight in the eye and said, "You know, Ithaca has never had a decent Chinese restaurant." ☺

HOW DO YOU STORE YOUR DISKETTES?

by Merle Block

When my collection of 5 1/4" diskettes for my Apple][+ grew to about 100, I found that I had the problem of how to best store them. A small number of diskettes could be stored in the boxes that came with the blank diskettes, but with a large number of diskettes I had to come up with a better method. I bought various sizes and makes of storage cases, but all seemed to have some fault in their use.

A diskette storage system should have the following characteristics:

- The system should protect the diskettes against adverse environments. Much has been written about diskette protection, which I will not repeat.
- The system should place the diskettes in categories for ease of access, e.g. the word processing diskettes, together with the word processing data diskettes, should be kept separate from the spreadsheet diskettes.
- The system should allow the diskette labels to be easily read. Pulling each of the diskettes out of a file box to find the required diskette eats up a great deal of time.
- The system should take up a minimum of space.
- It is desirable to be able to keep written notes with the diskettes.
- In some cases, the system must be locked to protect against unauthorized use, or change.

After much experimentation, the system which I consider to be the penultimate for me, is to keep my diskettes in a number of three-ring, looseleaf notebooks, which hold 8 1/2 x 11" transparent plastic sheets. Each plastic sheet has two pockets on each side (four pockets per sheet) for the 5 1/2" diskettes, and a small pocket next to each diskette for written notes. I have a separate looseleaf notebook for each category of diskettes: one for word processing, spreadsheets, games, utilities, etc. The size of each notebook can grow or shrink by adding or removing plastic sheets as necessary. The labels

contd. on pg 39

BEST OF THE APPLE ITEMS FROM UBBS

by Euclid Coukouma

Color Monitor //e

ROBERT W. WOOD JR ON 10/28 TO COLIN GRAY

The color is excellent and the 80 Column Text mode is good. I would recommend that you look first (and not take mine or anyone else's word for it). I have found that at first I did not like the 80-column mode but after using it for a little while I have found that it is fine (the screen is a little bigger). Clinton has the best price I was able to find at the time also.

Unidisk 3.5

TOM VIER ON 09/29 TO ALL

I got a copy of Sept. Applegram from a local dealer which has a bunch of info about the new Apple stuff. Here are some interesting quotes: "...The Unidisk 3.5 allows you to 'daisy-chain' another Unidisk 3.5 or Apple //c drive directly from the back port of the drive. "An Enhanced Apple //e is required to automatically boot from Unidisk 3.5. With an original (unenanced) Apple //e, you can boot from Unidisk 3.5 using PR#N." "To work with the Unidisk 3.5, the Apple //c must include a new ROM chip." "The Apple //e will work with the Unidisk 3.5 without modification, plugging directly into the interface card that is included in the ...accessory kit..." This seems to point to hardware compatibility with older drives, but how is the second head supported on this double-sided drive? The ROM change is to have the boot search for a disk drive only check three bytes vs. four on the the interface card. The Sept. Service mailing has complete details on the //c ROM upgrade. There is a free programmers guide available. Part No. A2L4037. I haven't seen the enclosed data sheet that came with the Applegram. Does anyone have that, or the service mailing? If the drive can plug into the //c, is the interface card the same as the Uni-Disk 5.25? (which is the same as the Disk II interface, except for the connector.)

MIKE UNGERMAN ON 09/29 TO TOM VIER

Tom, at the Pi meeting Sat, Tom Warrick stated that the new Unidisk and the old new Unidisk (5 1/4") use the same controller card, but will not operate with DOS 3.3. This confirms my suspicions which I stated earlier to you on Nov-apple's board that the Unidisk controller card is not completely transparent to the old disk drives. I believe Apple has used new PROMS which only work with ProDOS.

BRUCE FIELD ON 10/06 TO TOM VIER

The Unidisk 3.5 Apple //e accessory kit (Order No. A2C2002) contains a Unidisk 3.5 interface card and installation wrench and bolts.

ERIC RALL ON 10/07 TO ALL

The new 800K 3.5 drive is not compatible with DOS 3.3, CP/M, Logo, or unmodified Pascal. Cost is \$500 plus \$69 for a controller. Apple is suggesting that this drive is good for backing up your hard drive. I suppose that assumes your hard drive only contains ProDOS stuff. I have heard (heresy only) that the Sider is now available for \$595. Personally, I would rather have a 10 meg hard drive than an 800K incompatible 3.5 drive. But in all honesty, I would rather have a][+ with mods to suit my needs than a closed system Mac.

BRUCE FIELD ON 10/02 TO MORT FROME

The Apple 3 1/2 does not follow any standard (what standard?) other than their own. At present it is supported by ProDOS. Apple will probably never bother to support DOS 3.3 but others might. It is not clear whether it can be read by the Mac

although I'd bet it either can or will be shortly.

TOM VIER ON 10/08 TO ALL

To use the 3.5 with the //c you must have the monitor rom replaced free. I am waiting for the Apple //c Programmer's guide #A2L4037, but I believe the only change that involves the drive is to check only three bytes for a disk drive vs the old checking four (+1,+3,+5,+7) during coldstart. However, in addition to the rom swap, a jumper pad is cut and another made, according to the Clinton techs. And supposedly you can also daisy-chain a second 3.5 plus an external 5-1/2!!! I would love to know how that is done! The controller is basically a 2732 EPROM and I guess a IWM (ever tried looking at the innards of a demo with a sales type wringing his hands?). I captured the F/Ware and it has 7 images with slot dependent references mapped into the appropriate slot plus almost 2K in the \$C800 area. I haven't disassembled it yet, but it boots through a ProDOS read of block 0 and jump to \$801. There are some cute error messages too. "NO DISK TO BOOT", "NOT A BOOTABLE DISK" (it checks \$800 and \$801 for validity), and "NO DEVICE CONNECTED". These leave you in Applesoft with standard hooks. (No disk OS connected).

DOS 3.3 / Unidisk

PAUL H. SCHLOSSER ON 10/22 TO ALL, REPLIES: 1

From the November issue of 'Nibble' - "Microsparc Announces UniDOS 3.3" - supports the new Apple Unidisk 3.5. fully compatible with all DOS 3.3 utilities (except, and you knew there would be an exception, except utilities that make use of DOS 3.3 fixed memory locations and utility routines.) Check the November issue (page 5) for more details. Now, that didn't take long did it??

10 & 20 Meg Sider

WALT MOSSBERG ON 09/16 TO ALL

According to a message left on MAUG by an official of First Class Peripherals, they will begin shipping in October a 20 Megabyte-version of the Sider hard disk for \$995, vs \$695 for the 10 Meg Sider. In addition: They're now willing to send registered owners a free, upgraded manual of 142 pages. There's new installation and backup software. It's \$20 for Sider owners, \$40 for all others. They expect shortly to offer a 10 Meg tape backup device for \$695. The plan for a //c Sider has been placed on indefinite hold because FCP management isn't sure the //c market is strong enough. The FCP guy on MAUG, Lance Jacobs, urged people who want the //c Sider to be sold to Call FCP's 800-number and say so.

NICK VELOZ ON 09/25 TO ALL

I just found out from the people at First Class Peripherals that the Sider is on sale for \$595. They are also planning to release a 20 MB drive around the end of the year.

Quadlink

EUCLID COUKOUMA ON 11/01 TO SKIP MORGRIDGE

I was able to find out more about the Quadlink board from David Tate of Rantel Research in Laurel MD during a programming conference we had earlier tonight. He has a Quadlink installed on his IBM XT. (He has an Apple][+, an Apple //e, an IBM XT and an IBM PC.) These are his comments on the Quadlink that he uses: The Quadlink acts like an Apple][+ with a printer card in Slot 1 and with 1 or 2 floppy disk drives. (I assume that these are Slot 6, Drive 1 contd.

and Slot 6, Drive 2. The hard disk is not supported nor are any other peripherals such as a modem in Slot 2. Only 1 or 2 floppies. No 80 column screen. LoRes and HiRes graphics are supported. Pages 1 and 2 are supported in text and both graphics modes. Most copy protected software will run. Copy protection schemes using half tracks will bomb. It does not support a language card. Only 48K. It has direct connections to several cards in the IBM. It won't work on the Compaq and will probably not work on other clones. It connects to the disk controller, Printer, and Video Card directly.

//e Prices

TOM VIER ON 10/15 TO ALL

Gee, I've been looking for a spare II+ CPU, but now that a //e can be bought for \$745 new and I've seen used ones with a couple of cards in the paper for \$500, maybe my "spare" should be a //e! Have any other stores offered to meet/beat Clinton? Let's start a really good price war! Do I hear 30%...

SAM SWERSKY ON 10/18 TO TOM VIER

You might want to give Delta Gamma Computers a call. They're located in Gaithersburg. They sold me a bare bones //e for quite a bit less than the "new" price that you mentioned. Another person you might want to call (if you want a new //e) is Shelly Kramer, The NovApple group buy guy.

APPLE II Emulators

MIKE UNGERMAN ON 10/15 07:43AM TO ALL

Well, it finally happened! You can now emulate the][+ on the Mac. See details on the Mac software board, system two. Ad is in this months A+. Now what excuse can I use not to buy a Mac?

JOHN MASSEY ON 09/24 TO ALL

Checkmate Technology is advertising a //e emulator with up to 512K mem supporting Appleworks and decoding //e addresses for fall 85. Also have a 80/160 column card similiar to Ultraterm for the][+ that includes Appleworks patch and built-in PLE. Apple][+ forever. Infoworld had interesting article on an Applied Engineering competition between a 640K //e (Ramworks card) using Appleworks and a 640K IBM PC using Symphony to assemble a test small business application. The PC was only a third finished when the //e completed the test.

Franklin & AppleWorks

GENE GARNER ON 09/27 TO ALL

My first computer was a Franklin Ace 1200 - please don't laugh!. These days I only use my Mac but what do I do with my Franklin? I am very interested in trying to upgrade the Franklin to an Apple //e with at least 128K of memory and also finding a way to run AppleWorks. If anyone has done it or know of a way please leave a message.

MIKE UNGERMAN ON 09/29 TO GENE GARNER/ALL

First you need the POKEs to ProDOS to make it work on a Franklin. Check this months Incider; I've just installed them for a business associate and they work! Next you need the patches from Norwich (?) which make AppleWorks work on a][+ and you should be in business for AppleWorks. As for the 128K, there are several boards available that should work in your Franklin. I am planning on taking a chance with a "clone" 128K for about \$60 from Taiwan. Interested?

JOHN WAAK ON 10/10 TO GENE GARNER

Norwich Data Services has a series of patch programs called Plus-Works, Plus-Works XM, and Plus-Works XMP which enable you to run AppleWorks on an Apple][or][+ or Franklin. Prices are \$19, \$49, and \$???. VF Associates carries at least the first two. The XM version will make use of most

any large size ramcard to provide a larger desktop.

Apple ///

WILLIAM ROSENMUND ON 10/02 TO ALL

Just received latest flyer from Sun Data (800-821-3221). They are still selling reconditioned ///s, 256k w/monitor for \$749.00. They also have a good listing of /// software. Leave me a message or call them for more info. If you order anything, tell them you saw a notice on the Pi board.

WILLIAM ROSENMUND ON 10/19 TO JAMES LITTLE

There is a national clearinghouse for /// stuff in Utah. Sun Data can be reached at (800) 821-3221. They have software and hardware. Some examples are external drive at \$190, a Micro-Sci (dble side & density) at \$375 etc. Software - 3 EZ Pieces (great integrated pkg) \$135, Applewriter 2.0 & Apple-speller at \$75 each. Call them for more info. They also provide service at decent prices. There is still a lot around for the ///. Compuserve has a board for the /// with a lot of national traffic. Come to our next meeting at the Convention Center Inn, 12th & K at 7:30 pm on Nov 14th. New members show up at each meeting.

ALLAN LAMBER ON 10/24 TO ALL

It's finally time for me to begin putting together disks for our /// Disketeria. I have about 10 good disks to date. I will be arranging these disks, unless you tell me otherwise, according to subject matter (Games, Util. Graphics, Basic, etc.) and it looks like they all will be self booting Bus. Basic. I need: help putting together a new members (raw beginner) disk, any suggestions or comments, more public domain software or anything else you can add to this project. Call me at 301 589 7534 or on the BBS. Thanks.

Disk /// Pinout

TOM VIER ON 10/02 TO ALL

Could someone please post a pinout for the Disk /// drive with an explanation of anything different for the Disk][.

CARL BOWMAN, ON 10/24 TO TOM VIER, REPLIES: 0

I'll have to get back to you with the pinout, but when I expressed interest in the concept of putting an Apple Disk][on an Apple ///. I was told that the two disk drives have a different board in them, making them totally incompatible.

THOMAS RUSSOTTO ON 10/25 TO CARL BOWMAN

Ha. If the two drives are completely incompatible, then how did Clinton make an adapter to hook a DISK /// to a][?

TOM VIER ON 10/28 TO CARL BOWMAN

With the proper jumper plug in the daisy chain connector in the back, you can use a Disk /// as a Disk][.

Ramworks

SAM SWERSKY ON 10/02 TO ALL

I wanted to leave a message to any Apple //e owners who use A PCPI Applicard about a program I have just written that will allow you to use a Ramworks extended memory card as a CPM ramdisk. I have called it "Monster Drive" for lack of a better name, and I hope to be selling it in the near future (just want to polish the installation program and test it with the PCPI print buffer). It's a very neat little program, allowing you to have a 64K - 1 megabyte ramdisk. Makes all programs much faster and makes CPM downloading a real dream (download an entire megabyte without ever going to the "real" disk drives!). Anyway, if anyone's interested in hearing more about the program, just leave a message here. And if you have an Apple //e and Ramworks and were even thinking of buying the PCPI extra memory board, don't... until you've seen this ramdisk program.

contd.

NICK VELOZ ON 10/05 TO ALL

I just completed a timed test using AE Ramworks and Disk II on indexing a 500 record DB (157 characters/record) 20 characters deep. (DB was 78K, index 20K) and it is hard to believe the differences, from 7 min 37 secs. to 1 min 12 secs. The biggest savings is in using the ramdisk to hold the index itself. That means it doesn't take much RAM to really boost performance. Listing using the same data/index was from 10:04 to 5:29---big improvement. If you want more times or info leave message here.

CP/M

JOE ENGLAND ON 10/16 TO GEORGE KINAL

Hi George. Most, if not all, versions of Apple CP/M are very picky about what function is assigned to what slot, as you said. Starting with slot one (since Slot 0 is used for memory in][or][+, don't know about //e). Slot one is for the printer card. Slot two is for modem card or other I/O. Slot three is for 80-column card or high speed serial I/O to external terminal. Slot four is unassigned. Slot five is for second disk controller. Slot six is for primary disk controller. And slot seven is unassigned. Z80 card should go in slot four, five (if no second disk controller), or seven. Although some leeway is possible it is probably best to stick to the standard slot assignments.

Wisdom??

LEE RAESLY ON 10/03 01:01PM TO ALL

I finally figured out what BIOS means. Back it up, stupid!

THOMAS RUSSOTTO ON 10/12

Murphy's Law #32768. If a BBS is not busy on your first attempt, it's probably down.

Copies & Protection

ERIC RALL ON 09/25 TO ALL, REPLIES: 0

I want to start out by saying that I too disagree with pirating software. Now that I have agreed, I want to disagree. Copy protection costs you and me money. Any protection scheme worth its electronic media costs money to develop and implement. If you have ever attempted to normalize a copy protected disk, you are aware that some of the software involved in copy protection is far better code than the software it is protecting. Copy protection often slows down the

loading, prevents the honest user from making backups, prohibits the use of hard drives, eliminates customizing the software to better suit the users' needs and makes me nervous ever time my kid uses the software. The current trend of publishers to license only is just another attempt by profit grabbing companies to prevent the honest user from fully utilizing their machines capabilities. When you think about it companies like Beagle Brothers, Penguin, etc. don't copy protect their packages. Even AppleWorks is unprotected. I am not aware that their sales have felt any negative impact. But Logo, Reader Rabbit, Robot Odyssey, Notable Phantom, and other children software are. Give the user a break! Now they even have us indirectly paying for their advertisements admonishing against backing up the software we bought.

Future of Pi

THERON FULLER ON 10/15 AM TO ALL

There are a couple of major activities being undertaken by the Pi leadership which could greatly change the structure and nature of WAP. You should be informed about these and make your own views known. In the October Journal is an article about WAP's attempts to get some of Glen Echo park. If this succeeds, this would mean that much of WAP's resources would have to go to non-Apple related activities. The park service has made it clear that they're not going to give any facilities to a single-brand computer organization. So, either WAP would have to become the "Boston Computer Society" of the Metro Washington area, or participate in the formation of such a group. Either way, WAP resources would go towards the support of an umbrella organization. The second activity is entirely different, but similar in outcome. WAP is seeking to change its tax status from "not-for-profit" to "charitable organization". (The terms are my paraphrases, not the entirely correct technical ones.) To qualify WAP would have to put its profit-making activities (Group Sales, Disketeria sales, etc) under a separate, subsidiary organization. WAP would have to broaden the scope of its activities to demonstrate it wasn't an "Apple only" group. Again, WAP would have to become something of a "Boston Computer Society". I urge you to examine these activities and give feedback, pro or con. ☺

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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

January 9, 1986 - Program to be announced

SIG MAC Upcoming Programs

| | |
|-------------|-----------------------------|
| December | - No SIG MAC meeting |
| January 28 | - Demo of MacDraw software |
| February 25 | - Demo of MacDraft software |

MOLECULAR BIOLOGY ON THE MACINTOSH by Peter Markiewicz (Frederick Apple Core)

In the past few years, PCs have appeared in many places other than the business and home market. One such area is biological research. As a molecular biologist (translate this: cloning/recombinant DNA), I use computers primarily for analysis of the genetic 'code' determined by experiment. Mainframe programs which do the necessary calculations have existed for several years, but they are always difficult to learn and use. In fact, some laboratories have simply avoided certain types of research questions simply because they would have to use "that blasted computer."

I had little interest in PCs in the past, primarily because the relevant programs weren't any easier to use than mainframes. However, the appearance of the Macintosh promises to change this situation. In the rest of this article, I will discuss my personal experiences with two Macintosh programs in the area of molecular biology. One, The DNA Inspector, does many of the calculations formerly performed only by mainframes. I am currently testing the second system, Thunderscan, for its usefulness in data acquisition.

The DNA Inspector I: This copy-protected package is a collection of programs in Microsoft Basic 1.0 for use in DNA sequence analysis. The source company, Textco (27 Gilson Road, West Lebanon, NH, 03784), now has a Microsoft 2.1-version called The DNA Inspector II. The current version is \$129 list price and the new version will

retail for \$195. New features include editable restriction-enzyme tables with over 350 enzymes in the data base; cut-and-paste DNA sequence editing; M13 shotgun sequencing analysis; searching for direct repeats; multiple restriction enzyme digestions, and more. Each program in The DNA Inspector I can operate independently, but each has been "chained" so that it is possible to transfer the same data between programs. The early version of Microsoft Basic used for program development means that the Mac user interface is largely lacking.

On running The DNA Inspector I, (the first program of the set), the user is presented with a menu with options for: (1) editing DNA sequence files, (2) fusing DNA sequence files, and (3) creating control, random- sequence DNA files. One may also enter files with any word processor, provided they are saved in "text" mode. The interface is simple, with a series of text prompts, but it is much simpler to understand than the mainframe programs I have used for similar purposes. A minor bug exists in the DNA sequence entry function. If one tries to use Microsoft Basic 2.0, entry fails. This caused some problems, since the documentation claimed Basic 2.0 would work.

Once data have been entered, you can transfer to the second menu of chained programs. It is here that I found the package really useful. The options are: (1) search for restriction sites, contd.

(2) search for specific sequences, (3) palindromic sequence search, (4) nucleotide composition analysis, (5) dot-matrix analysis, and (6) translation of a DNA sequence to protein sequence. All of these programs worked quite well, and the graphical output was very good. The only complaint here, besides the lack of the Mac interface, is the time required for some of the calculations. The dot-matrix option (for localizing regions of code similarity between two DNA sequences) can take an hour for a sequence of a few hundred nucleotides. If the algorithm was directly executed in 68000 machine language (as the forthcoming update is supposed to do), this time could be cut a hundredfold. Another limitation is that output can be saved only by printing, rather than in a disk file.

In general, I recommend The DNA Inspector I. Despite the lack of a Mac interface, text prompts are clear enough so that even a novice will learn quickly to use the programs. Slow execution of some algorithms is a major, but not fatal, flaw. Finally, at present, it's the only game in town.

Thunderscan for Data Input; The Thunderscan digitizer, a product of Thunderware, Inc. (21 Orinda Way, Orinda, CA, 94563, \$229), allows high-resolution input of any image flat enough to fit into the Imagewriter. Much of the data of molecular biology consists of positional information related to the migration of nucleic acids and proteins during gel electrophoresis. Manually recording the positions of each 'spot' on a picture of a gel is time-consuming, and comparisons between gel runs, of paramount importance, are difficult. Digitizers and computers have been used to process such information, but setups are extremely expensive. For one mainframe system I am aware of, nearly a million dollars was spent to give only inefficient data recording /gel-gel comparison capability. Currently, I am investigating the capability of Thunderscan to record the results of gel electrophoresis. The procedure is as follows: A photograph, showing the positions and areas of spots corresponding to RNA oligonucleotides, is digitized by Thunderscan. The high contrast and brightness settings are used to subtract background "noise", and the information is saved as a MacPaint file. In MacPaint, the "stretch" function is used to correct for differences between individual gel trials, and the printed results can now be compared.

With this simple system, useful results can be obtained. Thunderscan is capable of recording gel images with resolution higher than a TV camera, and the brightness and contrast algorithms allow background to be subtracted efficiently. It can also enlarge an image. In one run, I was able to obtain a useful picture by enlarging a polaroid image of gel electrophoresis restriction fragments. The system is not ideal, however. The digitizer has problems distinguishing two spots which are very close on the gel. And neither this, nor any other computer digitizer, is sufficiently accurate to read DNA sequencing gels. Perhaps the best way to input gel data is through a graphics tablet rather than an optical digitizer. A large drawing area (at least 8 x 11) is required for this. I have ordered Macintizer from GTCO Corp. (see Aug. 1985, Macworld) and will be comparing its utility to Thunderscan.

The main feature that would make the system practical is a program which would allow stretching and overlapping images of more than one gel run, which MacPaint cannot do

efficiently. No such program exists, but I am convinced of the value of the concept enough to have bought "Inside Macintosh" and have begun learning the operating system. The ROM routines appear powerful enough to support sophisticated image-image comparisons, as well as more complex "stretch" functions, than MacPaint has. Once programming is complete (using the Megamax C compiler), it should be possible to compare oligonucleotide gel "fingerprints" for a fraction of the cost of a mainframe system.

Scientists that use the Macintosh in their work comprise a small but significant community. At present, many are using them only for the text edit/graphics capabilities. The release of Microsoft Fortran 2.1 for the Macintosh should allow many scientific programs to be ported from other systems with little modification. Besides the convenience, recent benchmarks reported in MacTutor magazine indicate that the Mac is significantly faster at number crunching in Fortran than the IBM AT and XT, even with hardware coprocessors! Clearly, there is considerable potential waiting to be tapped. I am interested in hearing from others who share my interest in doing science on the Macintosh. I may be reached at the following address: Dr. Peter Markiewicz, Department of Viral Biology, Virology Division, USAMRIID, Ft. Detrick, Frederick, MD 21701-5011. ☺

A FULL-FEATURED 1200-BAUD MODEM FOR \$175 by Lynn R. Trusal (Frederick Apple Core)

I, like most of you, receive junk mail. Most of it gets tossed into the trash without ever being opened. One of the mail order catalogs that I recently received is from DAK Industries, Inc., 8200 Remmet Ave, Canoga Park, CA 91304, (800) 325-0800. On page 9 of the recent catalog was the heading "1200 Baud Smart Duck". It turns out that the smart duck is a 300/1200 baud modem by ADC which is a division of BSR (the stereo and electronics people). They say it is made in the same factory and by the same people that make one of Hayes biggest competitors. The modem, as pictured, looks very similar to the Hayes and has eight status lights on the front panel. The article goes on to say that it is an auto-answer, auto-dial, auto-redial, 300/1200 baud, full- or half-duplex modem, and also has automatic tone/pulse switching. In addition, the owner of DAK felt that it had an improved monitor sound, more screen displays, and a help menu that his Hayes modem did not. It also comes with extras like day, date and time, an extra phone jack, and a modular phone cord. DAK claims that the DAC modem "acts on all Hayes commands." Other than that statement, they do not make an outright claim that it is fully Hayes-compatible. Since I have decided to give it a try but have not received the modem as yet, I cannot give you an actual user opinion.

The cost is \$169 plus \$6 for shipping and handling. You can call the toll-free number and place an orders 24 hrs a day,
contd. on pg 67

MAC Q & A

by Jonathan E. Hardis



Mac Section

Q: What are the consequences of not having a "surge suppressor" installed on my computer.

A: I don't know, and neither do 99% of those who are trying to sell you one. The FTC could have a field day with the false, misleading, and unsubstantiated claims in this field.

One company headlines, "How to keep your Macintosh from frying to a Crisp". The only external add-on that could offer such a benefit is called a "Fuse". There is nothing a surge protector can do to prevent the excess current draw or heat build up that could cause "frying". And even fuses don't protect you from faulty designs or inadequate ventilation. (Surge protectors respond to voltage transients, not currents). By the way, there is a fuse built into the Mac.

Later ads from the same company claim, "Eliminates [problems] caused by static electricity". But however well a surge protector may help static problems *on the power cord*, which I would argue is no problem at all, it would do nothing for the real engineering question of guarding components *on the circuit board* from a "static" discharge from the user. On the Mac, this would also include the keyboard and the sockets on the back as ports of entry. Believe it or not, well built power supply circuits can do a good job of filtering out the disturbances on the power line without external add-ons.

The real winner is the claim, "Eliminates [damage] caused by faulty grounding in electric outlets". Remember the cartoon of the fellow laying in the hammock, holding one end of it up with his free hand? That's what it would be like to fix an improper ground, without attaching a ground!

So, with claims that surge protectors do everything but cure baldness, what good are they really? I know of no statistical survey (which is what would be required in this case) which compares product failures with and without surge protectors. If you know of one, please tell me about it!

The problem, and the only problem which you can make a legitimate claim for, has to do with the digital electronic chips. Some of them can indeed be damaged by brief, severe excursions of the power line voltage. But the damage is strictly internal and not visible to the eye. "Frying" here is only a figure of speech. TVs, radios, and everything else electronic in your household have done fine (thank you) without surge protectors for years. If anyone tells you that an analog board failure in your Mac could have been prevented had you installed a surge protector, don't be as gullible as he was.

Lightning is certainly a problem. Surge protectors do seem to have a solid reputation in areas with lots of electrical storms, which add electrical noise to the power lines and, incidentally, any effective antenna as well (including conductors on the circuit board). But neither a surge suppressor nor anything else will guarantee protection if any nearby target or wire is hit by lightning.

I argue that far from making your computer invulnerable, the usefulness of a surge protector is greatly overstated. While sometimes useful in some circumstances, I wouldn't waste much time or money worrying about them.

Q: I use my Mac for legal work. As we propose changes to the wording of documents, traditional practice is to include the old wording, but lined-out, in the revisions. How can I overstrike a line through text? By the way, I use the Boston font.

A: There is no simple, general answer. Because fonts on the Mac have proportional spacing (that is, not all letters are the same width), you would have to worry about strike-throughs of different widths. I suppose that you would also want a solution that fits in well with the current word pro-

cessing software.

I can think of two different tacks. The first is to create a new font, a modified version of Boston, with lined-through characters. Then, you would use it in the document as needed. First, you would duplicate the Boston font and name it something else. Changing the new copy should be an easy process, no more complicated than using FatBits in MacPaint. But as I recall, the tools from Apple took some trial and error learning time. You can experiment with them: ResEdit and REEdit (on SigMac disk 21), and Font Editor (SigMac disk 11). Fontastic is a commercial product that would likely do the same thing, while being easy to use. The disadvantage to this method is the cost in disk space of keep another font around.

The other approach would be to add a new character (or characters) to your copy of Boston. Each font character has a width, but the dots in the character may extend beyond the bounds of the width. This is called "kerning". You could try to create zero width line-out characters which are all kern. In principle, such characters would overprint adjacent ones, though the trick might not work with all software. The disadvantage to this approach is that the overstrike character would be of constant width, while the underlying characters wouldn't be.

The Boston font has recently been revised, and renamed "Boston II". It is shareware; if you use it, you are expected to pay. When you get it, I would be happy to work with you on the details of the modification.

Q: How do I get to the special foreign language characters? How do I type the special Macintosh symbols: ⌘, ✓, ♦, and ⌘?

A: You cannot get to the special Macintosh symbols from the Keyboard. You can get them, however, by writing them into a file using Basic (or other languages). Then, you open that file and copy the characters to your document via the clipboard. The program is: OPEN "O",#1,"Characters"; a\$=CHR\$(17); b\$=CHR\$(18); c\$=CHR\$(19); d\$=CHR\$(20); PRINT#1,a\$,b\$,c\$,d\$. These four characters only appear in the Chicago font.

You can get to any Macintosh character by this method. Other valid arguments for CHR\$ are 32 (a space) through 216. 217 through 254 are reserved for future expansion in Apple's standard fonts. 255 is a special code for "no character". For more information, see the Font Manager chapter in *Inside Macintosh*. In particular, note the table on page 8, changing the caption from "\$9D through \$FF" to "\$D9 through \$FE". However, the easier way to get to the foreign language symbols from the keyboard is to type the diacritic mark first, followed by the letter it is to be associated with. Not all combinations are legal, though. The character ` (Option-e) can only be associated with a blank (for itself alone), a (á), e (é), i (í), o (ó), u (ú), and E (É). Likewise, the character ^ (Option-) combines with blank (^), a (à), e (è), i (ì), o (ò), u (ù), and A (À). The character ~ (Option-u) combines with blank (~), a (ä), e (ë), i (ï), o (ö), u (ü), A (Ä), O (Ö), and U (Ü). Option-i, ^, combines with a (â), e (ê), i (î), o (ô), and u (û). Likewise, ~, Option-n, combines with a (ã), n (ñ), o (õ), A (Ã), and O (Ó). The key assignments for the other foreign language characters, such as Å and Ø can be found directly by using the Key Caps desk accessory.

Q: I want to use a longer, uncurled cable to connect my Mac to the keyboard. Where can I get one?

A: Even though the connectors look like telephone connectors, telephone cords do not work. Jay Heller can make up

contd.

a new cable to your specifications, even in some wild colors. Call him at (301) 948-7440 before 10 PM.

Q: What is HFS, and what does it improve upon?

A: HFS stands for Hierarchical File System, and it is a new way of organizing files on a Macintosh disk. Introduced primarily to support hard disks, such as Apple's Hard Disk 20, it offers three main advantages over the Macintosh's current file system.

Every disk, both hard disks and floppy disks, are divided up into "sectors". A floppy disk has 800 sectors of 512 bytes each, or 400 Kbytes, total. A file is a named collection of sectors. The sectors must be kept track of, assigned to individual files or noted as unused. In the current file system (sometimes called MFS, for "Macintosh File System"), sectors are allocated two at a time (1K at a time). Scaling the method up to hard disk capacities, the system allocated much more space at a time, say 8 sectors (4K at a time). Since on average you waste half the size of the last allocation per file, this system was inefficient for hard disks. HFS allocates sectors one at a time, on both floppies and hard disks.

Under the current MFS, there is a fixed and inflexible area of the disk used to store the "directory", the names and information about the files on the disk. When the directory fills up, as it does when you have about 100 files on the disk, you can add no more files to the disk. Under HFS, the directory can expand to meet the need.

Under the current MFS, when you have a lot of files on the disk, it takes a long time to sort through and update the directory when you do anything to change it. Under HFS, you can split the directory into smaller pieces, each easier to manage. This is the hierarchy: The main directory has sub-directories, which in turn may have further subdirectories. The system only has to update the subdirectories being changed.

Under MFS, the Finder's desktop display shows folders, which can contain files organized by topic, and which can, in turn, be contained in other folders. But under MFS, the folder idea stopped there. Other programs knew nothing of the Finder's folder organization. Under HFS, the folders are known to all programs, and each folder is a subdirectory. You can organize the contents of a disk better to suit your work.

HFS will be available for all Macs after the new ROMs are announced in January. For the time being, hard disk users can load HFS into RAM using a special start-up disk.

HFS will NOT work on an XLisa under MacWorks.

Q: What other hard disks, besides Apple's, does HFS work on?

A: Eventually, it should work on all of them. For the time being, I know that Corvus has released a technical note explaining how to use HFS on their products. (Corvus users can contact me for more information.) I heard an unconfirmed report that it will work on the Tecmar. HFS has problems with the drives that now do automatic volume (drawer) sizing, such as the Hyperdrive. This will be unnecessary under HFS, anyway, as you can divide the large disk up into folders.

Q: Can I use HFS with floppy disks?

A: Yes, if you want to. To initialize a blank disk for HFS, when you are presented with the dialog to name the disk, type the name then Option-Enter. To reuse an old disk, choose "Erase Disk" from the Finder, and hold down the Option key during the erase process. If you are willing to experiment, try this procedure on your Hard Disk after backing it up. Twice.

Q: In connection with the new products from Apple, the Imagewriter II and the Hard Disk 20, I

System File, or Imagewriter driver) through "a friend". But it < fill in your problem here >. Why?

A: You were never meant to play mix-'n-match with the software from the System Folder. In the first place, a lot of things passed around by "a friend" are not final versions, but rather things that were sent out to developers for testing purposes. Secondly, you can not, in general, just replace one item from the System Folder without updating others in synchronization. That's why Apple gave you the "System Update" program when you got Finder 4.1 at your dealer.

As a rule of thumb, unless you know first hand that the system software came from the box of a production Macintosh (or LaserWriter or Hard Disk 20), stay clear of it. If you believe that it is a later version than what you have, substitute all of it for what you had been using. Understand further that systems with LaserWriters (AppleTalk) and hard disks (any brand) are likely to have special changes or additions to the System file or Finder, and often there is an "installer" program involved. If the change only involves a new Imagewriter or LaserWriter driver, try using the Choose Printer desk accessory.

The new Finder, 5.0, is out primarily to support HFS from the desktop. You must have both the new System file and the Hard Disk 20 driver on the disk also in order for it to do any good.

Q: Help! After I ran <fill in the blank> through the "System Update" procedure, I could not longer print with it.

A: Trash the Imagewriter driver from that disk, and using the Finder, copy the Imagewriter driver from the Update disk to it.

Q: Is HFS worth running out to get now?

A: No, as some of the software has problems with it (mostly minor). Unless you like being a pioneer and beating your own trail, you might as well wait until the software vendors make revisions. You will get it in due course when you get the new ROM and a compatible replacement System Disk next year.

Q: My hard disk has a print spooling feature. Why does it fail with the new Imagewriter driver?

A: The waters are very muddy in this area. I don't believe that there is an official release yet of a new Imagewriter driver, which will take advantage of the new features of the Imagewriter II. I've heard that the new driver will try to query the printer to find out whether it's an Imagewriter I or II, and the print spoolers today are not set up to handle this.

Q: Help! My XLisa won't boot from the hard disk. Do I have to reinitialize (erase) the hard disk and start over from scratch?

A: There was a good answer to this on CompuServe from Michael Holloway. I repeat it now verbatim, since I have no experience with an XLisa.

"When a damaged System file, Finder, or startup application keeps you from starting up with the hard disk, don't despair. There is another way to retrieve your star traveler. (This method will not work if the disk or the disk image of MacWorks is damaged. In that case you must reinitialize and reload the disk.) Instead of selecting the restart button, either with the mouse or by giving a return, hold the Option and Apple keys. Then press the Lisa's soft on-off button. MacWorks will request a disk by presenting you with a blinking '?' inside a disk icon. Insert the MacWorks system disk (2.0 will work) and reboot. Replace the System file with

contd.

startup application. Reboot, open Move to Top, or run the Finder by holding the Option and Apple key and double clicking the hard disk's Finder icon. If you never used the Lisa as a Lisa, this is referred to as using the 'environments window.' It applies to a Lisa running unLisa software, like MacWorks. While LisaOS accepts the Apple/on-off button combination to summon the environments window, I have not found that MacWorksOS accepts it. It does, however, accept this combination. I hope this saves someone some heartache. I have used it three times after messin' where I shouldn't be messin'."

Q: How do I connect the Imagewriter II to an XLisa?

A: Use the Apple //c - modem 8 cable.

Q: Help! MacLabeler doesn't work on old disks.

A: You have to have at least one folder on the disk. Create one. The fix and update, version 2.0, should be out by now.

Q: I'm shopping for a modem. Is the new Apple "Personal Modem" Hayes Compatible? How important is Hayes Compatibility?

A: The "Hayes Compatibility" issue is overblown. Your modem will work fine with any Hayes at the other end, and that is the only true "Hayes Compatibility" you have to worry about. "Compatibility" means the ability to work together, and two modems don't speak the Hayes commands to each other. On the other hand, if you mean "Software Compatibility", any well written, independent communication program will try to capture as large a market as it can by not limiting the user to one brand of modem. (That is, be "compatible".) In particular, the older Apple modem is one most authors tried to accomodate. The major exceptions are the programs produced by the modem companies and MacTerminal, whose bugs should be fixed in the next release. Even the defenders of Smartcom (from Hayes) say that the incompatibility is so small (having only to do with dialing) that you shouldn't worry about it.

There is no such thing as a "Hayes Standard". The commands used by the Hayes line of modems change over time, and Hayes is only bound to "Product Specifications" which they, themselves, can change as they please. The new Apple Personal Modem (the off-the-wall modem) implements the Hayes Smartmodem™ 1200 command set very well, as does the USRobotics Courier 2400 modem. In fact, since the Courier mimics the Smartmodem 1200 closer than does the Smartmodem 2400, some "Hayes Compatible" software works better with the USRobotics than the Hayes itself! (One local bulletin board said that Smartcom was in this category, but I find that a bit hard to believe.)

Q: What do you mean there is no such thing as a Hayes Standard? At least I can always take comfort in the IBM-PC Standard.

A: Sorry, but there is no such thing as an IBM-PC Standard either. The PC (and XT and AT) have companion documents which are detailed product specifications, and to which IBM commits the performance and behavior of their products. But they are free to revise or scrap their product specifications at any time. Further, there is no independent body to referee claims of what meets the "PC Standard" or not.

Take note, especially if you ever have to write a bid specification! Standards don't come out of single companies, they come out of Standards Committees formed of representatives of many companies. (ANSI, CCITT, and IEEE are

While "standard" can also mean "common" or "familiar", that is not what you mean when you say "the standard".

Q: What terminal programs offer the best simulation of the DEC VT-100?

A: MacTerminal and Versaterm perform the best on an interesting compatibility test. DEC has an On-Line sales system which exercises many of the features of the VT-100. If you call 800-DEC-DEMO (800-332-3366) using a 1200 baud modem, you will see the best of a VT100 in action, and the worse of the poorer Mac programs. Some of them, including Smartcom, exhibit minor bugs, some, such as Red Ryder 6.2, don't work, and others even bomb out completely.

You can also order good Imagewriter ribbons using this service. The DEC part number is LA50R-06 for a box of six.

Here again is a good example of today's theme. VT-100 refers to a particular product, and is a product specification. But this product is an implementation (incomplete, but with additional extensions) of the ANSI X3.64 standard.

Q: How reliable are the current crop of 2400 baud modems?

A: Despite concerns that 2400 baud modems would be more error prone than 1200 baud modems, that hasn't been much of a problem. However, most 2400 baud modems (including the Hayes, but not the USR Courier) use chips from Rockwell which don't work well at 1200 baud. If you intend to use a 2400 baud modem at 1200 baud too, tread carefully.

Q: In the August Journal, you gave a patch to allow use of the Corvus Omnidrive hard disk on the printer port. What more do you have to do to have the "Port Arbitration Byte" set properly?

A: Andrew Kessel looked into this, and so I'll reprint the complete, updated patch. Using the Resource Mover (SIGMac disk 13 or 22) or Resource Editor (SIGMac disk 21), extract the .OMNIDRIVER resource (DRVR 11) from the System file, and save it in a separate file. Then using FEdit (SIGMac disk 21, 17, or 9), make the following changes to the copy (Hex search, modify, they rewrite): 544B 5C4C to 4E71 584C, 544D 5C4E to 4E71 584E, 8009 2004 to 4009 2004, 21F8 02CA 02C6 to 21F8 02C2 02BE, and 11FC 0003 0290 to 11FC 0003 0291. Then, replace the driver on a copy of the boot diskette with the modified version. Thanks also to David Ramsey at Corvus for this information.

Q: When spell checking a MacWrite document (with Mac*Spell*Right), my Mac locked up and I had to reboot. Since MacWrite is "disk based", is there something on disk I can use to restore the file?

A: No, you have to revert to your last Saved copy. (Save often!) MacWrite uses the disk only for overflow storage. (It's faster that way.)

Q: I bought Habadex when it first came out. How can I get my hands on those folk at Haba?

A: Haba Systems is about to release Habadex version 2.0. They are proud of their work, and would like to improve their relationship with their customers. Larry Moss, Product Marketing Manager, has offered to make himself available. You can call him at (818) 901-8828, or write to him at Haba Systems, 6711 Valjean Ave., Van Nuys, CA 91405. And yes, version 2.0 has a perpetual calender.

Q: Some programs, such as Airborne, play high quality music from the Mac's speaker. Is

contd.

A: I know of three audio digitizers. Magnum Software, (818) 700-0510, has a product which can be combined with version 1.3 of Slide Show Magician. Fractal Software is marketing theirs through the Kette Group, (800) 328-0184, and the Berkeley Macintosh Users Group (BMUG) has published plans for the do-it-yourselfer in their current newsletter (the Office may have a copy).

Most Mac music programs, from Musicworks to Dennis Brothers' public domain Basic programs, use software to generate notes (tones, waveforms) in up to four "voices". The hardware doesn't look at sound that way at all. You can actually tell the speaker cone where to move to, about 22,000 times a second, in 256 discrete steps. So the sound isn't exactly hi-fi. The highest frequency you can generate is about 11 kHz, and the dynamic range is only about 24 dB. But for most purposes, you can have the same sort of fun with sound as you can with pictures and a video digitizer. You can add a voice, a dog bark, a drum, or whatever to a program that will accept that information. The main limitation is RAM, as each second of sound takes 22 kBytes.

Q: Help! When doing full backups on my Hyperdrive, with lots of drawers open, the mouse freezes up and the system locks up.

A: General Computer suspects a bug in the Backup software. If you backup to old floppy disks, erase them first. This should be fixed in the next release of the Hyper software.

Q: Help! OverVUE worked fine until I got my Hyperdrive.

A: ProVUE suggests you run the (so-called) XL version of their product until this is fixed.

Q: Help! ThinkTank 512, version 1.1, worked fine until I got my Hyperdrive.

A: Try running it in a Switcher partition of 256K or more.

Q: So what's with all these Hyperdrive problems?

A: The newer batch of Hyperdrives, including the 20 Meg version, have some hardware changes over the previous model. Be watchful when you hear discussion of what works or not on "a Hyperdrive".

Q: Are any of the 1 Meg (or more) non-Apple memory upgrades compatible with the Hyperdrive?

A: I hear that Beck-Tech's and Micro Conversion's are. However, unless you have money to burn or an urgent need, I still recommend that you wait until January to see what Apple is going to pull out of their hat.

Quickies: Excel's hard disk installation program doesn't work on a MacBottom ... Current version of Koala MacVision DA is 1.1, available on MAUG™ and from Koala (800) KOA-BEAR ... Thunderscanners don't work with hard disk print spooling enabled ... Both MacBottom and HyperDrive now use the Rodime (brand) drive mechanism. If yours strikes you as too loud (compared to similar drives), ask about swapping for another mechanism ... To connect a Tandy 200 to the Mac, jumper pins 4 & 5 at the Tandy end of the cable ... Smartcom II is now up to version 2.1D. Call Hayes for update information. ☺

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Happy Holidays!



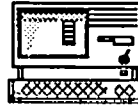
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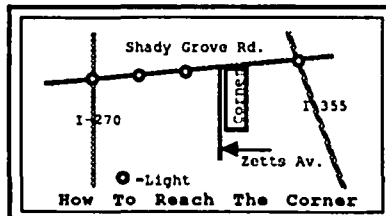
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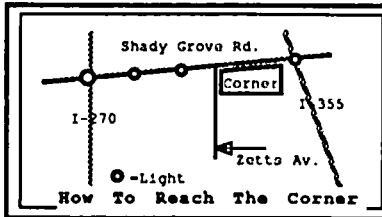
The Macintosh Software and Peripherals Source

The end of the year is almost here and I want to thank you for making MacCORNER what it is today, namely, the only Macintosh specialty store in the Washington metropolitan area. This year now closing has brought to us mac users much in the way of mature programs and peripherals, things we had waited long for (Helix, Jazz, 800k Drives, MDS, etc...), & new, exciting products (such as the LaserWriter, Excel, MacDraft, miniCAD, Total Music, Overvue 2.0, Switcher, 2 Meg boards) that have enhanced our machines beyond our expectations and truly set us and the Mac at the forefront of personal computing. 1985 was the year that consolidated the Mac. 1985 was the year that saw the MacCORNER dream become a solid reality. I would like to believe that we have in this small slice of time helped many of you achieve some of the objectives you had when you originally purchased your Mac. You certainly have helped us a lot with your continuous support, WAP members account today for almost 70% of our in store traffic! Thank you Washington Apple Pil
Whishing you a Very Happy Holiday Season and a Great New Year :

Raul Arriz, President



Stop by MacCORNER in December and enter our holiday giveaway contest. Lots of prizes will be awarded. To qualify just drop by and fill in the entry forms! Raffle Dec 24th



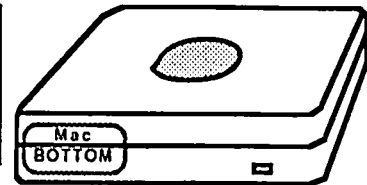
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MacNovice Column

by Ralph J. Begleiter

New Year's Resolutions

As too many people are already undoubtedly suggesting, December is a good month for taking stock of your accomplishments and your goals. Being a MacNovice, you might want to do a bit of the same with regard to your Macintosh relationship.

A few of you have now had your Macs for almost two years. Many of you are probably right around your first year anniversary. And an increasing number of you are still quite new at the Macintosh game. You've had your Macs for less than a year, and you're still discovering a lot about it. Take a look at what you can already do with your computer, with very little instruction.

- You've probably learned to use "formats" for writing letters and memos, so you no longer have to play with the margins and tabs every time you sit down to write.

- You may have begun using a "spreadsheet" program to help you manage numbers: your expense reports, your monthly bills, your tax records.

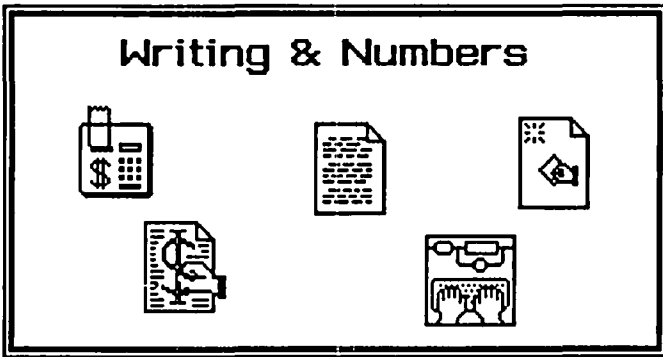


Fig 1

- Maybe you're already experimenting with one of the Macintosh data base programs, initially to keep track of photographs, documents, tax records, insurance policies. But you're discovering that the basic skills you're learning can be applied to data bases with thousands of records just as easily as those with only a hundred.

- You (and your children) are playing around with MacPaint or another drawing program, discovering that Macintosh makes an artist out of anyone!

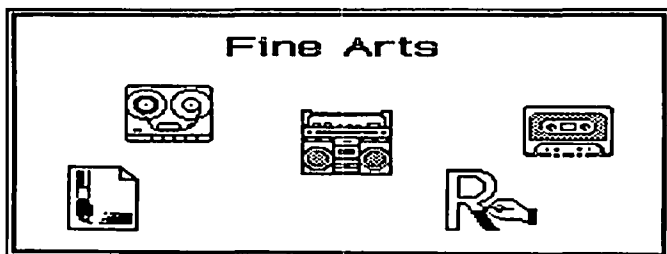


Fig 2

- You've discovered that a welcome relief from the work you do on your Mac are some of the games now available. Perhaps, if you've worked on other computers before, you're even a bit amazed at how Mac's graphics, animation and sound capabilities make some games more fun.

- If you publish a newsletter for a community group or an organization you belong to, you've found out how much easier it can be to produce a good-looking newsletter on the Mac, with (or without) some of the sophisticated publishing programs now available.

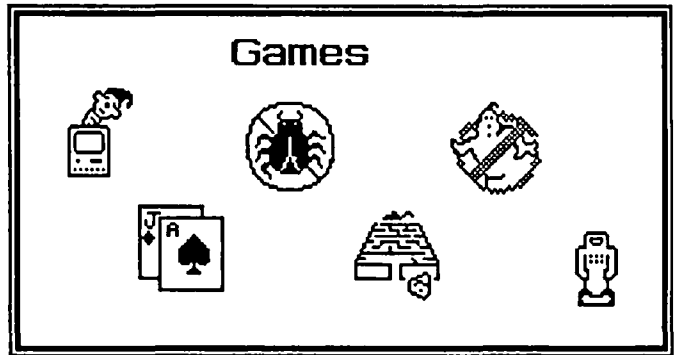


Fig 3

- Maybe you're musically inclined, and you've already pecked out a new tune on your Mac, noticing how much easier it is now to write music by computer than by hand. (You still believe your music sounds better when it's played by an instrument instead of the Mac, however!)

- You're probably beginning to spend some time poking around the Macintosh itself, discovering a bit of how it works. Maybe even the "novice" in you is finding the "puzzle" of computing to be a new challenge worth exploring. You're delving into the contents of the "System File" and the "Finder."

In short, with the software market now literally overflowing with programs for the Macintosh, you're no longer limited to "MacWriting" and "MacPainting." Because no one can afford to pay the software prices currently being charged just to explore, you're forced to make choices about what you do with your Mac. The choices are difficult, because they're all so tempting. (Software prices are coming down. The competition is getting hot. See how quickly the price of Jazz slumped?)

Maybe you've also had some had times with your Mac. You've almost hit the ceiling when the computer suddenly "crashed" in the middle of a complex spreadsheet you developed. (That was the night you learned to "save" early and often!) Or, you still can't figure out why Mac kept on telling you you didn't have enough memory...or had inserted "too many paragraphs" (!) in a document. Or you nearly threw your Mac through the window at midnight when you concluded that

contd. on pg 67

PROFESSIONAL COMPOSER™: A Review

by D. L. Porter

This is a review of the Professional Composer™ Software 1.10. After waiting many months for the package to come out and frequently discussing the capabilities of the package and its release date with the people at Mark Of The Unicorn, it was finally released! Luckily, before I spent the almost \$500 I had been saving for it, a friend lent me a copy to play with. I was both pleased and disappointed. Let me first present my application, then the features and the problems of the software.

I score music for international folk dances. This music must be readable by band members, must have nonstandard rhythms such as 13/16, and must change rhythm and key within the score. The words for the songs require letters not offered in the standard Apple fonts. (See The Foreign Font distributed by Apple Pi.) These special problems are in addition to all the standard music writing requirements of repeats, multiple endings, multiple voices, triplets, gracenotes, etc.

Professional Composer supports printing of musical scores quite well. Wandering through the menus will show its many features for doing this. In my opinion, it produces a prettier printed score than either Musicworks (which is very bad) or Concertware+. However, I think it is less than adequate for composing music. More on this as we go along.

When you first open up the software, you are presented with a window on a score that essentially reaches infinitely off to the right of your screen. (You have the option during the opening procedure of having parallel staves for multi-voice or multi-instrument music.) This window is your work area. There is a scroll bar at the bottom to allow you to move your window to any point along this score. You may also move to a specific measure number. As you put notes on your score initially, this window will move along the score so that you always are at the end.

first note in the entire score must be showing in the window. It does not play repeats nor multiple endings even though you can score them! (See SYMBOLS menu, below.) Notated grace notes are either not played at all or are played as regular notes. The volume must be set using the control panel in the desk accessories and is unaffected by the notations in the score. Tempo can not be adjusted at all and is also unaffected by the notations in the score. You have to imagine that your music is being played by someone who plays any note perfectly on their instrument but does not know how to read any musical notation beyond what note is to be played.

The printing options on the menu allow you to print the entirety of the score, a portion of it, or only one of the voices or instruments. When printing multiple voices, you get them on different, parallel staves - not one on top of the other as in Musicworks. Unlike other Macintosh software, however, it does not allow you to specify any margins, so your score fills the paper. I must use a reducing copier to get enough binding room to put the music in a booklet or notebook.

The second menu, EDIT (Figure-2), is standard and requires no comment.

The third menu, BASICS (Figure-3), begins to get you into the guts of the matter. It lets you set up the formats for your musical score with ADD STAFF and DELETE STAFF and connecting the measure bars between adjacent staves if desired with CONNECT STAVES. On each staff you can also set the symbology for the METER, TEMPO, KEY SIGNATURES and METRONOME MARKING. Almost any selection you can dream of can be created with these tools. They can be reset anywhere in the score without affecting earlier parts of the score. An important feature to me is that a piece can begin in 3/4, switch to 2/4 and then return to 3/4.

The INSTRUMENTS selection lets you write the score in the natural key of a particular instrument rather than the actual frequency/note matchup. A score written in the key of C for a B-flat instrument will sound right when played with a score written in B-flat for a C instrument. The name of the instrument can also be printed out, leading each line of the score. Voices, such as Soprano, are handled as instruments. Inside this selection you can also define the ranges and key of a "new" instrument. You cannot define any of the dynamics of its voice. They all sound the same when played in this package.

The next menu, SYMBOLS, allows you to bring up the six menus shown to the left in Figure-4. These show the richness of symbols that you can put on your score. When a symbol set is selected from the SYMBOLS menu, the appropriate column of symbols shows up along the left edge of your window. Selecting the same line on the SYMBOLS menu a second time makes the column disappear. These symbols are inserted by clicking a location on the musical staff to obtain an insertion point (position on the staff as well as position along the staff) and then clicking the proper symbol. This tends to be rather cumbersome: clicking the

| File | Edit | Basics |
|------------------|----------------|----------------------|
| New | Undo ⌘Z | Add Staff... |
| Open... | | Delete Staff |
| Close | Cut ⌘H | Connect Staves... |
| Save | Copy ⌘C | Key Signatures... |
| Save As... | Paste ⌘V | Meter... |
| Revert to Saved | Erase | Tempo... |
| Play ⌘P | Select All ⌘A | Metronome Marking... |
| Page Setup... | Show Clipboard | Instruments... |
| Print All... | | Measure Numbers... |
| Print Partlel... | | |
| Print Parts... | | |
| Quit ⌘Q | | |

Figure -2

Figure -3

Figure -1

The first menu, FILE, has the standard file operations (see Figure-1). The REVERT TO SAVED is a nice feature that MACINTOSH applications are starting to have these days. It acts as a global UNDO command, undoing back to your last saved copy. As well, you can PLAY or PRINT your score from this menu.

Playing music is probably the weakest point in the package. Playing your score will only play from the first note showing in the window. To play from the beginning the

insertion point on the right of your screen, then the symbol on the left, then the next insertion point on the right, and so on.

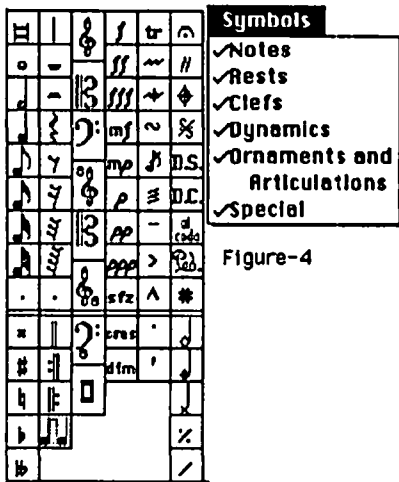


Figure-4

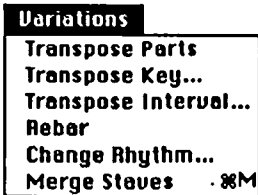


Figure-5

They have provided a more "speedy" method that requires the use of both hands but is limited to only the most basic symbols. You hold down one of the keys on the keyboard - q,w,e,r, a,s,d,f, z,x,c,v -- to select the assigned duration of the note, and meanwhile click on the staff to select the insertion point for that note. Holding down the SHIFT key as well will insert a rest of the same duration instead of a note. This is slightly awkward, but more convenient if you happen to be left handed. These keys also allow you to create single sharps, flats, naturals, and regular, end of measure bars. You can create chords with either of these methods by clicking on the exact same spot that the other note(s) is. This take some practice to get used to the cursor behavior.

As you input symbols, the window moves along the score towards the right. Your clef, meter, and key signature remain displayed in a "margin" on the left of your window. Active symbol menus (columns currently displayed) are also kept in this margin. Note that you can put repeat bars in the score, they just won't affect the play. The unusual symbol just below the repeat bars in the figure is a "space" to allow you to line up notes on parallel staves. During all this inserting, it is important to note that the software will not take it upon itself to do anything to your music. It will stay just as you have typed it; unlike other packages that will automatically combine notes or force the end of one measure and start the next.

The next menu, VARIATIONS (Figure-5), lets you play with your music once you have it entered; trying various transpositions and meter changes. The REBAR selection will force the score to adhere to the meter and is useful when you are composing and do not want to worry about the measure breakup until you are all done.

The EXTRAS (Figure-6) menu enables you to navigate around in your score and to add the various printing niceties. The SHOW GRID displays a lot of vertical bars so that you can line up notes in various staves. You must turn this off when you print because the bars all print as well. CHECK RANGE and CHECK RHYTHM searches your score for violations of either of these. It does not make changes for you, and this is the way it should be in my opinion. I do not like software that insists on protecting me from myself.

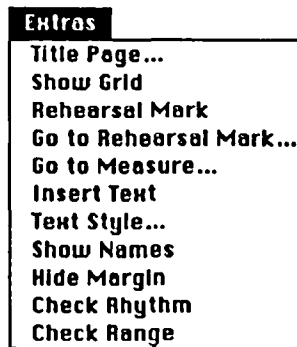


Figure-6

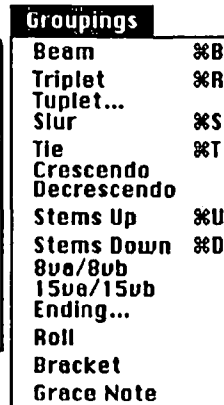


Figure-7

One very important aspect from my point of view is the ability to INSERT TEXT. Neither Musicworks nor Concertware+ have this feature within their software. There is a line above and below each five-line staff on which you can write your text. While you can adjust your TEXT STYLE, you have no choice but MONACO-9 as a font. Luckily they use the one out of the system folder rather than one in the application software so you can change it with RMOVER if you have made a substitute font. Do not substitute a larger font or it will write over other portions of the score.

Unfortunately, what you see on the screen is not what gets printed. The software puts measures on each line until another won't fit. Then it justifies the music that is on that line so that the entire width of the line is covered. On the last line in particular, one measure can be stretched across the entire page! The words are not stretched out in exactly the same fashion so that it is extremely difficult to line up words and notes. Your work area is like a window on an infinitely long score. The only time you can see on the screen what an entire page looks like is just before you print. Then it looks just like the page you see when you are printing out of MACPAINT and is just as unreadable.

There is only a single line for words above and below each staff. If you want to write in two verses or have a repeat of music but not of words, you must add a bass clef staff so that you can use the line below the treble and the one above the base. Even then the line for words is shared by such things as the tempo and is often intersected by the note stems and beams. One word of warning, if you leave the insertion point in a text entry mode when you go off to a PRINT option, the text in that measure will have overwritten whatever is at the beginning of the score when you come back.

The final menu, GROUPINGS (Figure-7), operates on a mouse selected range of the staff and affects all of the notes in the selection. (Note that GROUPINGS is laid out cleaner than I show it here. I squashed it to get it in the MACPAINT window so I could manipulate it with the Scrapbook.) Each time you do something from this menu, the range is unselected. This requires you to continually reselect the same range if you have several operations to perform on it. For example, if you had a measure of sixteenth notes that you wanted to join by a single BEAM, make sure it had STEMS UP, SLUR it and make it a CRESCENDO; you would have to select the same notes four times! There are many, more serious, problems with the software in the execution of any choice from this menu: it might make two overlapping

contd. on pg 67

TEN TIPS FOR USING THE UNDOCUMENTED POWERS OF MACWRITE

by Walter Rhett

Word processing software should support the four stages of writing: pre-writing, writing, revising, and publishing. These four stages are associated with different learning styles and have different software needs. These ten tips help the writer organize and gain control of the writing process in each of the four stages. These tips are aimed at making writing more effective, not at making the software more efficient. Some suggestions may seem like more work than is necessary, but effective writing is seldom achieved through shortcuts.

Ten MacWrite Tips

These tips do make writing easier and more fun. And that's the point of these tips: their purpose is to improve MacWrite's support of the writing process.

1. **Learn to wrist the mouse.** If you've been rolling the mouse around by hand, you're losing speed. Try this: without moving your hand, brush the mouse across the desk or pad, and lift your hand at the end of the brush stroke by rotating your wrist. Practice brushing and lifting in either direction. The mouse moves with every brush stroke. This technique increases your operating speed and lowers your space needs.

2. Learn new clicks and cuts:

a.) Words in text can be highlighted by double-clicking anywhere within the word. This works faster than dragging for single words.

b.) Highlighted text (by any method) can be cut by pressing Backspace. This procedure is faster than Cmd -X or the menu, but does not save a copy of the text onto the clipboard. The text *can* be retrieved by immediately using the Undo command in the Edit menu.

c.) Once a space is highlighted, simply begin typing new text. The old text will be cut automatically, and the new text will appear in its place.

d.) Shift-click is a fantastic editor that can eliminate dragging text. It's superfast! (And less nerve-racking than watching the text highlight sail across the screen!) Here's how-to: Click the text to be cut, and hold the shift key. Click the text again at the end. It becomes automatically highlighted between the first and second click placements. (Click again to un-highlight text. Clicking removes the highlight in reverse. Click again. The highlight returns, as along as the shift key is held down.) Try it. You'll be amazed.

e.) For "yes" answers to dialogue boxes, alerts, and windows, hit return or enter. This usually works on the first window of a series. Also, learn the standard keyboard commands included on each menu. Use them, they save time. (In saving or copying, be careful to hit the command key first.)

3. **MacWrite has great interface capacity with other software!** Use this open window: let desk

accessories and utilities manage and organize the writing and pre-writing phases. Before buying a commercial program, try the shareware or freeware programs available on the bulletin board services or through users' groups like Washington Apple Pi. They are inexpensive and they are efficient.

For example, I use File, a public domain utility (SigMac 9) that makes multiple windows available for word processing. I upload File to MacWrite for full editing features. To write these tips, I put one tip with its title in a File window and edited each window, working on one tip at a time. I left all the windows open and then copied text to MockWrite, a text editor desk accessory (CE Software). I did additional editing in MockWrite, which is slightly faster than File for long documents. Both Mockwrite and File can copy and save from MacWrite, and they both work exactly like MacWrite, which improves handling speed.

MockWrite (SigMac 19 & 22) is useful as an idea processor for outlines, notes, lists, clustering, and general organization (it substitutes adequately for Think Tank). Its companion program, MockPrinter, lets you print in draft mode while working with other applications on the desktop.

Another favorite--Bill Atkinson's Rolodex (SigMac 2). Copy it and enter a card for each idea or topic, reference, or source, using the rolodex as a note or project organizer. To accomodate every operator's need for numbers, Word Count reports the number of words, characters, and lines for any document on disk, and Extras shows disk and RAM memory space. (Both desk accessories are on SigMac 22. From the same disk, I install Trails. During breaks, it is infinitely more amusing and enjoyable than the puzzle.)

Improve the power of your planning, organization, and time utilization by plugging into MacWrite's open window for handy software assistance. You'll see new horizons in no time.

4. **A main strength of MacWrite is its font power.** MacWrite can print hundreds of fonts, the Macintosh word for combinations of tpestyles and sizes.

Use special graphics fonts like Cairo and Taliesin--add unique and unusual charm to your writing. Roses, computers, buildings, musical notes, planets, dinosaurs, and pencils are among the many symbols and images available. Experiment!

Park Avenue, for example, in 18 pt. outline or shadow is the style for holiday greeting cards. Helvetica 14 looks great to children; have them practice reading or writing with it.

Education and business favorites are Geneva, Chicago, Seattle, and New York. Monaco is superb for outlining, and making notes and lists. MockWrite uses it, in 9 pt., for text. (Obviously, Macintosh fonts are named for cities and places.)

To remember what a font looks like, print a simple sentence: try, "The quick, brown fox jumped over the lazy brown dog." - It uses every letter of the alphabet. (Ed. Note: Are you sssure?) Copy and paste; then select the font, format contd.

(bold, outline, etc.), and select the type size (9 to 24 pt.) from the menus. Or use the Font Librarian (SigMac 25); it automatically provides an example of a selected font.

As a power technique, at the cost of disk space, load ten or twelve of your favorite fonts onto a system disk which includes MacWrite, and then use the fonts for all-purpose revising and publishing. (Insider's tip: try 12 pt. New York with mini-windows in File, then try 12 pt. Geneva and Monaco. See the difference?)

Will the flourishing cottage industry in fonts support successful Macventures in "Home Publishing"? Anybody tried it yet?

5. Hide the cursor when you proofread so it doesn't distract your attention. Scroll the text beyond the lines you want to review in the window, and click. Now scroll back to your original position. The blinking cursor is gone, hidden in the text outside of the window.

6. Leave the formatting rulers visible when you enter text at the keyboard. Visible rulers speed formatting: setting margins, indenting, placing tabs, text justification, and line spacing are simpler, faster. Visible rulers encourage experimenting. Try different formats. You'll be surprised at the results. Did you know that rulers can be highlighted--click above the number line--copied and pasted into new positions to save formatting time?

7. Be careful when dragging text. Work precisely.

a.) Do calculate spaces between punctuation or words when editing. Precise cutting saves a backspace.

b.) Don't drag extra space at the ends of sentences, headings, or paragraphs; any text you insert into this space later will have these format characteristics, perhaps unexpectedly.

8. Save letterheads and standard formats in the Scrapbook. (Follow the Scrapbook transfer procedure in the MacPaint Manual.) Save form letters, too. Didn't think MacWrite would do form letters? Use Tip 2c, from "Clicks and Cuts." Paste in a letter with blank space. When you are ready to use it, highlight the space, and begin typing. Your text will insert automatically.

9. Buy good books for reference, and to stimulate your own ideas. Why read if you own a Macintosh? Books are user-friendly. Authors are deadly; some of the worst books I've read were written by somebody. Books vs. magazines? Books have a longer life expectancy. Books are unique in their ability to provide lots of practical information. Most Macintosh/MacWrite books have indexed and tabled reference sections, detailed information on commands and applications, a review of program features, thorough explanations of operations, practical hardware suggestions for glitches, and lots of users' tips. Two of the best for Macintosh and MacWrite are The Apple Macintosh Book, by Cary Lu (Microsoft Press, 1984), and MacPack: Creative Activities in MacPaint & MacWrite, by Sharon Aker (Ashton-Tate, 1985).

Other books worth checking out from the library (Apple Pi's own!) include Presenting the Macintosh (dillithium Press, 1984) by Merl K. Miller and Mary A. Myers (short, concise, clear; non-technical); and Lon Poole's Mac Work, Mac Play (Microsoft Press, 1984) for his directions for setting up a MacWrite rolodex. Using MacWrite and MacPaint (Osborne

McGraw Hill, 1984) by Tim Field is helpful.

10. Improve your typing speed. And for this purpose, the Mac has two of the greatest self-help typing software packages; Typing Made Easy (TME) by QED Information Sciences, and Typing Intrigue (TI), by Forethought. TME provides visual modes for learning, and displays charts and graphs of your speed and accuracy for each finger. These graphs of your finger skills are excellent reinforcements. Even for the experienced typist, there is a jolt when you see your weak keys and fingers glaring in front of you. TI is a combination arcade game and text mystery. It is fun and motivational, it easily captures your attention, and gets you involved. Successful practices earn points which can be traded for clues to the mystery. (Thanks to Pat Kirby, Apple Pi and EDSIG member, for the opportunity to review TME and TI.)

If you haven't typed at all and don't know the keyboard, the Diana King method uses the alphabet as its learning pattern, and it will have you up and running--actually touch typing at the keyboard--in an unheard of 50 minutes! (Write me for a copy of the method; please send a SASE.)

Remember that word processing requires a higher level of keyboard skills than does working on spread sheets or graphics. Improved speed of entry is a power feature which is in your hands.

Conclusion

Cary Lu is one of the most talented writers around. He wrote at the beginning of his chapter on Macintosh word processing: "Almost everyone who buys or uses a computer eventually does some form of word processing on it. . .

With a computer, writing and editing anything from a letter to a book becomes easier, faster, and far less messy.

"Instead of scrawling out drafts by hand or banging out innumerable versions on a typewriter, you type your text into the computer one time only, changing words and phrases on the screen as you type. The computer allows you to move paragraphs, delete, and add new sections. When you like what you've written, you can print a precisely formatted copy immediately."

The activities of writing's four stages are hidden in his enthusiasm and his praise. Brainstorming, organizing ideas, rewriting and editing, formatting and printing--all of these match the computer's and the writer's skills.

These ten tips update applications of writing skills, some computer, some human; for novices and professionals. Their purpose is to help you, if you are using MacWrite, to learn the skills of word processing and to know how to get power from those skills.

Of course, there is a final piece of advice. Continue the adventure of mastering technology, especially its creative and practical side. Along the way, it will be lots of fun, and ultimately, it will serve to make you a finer writer.

Author's Bio

Walter Rhett teaches English for the D.C. Department of Corrections, and is adjunct assistant professor at The University of the District of Columbia, in the Department of English Studies. A special student in Johns Hopkins University's School of Continuing Studies, he is studying micro-

contd.

computer writing applications.

His professional work has included curriculum and program designs in human development and adult education, work with both gifted and disadvantaged learners, and presentations on how to improve test taking skills.

Since 1975, his creative works have been read or presented at festivals around the country, including Spoleto USA, The American Dance Festival, the South Carolina Authors Party, and E. Ethelbert Miller's Ascension Series in Washington, D.C. The dramatic version of his children's story, "How We Got Rhythm," toured South Carolina in 1983, appearing in the Azalea and Greater Camden festivals.

Contact him by writing or calling: Walter Rhett, Department of English Studies, The University of the District of Columbia, 4200 Connecticut Avenue NW, Washington, DC 20008. ☺

1200-Baud Modem contd. from pg 55

7 days a week. They accept credit cards or checks. DAK's order number for the modem is 4334. DAK also offers modem cables for Apple //c's and //e's and interface cards for the //e, both of which include a modem software program. These packages cost \$29.90 for the //c package (order #4356 plus \$3 for shipping) and \$89 for the //e package (order #4357 plus \$4 for shipping) that includes a serial card. There is no reason why the modem should not also work with the Macintosh with the proper cable and a software program. DAK offers a 100% satisfaction policy and gives you 30 days to try out any of their products, with a full money refund if you are not satisfied. I know from past experience that they do refund your money if you are not satisfied.

Take it for what it is worth and check it out. If you do not already own a modem and have been wanting one, the 30-day trial for \$175 sounds like a good deal. ☺

Professional Composer contd. from pg 64

double the crescendo marks from a single exercise of the option, notes sometimes refuse to turn stems up or down, notes sometimes won't take a beam, ties may only appear on the top or the bottom and, therefore, intersect the stems, and so on. Selections from this menu will often not do anything, will affect other portions of your music outside the selected range, or just do peculiar things. It can even cause the software to lose track of what is being displayed so that insertions go somewhere other than where you see the cursor!

In conclusion, Professional Composer is great for printing a good looking score even with all the problems of GROUPINGS. Despite its name and significantly higher price, however, I would rate it below all other commercial packages that I have played with for actually composing music; both for ease of composing and for listening to your composition. ☺

MacNovice contd. from pg 62

the guys who make those text adventure games must be **crazy** if they think you'll "say 'egnie' to the genie" to move on in the game!

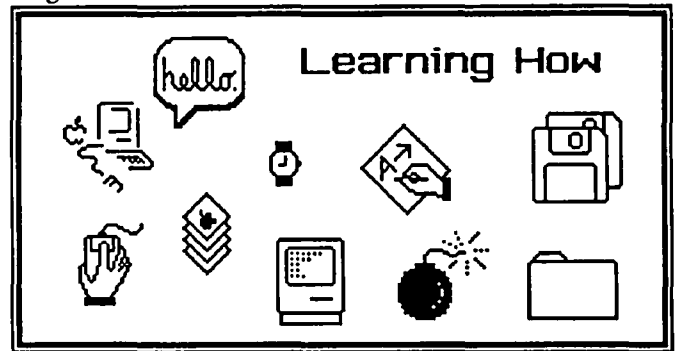


Fig 4

But, at the end of the year, you've got to conclude that you've grown. You've learned a new language. You can talk to your Mac (and with some new software, Mac can even talk back!) and make it work for you. Letters and numbers are easier. It no longer takes you an hour to write a simple letter. You wouldn't even dream now of sending your child to college without a small computer for those 20-page term papers! (Imagine typing them all over to correct a structure problem you discover at 4 am the day the paper is due!)

There's still a lot to learn. In the coming months, we'll explore databases. We'll see how to use the Macintosh desktop to help keep yourself organized. We'll discuss saving space on disks and maneuvering desk accessories so they're in the right place when you need them. We'll try to help you get out of some tight spots. And, we'll keep trying to hold down the jargon...to keep the Mac a user's machine, aimed at people who don't necessarily want to know how it works...just to make it work for them.

Again, I'll ask if you have any questions, or suggestions for columns about something you have trouble with. Or, maybe you've discovered a routine you use yourself which might be helpful to other "MacNovices". Please let me know.

Meantime, Happy Holidays! ☺



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MACADVANTAGE: Part III - Quickdraw Calls

by Robert C. Platt

In the October WAP Journal, I presented a unit that will assist in converting Apple // Pascal programs to run under MacAdvantage, which is a Pascal compiler for the Macintosh. This month, we will move away from translation problems to illustrate the use of quickdraw routines by an "analog clock" program.

USUS Meeting

First, let me report on the October 25, 1985 National meeting of the UCSD p-System Users Society (USUS). It was well worth the trip, and I was pleased to see so many WAP PIG members in attendance. We also had a good turnout for our MacAdvantage workshop--apparently, programmers can see the benefits of using MacAdvantage over the "designer series" implementation of the p-System on the Mac. The major benefits of MacAdvantage are: disks that are compatible with the finder, access to all Mac ROM Toolbox routines, and stand-alone applications that can run outside the p-System environment.

USUS is making its large Pascal software library available on 3.5" disks in both MacAdvantage and Designer Series format. The MacAdvantage disks need some translation, and I will make corrected versions available to interested MacAdvantage Addicts as I work my way through the disks.

Analog Clock Program

Paul A. Sand, a long-time PIG member, has written an excellent new book entitled, *The First Book of Macintosh Pascal* (Osborne/McGraw-Hill 1985, \$13.46 at Crown Books.) It introduces all the major elements of Pascal in the context of Think Technology's "Instant Pascal." (Think Technology's Pascal interpreter is different from the UCSD Pascal found in Apple // Pascal, MacAdvantage and the Designer Series.) Paul's book suggested this month's project--implementing an analog clock on the Mac. An analog clock displays the time using moving clock hands rather than a numeric readout. See pages 382-392 of Paul's book for a MacPascal version of the program.

The MacAdvantage version of the program is shown in Listing 1. It contains the following procedures. *Show_Ray* (*r,angle*) draws a line from the center of the clock with a length of *r* at the given angle. Procedure *Sec_Hand* calls *Show_Ray* to draw the second hand of the clock. Procedure *MinHr_Hand* draws the minute and hour hands of the clock. Finally, Procedure *Init* draws the clock face and the original position of the clock hands.

The program uses the standard *Mac Interface* file to retrieve the definitions of most of the ROM routines it calls. *MacCore* and *QDTypes* units define the data structures used to implement the Quickdraw routines. The program uses only certain routines from the *QuickDraw* unit, and the "selective uses" feature of MacAdvantage permits the list enclosed in parentheses to specify which parts of *QuickDraw* will be kept by the program. All other *QuickDraw* items which are not listed are automatically discarded in order to conserve RAM

memory during the compilation of the program. The program gets the current time from the Mac's built-in clock. To do this, units *TBTypes*, *OSTypes* and *OsUtilities* must all be used.

The program defines three constants. A constant is an identifier whose value does not change during program execution. *Pi* is needed to calculate the end-points of the clock hands. *Centerx* and *centery* represent the coordinates of the center of the clock. These values are in terms of the local coordinates of the default window. When QuickDraw measures a point in the current window, it counts the number of dots to the right and down from the upper left hand corner of the window. (You can change the reference point from the upper left hand corner to some other point by calling *SetOrigin*.) See pages 125-29 of *Macintosh Revealed*, Vol. 1. In this case, the clock looks best when it is 255 dots to the right and 125 dots down from the corner of the window.

The program uses two global variables: *old dt* and *dt*. These are records whose formats are defined in unit *OsUtilities* so as to interpret correctly, the information returned by the system's time clock routine.

Function *Button* is similar to the *Button(0)* function in Apple // Pascal. It returns true when the button on the mouse is pressed. I copied its definition directly to avoid wasting time with more uses from Mac Interface. If you use only one or two routines, this technique can speed up the compiler quite a bit. Because *Button* returns a result of *MacBool* rather than *boolean*, it must be called as *FrMacBool(Button)* to put the result in proper *boolean* format.

Procedure *Show_Ray* draws a line from the center of the clock. *MoveTo* is a QuickDraw routine that positions the pen at the center of the clock without drawing a line from the pen's previous position. *LineTo* draws a line from that position using the line's current thickness setting. Because the pen is set to *patxor*, *Show_Ray* will draw a black line the first time and erase the line if it traces back over the line. In other words, QuickDraw can use a magic pen that turns black dots to white and white dots to black. We use that magic pen here so that the same routine will first draw and then erase a clock hand. The end points of the line are calculated using simple trigonometry and the UCSD built-in *round* function that converts a real number into the closest integer.

Procedure *Sec_Hand* calls *Show_Ray* to draw a single dot wide line of length 130 dots. The angle of the second hand depends upon the current time.

Procedure *MinHr_Hand* calls *Show_Ray* to draw both the minute and hour hands. These hands are two dots wide, and the *PenSize* procedure from the *QuickDraw* unit is used to set the wider thickness. The constants *min_len* and *hr_len* are set to be shorter than the second hand. Note that the angle of the minute hand depends upon the minute value of the current time, but the angle of the hour hand depends upon both the hour and minute. This allows the hour hand to rotate slowly rather than jump once every hour.

Procedure *Init* draws the clock face. *TextFont(0)* changes contd.

the text from Geneva to Chicago. The *SetRect* call selects a region based upon local coordinates. Because *clock_rec* is designed to be called as a var parameter (with its 32 bit address on the Mac's hardware stack) the *locate* function must be used to translate between the p-System's 16 bit address scheme and the Mac's 32 bit addresses. (See the September MacAdvantage column for more details.) By itself, *SetRect* draws nothing on the screen. It merely moves coordinates into *clock_rec*. However, *FrameOval* traces an oval (in this case a circle) to fill the rectangle defined by *clock_rec*. Next, 60 lines are drawn to make the minute tick marks on the clock face. *EraseOval* is called to remove all but the last 7 dots of these 60 lines. The process is repeated leaving 12 hour ticks that are 15 dots long.

The next step is to label the hours with numerals from 1 to 12. Because the default window is used to show all writeln messages, *MoveTo* can be used to adjust the posi-

Listing 1

```

Program Analog clock;
{Inspired by Paul A. Sand - MacAdvantage version by R. Platt }
{Washington Apple Pi, Ltd, October 1985}
uses {$U Pas2:Mac Interface}
    MacCore,
    QDTypes,
    QuickDraw (patXor, PenSize, PenMode, MoveTo, LineTo,
                TextFont, TextMode, TextSize, TextMode, SetRect,
                InsetRect, FrameOval, EraseOval),
    TBTypes (EventRecord), {needed to use OsUtilities}
    OsTypes (QElemPtr, QhdrPtr),
    OsUtilities (DateTimeRec, GetTime);
const
    pi = 3.14159265;
    centerx = 255;
    centery = 145;
var
    old_dt, dt : DateTimeRec;
    Function Button: MacBool; external(-22156); {A974}

Procedure Show_Ray(r:integer;angle:real);
{draw line from center at angle for length r}
begin {Show_Ray}
    MoveTo(centerx,centery);
    LineTo(centerx+round(r*cos(angle)),centery+round(r*sin(angle)));
end; {Show_Ray}

Procedure Sec_Hand(var dt:DateTimeRec);
{draw second hand on clock face}
const
    sec_len = 130;
begin
    Show_Ray(sec_len,(dt.second-15)*pi/30)
end; {Sec_Hand}

Procedure MinHr_Hand(var dt:DateTimeRec);
{draw minute or four hand on clock face}
const
    min_len = 110;
    hr_len = 80;
begin
    PenSize(2,2);
    Show_Ray(min_len,(dt.minute-15)*pi/30);
    Show_Ray(hr_len,(dt.hour-3+dt.minute/60)*pi/6);
    PenSize(1,1)
end; {MinHr_Hand}

Procedure Init;
const
    radius = 140;
    digit_radius = 115;

```

tion on the screen of each numeral, with a write procedure used to display the numbers from 1 to 12. As discussed above, all further displays will feature the automatic erase *patXor* mode. A call to *TextMode* and *PenMode* invoke this feature. Finally, a call to *GetTime* moves the current time into *old_dt*, and the second, minute and hour hands are given their initial positions.

The main program is straight forward. After calling *Init* to set up the clock, a loop is repeated until the mouse button is pressed. In the while loop, the new time is moved into *dt*. If this time is different from *old_dt*, hands are erased and redrawn. Finally, the button is rechecked.

You may want to modify this program in several ways: (1) create a quit option from the menu bar to replace the call to *Button*. (2) add a digital clock display to the screen, (3) add clicking sounds every second and chimes every hour as sound effects.

contd. on pg 76

REVIEW CORNER



by James M. Burger

A Quartet of Reviews

REVIEWS

Finally, the accumulated programs and other Mac stuff are getting used and reviewed. It's been somewhat difficult since David Morganstein and I have not had many volunteers to help out. But, we would really like to hear from you, as we asked last month: if you would like to review products that Washington Apple Pi receives, or even if you are doing a review on your own.

Lee Raesly (Pi Director and unsung BBS hero) wins the award for remembering and telling me who said, "I don't care what you write about me just write it often and spell my name right." It was, I am ashamed to admit (as a former Urban Studies major born and brought up in NYC), Mayor Fiorello LaGuardia.

This month the column will be mostly devoted to reviews. To begin with, to show you that from time-to-time lawyers do like to have fun, is a review of a game (under special dispensation from Ron Wartow).

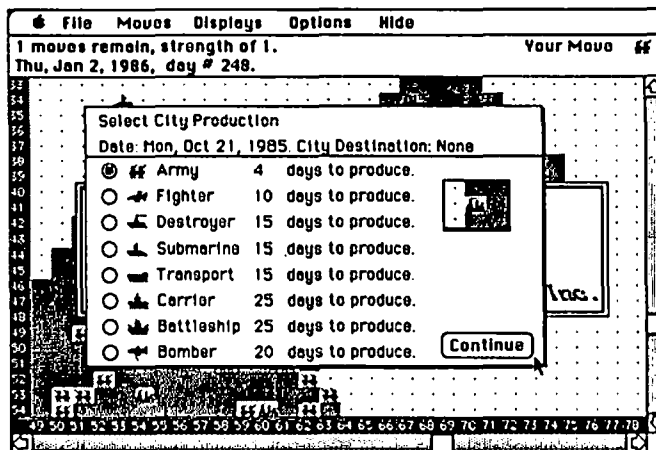
STRATEGIC CONQUEST

Years ago one of my two favorite Board games was Tactics II by Avalon Hill (the other was Monopoly). Tactics II was a surface combat simulation game, with mobile (cardboard) pieces representing ground units with varying strength, x points per unit. Occupied cities could produce new units. The outcome of engagements with your opponent was determined by a results table, varied by total strength and a die generated random number.

PBI Software has published Strategic Conquest which, while conceptually similar to Tactics II, goes far beyond it. Mac graphics provides excellent replication of boards and pieces. Strategic Conquest uses two significant Mac advantages over a simple board: (1) the Mac acts as your opponent, whose skill you can increase or decrease (although, if there are enough players around, I would like to see linking of two or more Macs with opposing human players) and (2) automatic limits on the movement of pieces (if, for example, you try to move a ship onto land, you get a simple warning - that move will cost you your ship - and it will).

Strategic Conquest begins by asking you to set the skill level from one to 15 (so far I'm at level 9). Then it presents you with a production dialogue box (illustration below). Available pieces are - Army, Fighter, Destroyer, Submarine, Transport, Carrier, Battleship and Bomber. Each takes a number of "days" (turns) to produce, from four for an Army to 25 for a Battleship (a Bomber's production time and power however, grows longer and greater as the game progresses). Each type has different movement rules and strength. The default piece is Army (see "playing tips" below). Strategic Conquest starts by giving you the first city. Each time a new city is occupied successfully you get a production dialogue box.

Then Strategic Conquest generates one of two billion possible world maps. But everything except your first city is blacked out. When the first piece is generated and moves, the area it moves into and, immediately surrounding area are exposed. The screen only shows you the portion of the



"world" where the currently active piece sits. You explore the land mass you begin on, occupy cities, produce pieces, then transport armies to other land masses and ultimately (sometimes before you are ready) engage with Mac's forces. If you out-manuever and out-fight the computer it satisfactorily surrenders to you.

The program performs well. It is disk based so there are frequent accesses to the disk (at least initially). I have been unable to successfully install the program on my hard disk (the sample Strategic Conquest disk can be installed). While the disk based program is not painfully slow, all Mac Addicts like speed. Also, I would like to use the program on a RAM disk. More, importantly, desk accessories are not active; you need the alarm clock to tell you to stop playing and go to bed. Even a moderate level game (three on up) can takes several hours to play.

So far, the only serious problem was the program freezing on me (it happened only once) - the arrow stopped moving and would not respond. Fortunately, I had saved the game not too long before. Thus, I was only out a couple of turns (a word to the wise - save often and frequently, not just Strategic Conquest, but anything you do not want to go back and recreate). The only other problem is that my version will not start from a saved game (it says no application available). But, it will start by highlighting the saved game icon, shift/click on the application icon and open from the File menu.

While not fancy, the documentation is adequate and does a good job of explaining the basics of the game, with liberal use of screen shots. In addition, Strategic Conquest makes good use of dialogue boxes (including a city production list, very helpful when you have more than five cities on different parts of the map) and a wide-angle view of the world. It is a fairly easy game to learn. But it gets tougher to beat at each level (I haven't tried level 15 yet - I guess I don't like to lose).

Strategic Conquest makes good use of the Mac interface. The map moves (or rather the screen moves over the map) via conventional scroll bars. Menus are solidly employed (the "Boss Coming" selection blackens the screen - a fake spreadsheet would be more amusing). Although command keys act

contd.

as alternatives for menu selection, Strategic Conquest does it for only one menu - "Moves." One reason I like MS Word is that almost all the menu selections have alternative command key choices; I would like to see more on Strategic Conquest. Finally, the dialogue boxes usually do not allow using Enter from the keyboard to close out the box. These are minor inconveniences, however, that barely detract from the game. In fact because the game is so good, they become apparent.

Playing Tips. The manual gives you the first one - produce a fighter first; it can explore a lot more territory than an army. Early on (but after you have several armies out conquering cities) build a destroyer. It is a good scout, plus it can sink opposing troop transports. Do not load your transport until the last minute (they hold eight armies; you will want to destroy any of the opponents transports first, if you can find them). Disperse your armies outside the port city until the last minute (losing a fully loaded transport to an opposing fighter, bomber or destroyer early on hurts). Speaking of bombers, also try to construct one early on; they have long range and help to destroy an opposing port city where the computer's troop transport may be. Before moving a newly built piece think about whether you want the city to continue producing the same piece or do you want to change the production schedule. The Patrol movement selection is useful for fighters protecting an important city. But rapid expansion to new territory is very important. Finally, when using bombers near your own pieces, watch the blast radius carefully; in late stages of the game a bomber's blast radius can be 49 sectors!

Personally, I find the entire board game to Mac interface extremely exciting. Strategic Conquest itself could be expanded by the author to offer even more varieties (e.g. different types of army, ship and aircraft pieces with differing capabilities, or a set scenario of a famous battle with the player choosing which side to represent). But more importantly, the interface sets a new standard for Mac games. It could be used for more than just combat simulation. In fact it gives me an idea for a game

If strategic and tactical war gaming interest you, I strongly suggest you take a look at Strategic Conquest. It will give you hours of interesting and stimulating entertainment. Strategic Conquest, PBI Software, Inc., 1111 Triton Drive, Foster City, CA 94404.

HIPPO COMPUTER ALMANAC

Hippopotamus Software has released a fascinating piece of software which portends powerful future information products. On a single disk, that will work on a 128 or 512K machine, they have packed 35,000 facts. But more interesting is the language parser that permits simple English questions to access the data.

When the program is booted for the first time, it asks for your location. Next time the program is booted it will tell you the time and what event of historical interest happened on that day. Then you can ask questions. If it can figure out your question, and it has the information, it will give you the answer.

Although the language parser is quite good, certain rules must be followed in asking for information. Numbers, for example, have to be entered digitally (not spelled out) and one thousand must be typed 1000 not 1,000. In some other respects, however, the Almanac is quite forgiving; for example, "Academy Joan Crawford." will be understood. The program gives the date of her award and the category. Some

words may be abbreviated, e.g. km for kilometer.

There are eight categories of information: Geographic, historic, unit conversions, sports, language, science, awards and prizes and miscellaneous. You can get distances between cities, populations, currency conversions, telephone area codes, capitals of states and countries, two-letter state abbreviations, and zip codes. It knows about U.S. presidents and what important event happened on a given date (e.g. "December 7th" and it will tell you "1793: Madam du Berry was guillotined 1941: The Japanese attack on Pearl Harbor").

Almanac can convert many different types of units: time, mass, distance, volume, charge, energy, etc. Although, it does not have a huge foreign language dictionary, Almanac will translate simple words in a large number of languages. In sports and culture, Almanac has information on championships and awards. Finally, you can add your own information to the program.

The above information could be helpful in the office. Knowing what time it is in a distant city or converting units, etc. could be useful. The Almanac's main drawback is that it cannot be installed on a hard disk. (Hippopotamus claims to be working on permitting installation on a hard disk, but will require inserting the "master disk.") Thus, it has to be booted from the disk each time. This is extremely inconvenient. I have not bothered to use it at the office. It would be easier to reach for a hard copy almanac, look up the answer, rather than: quitting the program being used, booting up Almanac, asking the question, quitting and returning to the original program. Ideally, if it could run as a desk accessory Almanac would be more useful. However, Almanac will run on Switcher 4.4 (it is on Switcher with MS Word as I write this).

What attracts me most is the language parser. With the prospect of large databases on Compact Disk Read Only Memory (CD ROM), the question of accessing that information becomes more important. CD ROMs with 550 Megabytes of information will permit not just almanacs but entire encyclopedia's on a single disk. In fact, Gary Kildall, the author of CP/M and founder of Digital Research is working on putting Grolier's Encyclopedia on CD ROM for Atari. (At the Federal Office Automation Conference I saw a CD ROM adapted for the // with Kildall's disk). Thus, a good "artificial intelligence"-like language parser will be very useful. Hippopotamus is quite good, but the program needs at least to run on a hard disk, and would be even better as a desk accessory.

Hippo Computer Almanac, Hippopotamus Software, Inc., 985 University Avenue, Suite 12, Los Gatos, CA 95030.

Paradise Mac10

Mass storage. Two words that several years ago, when I bought my first computer, a][+ (for you //e and //c fans, that was the predecessor, which itself was preceded by the plain][), I had no idea what that meant. Quite simply it means how do you spell relief, or the end to the floppy disk shuffle. Having an XLisa with 10 Meg of internal storage, I cannot imagine not having a hard disk drive. At home I had been living with a 5 Megabyte Corvus. While much better than disks, I was constantly bumping up against the storage limits of the drive. Thus, I was excited to get a 10 Megabyte Paradise Mac10.

(For NewSig Mac owners - the rest of you go to the next paragraph - the now standard Mac disk holds 400,000 bytes or 400K bytes. Thus, a 5 Megabyte, or 5 Meg for short, holds 12.5 times the amount of programs and files as a single disk. But, also you only need the system file once on the hard disk.

contd.

Accordingly, you save even more space. A 10 Meg, therefore, holds more than 25 400K disks.)

At the October SigMac meeting, we compared several drives according to a number of criteria: Performance, Flexibility, Utilities and other issues. We compared the Corvus, Techmar, Mac10, MacBottom and HyperDrive. The Paradise Mac10 compares favorably with those drives. (Unfortunately, we did not receive an evaluation copy of the new Apple HD20. Until we get our hands on one, the jury is out, but the Hierarchical File Structure (more on HFS later) and speed appeared good.)

Performance. Setting up the Mac10 is simple. It connects to either the modem or the printer port. Using the printer port frees up the modem port for telecommunications. The ImageWriter connects to a port in the Mac10 which provides printer spooling (see below). It connects to its own power supply, but turns on automatically when the Mac is turned on. A boot disk is needed to launch the drive.

The Paradise opens Microsoft Word in 12 seconds from the desktop versus 22 for the disk based version. But the true performance increase is in accessing 800K of Word files without searching for disks or going from program to program without switching disks, including back to the disk you booted with to use its system files or option/command/double click on the finder of the new application to avoid going back to the boot disk.

For now 10 Megabytes is adequate. Obviously, we all want more speed, more memory and more mass storage. I suppose when I get a 20 Meg disk (Paradise has just announced a 20 Meg drive), I'll find a way to fill most of that. But even at work, I still have over 2 Meg left in my 10 Meg disk (but I do judiciously prune files, which is a good idea anyway). But, we all need to get used to the idea of large amounts of mass storage. Soon we will be dealing with compact disk read only memory (CD ROM, as discussed above) with 550 megabytes, and rumored write once read only memory (WORM) of 660 Megabytes (one manufacturer claims 3,000 Megabytes - 3 Gigabytes - of storage on a 12" disk). But, as a constant Mac user, I am perfectly happy with 10 Megs (I wouldn't, however, kick a 20 Meg out of my study).

With one scary exception, the Mac10 has been very reliable (including carrying it to two SigMac meetings). But, one night, while attempting to meet our intrepid editor's deadline, the red light came on steady and would not go off. This means the drive is not reading data. It flashes red when it is reading and then the green light stays on until the next time you access data. I tried everything. The folks at Paradise were very helpful, but did not have a fix over the phone. Jeff Frankel, of Paradise, offered to read the data off the drive if I sent it in. Desperate, I prepared the Federal Express forms. (I had backed everything up but the last version of my column - when will we ever learn?) But, lo and behold, 24 hours of rest and the Mac10 worked perfectly.

Flexibility. Volume create is very simple. There is a Mac10 Manager with a well laid out dialogue box with a scroll bar to increase the size of the volume to be created. The minimum size is 400K. The scroll bar allows increments as small as 10K. Volumes, however, cannot be resized. A new volume must be created and old data and/or programs moved to the new volume and the old deleted.

The drive, as noted above, is reasonably portable. It has a software controlled shut down with head locking (very important if you are going to move the drive at all). It is the length

of the Mac, but only about 1/3 as high and 1/3 as wide. It comes with a separate power supply about half the size of the drive. It is not, however, as portable as the MacBottom or HD20.

Volumes are easy to mount (because of the limitations of the Mac Finder, i.e. the number of programs and files it can keep track of, to use the full capacity of a drive, it must be segmented into volumes. The Mac10 Mounter is a desk accessory and can be conveniently opened inside applications programs. Thus, if you are in Word and need a file in an unmounted volume you can pull down the desk accessory menu and readily mount the needed volume. The "word" is that the new Mac ROMs to be released in January will support Hierarchical File Structure (HFS). HFS will eliminate the need for volumes and separate mounting. My understanding is that the Mac10 will support the new ROMs.

Utilities. The Mac10 has a 400K print spooler. My one great disappointment in the Mac (as you no doubt can tell by now, I am an ardent Mac supporter) is the printing process. While the output is far superior to any other Micro, the process is slow. This is particularly annoying since you cannot do anything else with the Machine while it is printing. The Mac10, while not eliminating the problem, helps by creating a printer buffer in the drive. It does free up the machine quicker than operating without a print spooler.

Backup is one area where the Mac10 is particularly weak. It has no backup utility. Each program and file must be moved by hand onto a disk. I keep learning the hard way that backing up is a must. Ideally, a hard drive should have a simple, easy to use backup utility. Such a utility should allow updating by changed files.

Price. When the Apple HD20 was announced with a list price of \$1499, a number of the drive manufacturers have dropped their prices. Paradise is no exception. The list price of the Mac10 is \$999 and the new Mac20, \$1399.

THE PRINTED WORD

Microsoft Press recently released a new book by David and Richard Kater called *The Printed Word*. While Microsoft's Word manual is far from inadequate, I recommend this book for both the novice and intermediate user. As the title suggests, the book stresses the printing side of Word. But don't let this fool you, it is a thorough guide to using Word.

My only major objection, not fatal to my recommendation, is the first 20 pages, which gives such complex advice as: "First turn on the power switch, located at the back of the Mac just above the power cable plug." Please have more respect for Mac users. I know very few that haven't taken the "Guided Tour" before tackling Word (those that haven't either started on Lisa or have used someone else's Mac). I respect a book or manual, like OverVUE 2.0, that tells you that should have taken the guided tour already and assumes that you have.

Once past page 20, the book turns solid. The authors take you through Word's features through a series of exercises: a first draft, a form letter, a report, a newsletter, a business form and a brochure. If you work through each of the exercises (the brochure requires special equipment) you will come out a Word expert.

Several things about the *Printed Word* annoyed me. First, the authors never made it clear which version of Word they are working with (I assume 1.05, at least, since there is extensive reference to printing with the LaserWriter). Second, there is too much in the main body of the book on the basic printing fundamentals. While it is good background information, it is

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not necessary to proficient use of Word, and would be better placed in an appendix.

Third, while the book gives excellent and thorough treatment of the high ticket Laser, it ignores hard disk drives. Any serious use of Word, especially merging, graphics and forms, without a hard disk is very difficult. Thus, tips and help for readers with hard disks would have been welcome. The final negative comment is the gratuitous endorsement of other Microsoft products (e.g. File) without serious comparison with competitive programs.

But those negatives are far outweighed by the positives. The section on print merging is quite good. The exercise teaches how to build a merged letter with multiple recipients with differing greetings and text section.

The Printed Word contains an excellent section on using fonts, including a number of charts illustrating differing fonts (not just the original Mac fonts). The Printed Word also threads advanced key stroke combinations throughout the exercises. (One of Word's strengths is its extensive ability to substitute key combinations for mouse moves).

I highly recommend The Printed Word. The negatives, while annoying, are overwhelmed by the books strengths.

The Printed Word. \$17.95. Microsoft Press. 10700 Northup Way, Box 97200, Bellevue, Washington 98009.

PRODUCTS RECEIVED:

Unless otherwise indicated, the products are for the Mac and the price, if indicated is the suggested retail price.

SOFTWARE -

Future Design Software, 13681 Willamette Drive, Westminster, CA 92683. "Strictly Business" Accounting System - Module 1 General Ledger. First of seven module accounting system which utilizes Smoothtalker to read back numbers and alerts; the other modules are accounts payable, payroll, job cost, inventory control and order entry.

Digital Etc., 1749 14th Street, Santa Monica, CA 90404. Maccountant. A general ledger based package with a complete systems journal; complete accounts payable, purchasing, invoicing and payroll with look up tables coming.

Pinpoint Publishing, Box 13323, Oakland, CA 94661. Pinpoint AppleWorks Desktop Accessories. \$69. For the //e or //c. Nine desktop accessories for AppleWorks: graphic/text merging, cut-and-paste tools, communications window, appointment scheduler, auto dialer, envelope addresser, calculator, note pad and typewriter.

Silicon Beach Software, PO Box 261430, San Diego, CA 92126. Enchanted Scepters. \$39.95. Text-graphic-sound adventure game for Mac. Accessory Park 1. Paint Cutter, MacPaint Rulers, Screen Saver, QuickEject, Cursor position coordinates and Silicon Beach font.

Sierra On-Line, Coarsegold, CA 93614. The MacOneWrite - Cash Disbursements Module. One write accounting system for the Mac, other modules include accounts receivable, payroll and general ledger.

INFORMATION RECEIVED:

HARDWARE -

Great Wave Software, P.O. Box 5847, Stanford, CA 94305. ConcertWare+Keyboard. \$219.95. Keyboard for use with ConcertWare+ (Not MIDI compatible).

Monogram, 8295 S. La Cienega Blvd., Inglewood, CA 90301. A+ Mouse. \$89.95. Optical mouse, offering "maintenance free...most reliable tracking available." Special

offer of Mouse Systems mouse by Monogram \$59.95 "while supplies last," coupons available (while they last at the office, if the office runs out, let me know).

SOFTWARE -

Brainstorm Development Corp., P.O. Box 26948, Austin, TX 78755. Overture. \$99.95. A cash-flow analysis tool for either the 128K or 512K Mac, with net present value, internal rate of return, growth rate of return, and other methods of analysis.

CMA Micro Computer, 55722 Santa Fe Trail, Yucca Valley, CA 92284. Dental Management for Macintosh 512K. \$1,995.95. A hard disk dental office management and billing package.

Great Wave Software, (see above). ConcertWare+MIDI. \$139.95. Enables you to record from your synthesizer, display the piece in standard notation and edit the music. ConcertWare+Music Disks - Vol. 1: Instrumental Favorites, Vol. 2: The Art of Fugue and Vol. 3: Christmas Favorites. Music for ConcertWare. \$15.00 each. Vol. 1 includes Joplin, Gershwin, Bach, Beethoven; Vol. 2 - complete work of J.S. Bach with composition notes; Vol. 3 - traditional Xmas music. Comet Halley. \$29.95. Turns Mac into a viewing Guide for locating the Comet from 8/1/85 to 7/31/86.

Lionheart, P.O. Box 379, Alburg, VT 05440. Business Statistics. \$145. Experimental Statistics. \$145 (Both Business and Experimental - \$200). Multivariate Analysis. \$150. Exploratory Data Analysis. \$75. Quality Control & Industrial Experiments. \$125. Forecasting and Time-Series. \$145. Sales and Market Forecasting. \$145 (latter two - \$200). Decision Analysis Techniques. \$110. Linear & Non-Linear Programming. \$95. PERT & Critical Path Techniques. \$95. Monte Carlo Simulations. \$125. Optimization. \$110.

Mindscape Inc., 3444 Dundee Road, Northbrook, IL 60062. Racer. \$44.95. Available for the // and 128K Mac. "Artificial intelligence" with 2800-word vocabulary and grammatical expertise program that "converses with computer owners."

International Solutions, Inc., 910 West Maude Avenue, Sunnyvale, CA 94086. Mouse Budget. \$69.95. From the folks that brought Mouse Calc from France, also have imported a budgeting and finance program. Mouse Word. \$129.00. Mouse-driven word processing and communications program. Both for the // only and require a mouse.

BOOKS, ETC.

Info Books, P.O. Box 1018, Santa Monica, CA 90406. The Complete Macintosh Sourcebook by Doug Clapp and Pat Ryall.\$19.95. "Whats good and what's not good in Macintosh software, hardware, accessories, books, magazines, programming languages..."

BEST OF THE MAC ITEMS FROM UBBS

by Regina Litman

Mac Hardware

Imagewriter II

TOM DEMAY TO ALL 10/06

Does anyone know if the Imagewriter II needs a new driver for the Mac? Are the control codes the same as those for the original Imagewriter? Is the cable the same as the old one? Are the new Imagewriters, like the disk drives, not available? Thanks...

TOM VIER TO TOM DEMAY 10/07

The new Imagewriter is supposedly 100% downwardly compatible. The cable I saw at Clinton had an AppleTalk type connector and is extra. What is the word on doublesided drives for the Mac? And the ROM upgrade?

BRUCE TROEN TO TOM DEMAY 10/10

The new Imagewriter II's are available now. I have seen a new Imagewriter II driver on a BBS but did not download it since I do not have a new printer. However, the question could be asked if the new Imagewriter driver is used just for the new printer or if it replaces the old driver and can be used with the original Imagewriters. Does anyone know the answer?

TOM WARRICK TO BRUCE TROEN 10/26

Bruce: Apple says the old Imagewriter driver will work with the new Imagewriter II. It will not, however, take advantage of the new features of the II, such as color, sheet feeder, etc. (I'm not sure whether the sheet feeder is automatic or whether a driver routine is required -- can someone enlighten me?)

TOM VIER TO TOM WARRICK 10/29

Tom: I saw the Imagewriter II and it fed sheets in response to Form Feeds. What other fancy stuff the feeder might do, I don't know.....

JON HARDIS TO TOM DEMAY 10/29

No, the Imagewriter II doesn't require a new print driver, but it does help if you get the (a?) new one. There is some confusion about whether the new driver floating around is an "official" one. There still seems room for improvement.

Drives & ROM Upgrade

GREG MAPLES TO TOM VIER 10/15

Apple has the double sided drives ready to go, but there is a problem in getting them to work with the old ROM for, apparently, size reasons. This is one of the factors that necessitated the ROM upgrade. Right now, the ROM problem is debugging the software to handle a REAL folder/directory structure. This structure is to be used with the 20MB external drive. When the ROMs will be available, no one seems to know.

GREG MAPLES TO JON HARDIS 10/21

Thanks for your clarifications. I did know about the Haba drives, but I was not aware that Haba had released the 800K version yet and had a funny feeling that compatibility was not 100%. I understand that the BIG problem Apple is having with the ROMs is to get them to FULLY support a hierarchical file system based upon folders. I must have missed the gossip on Jonathan. What will it be, and will my brand-new 10 Meg Hyper-driven MAC be upgradeable, or must I assault Apple corporate HQ?

JON HARDIS TO GREG MAPLES 10/22

I don't know if the Haba 800s have been released, either. I didn't mean to imply that they have. I also don't understand why you stress FULLY in "fully support a hierarchical file system". I would expect Apple to fully support all of its

products and software, and HFS is a major piece of software which required careful planning to make it upward compatible with most of the software on the market today. Note to everyone: there is no such product as a "Jonathan". That was an internal code name, and whenever you use it, I (naturally) pick up my ears.

Mac Upgrade Dr. Dobbs

JAMES LITTLE TO ALL 10/17

Has anyone done the Jan. 85 upgrade on a Mac board??? I'm game to try but feedback would be nice first. I have all the tools, etc., to do it. Cheers.

JON HARDIS TO JAMES LITTLE 10/20

NO!!! Don't try a do-it-yourself upgrade until the stockholders' meeting. You may change your mind then. (On the other hand, if you really like your Mac exactly the way it is now, go ahead.) Expect to be able to get the new ROMs, a memory upgrade, and an internal double sided disk drive for under \$500 (list price). Expect to be able to upgrade to the above, plus 1 Meg, plus a 68010 (or less likely a 68020), plus a SCSI (hard disk) interface, plus who knows what else for a couple hundred more. The first likely will be available if you upgrade yourself, the second will likely be completely off limits.

Mac Software

Deluxe MCS

RON WARTOW TO ALL 10/07

I'm told that several software stores have Electronic Arts' Deluxe Music Construction Set.

Excel to 1-2-3 Trans

JOSEPH T. KELLEY TO ALL 10/13

I am very interested in being able to exchange Lotus 1-2-3 files and Excel files and have tried and failed. I used Xmodem to telecommunicate the files (1-2-3's are binary, and I am not aware of any ASCII equivalent such as Syk format for Mac) between my Mac and a PC, but 1-2-3 won't read the WKS output from Excel, and Excel doesn't like the file from the PC. Has anyone tried this and succeeded? What am I to do? Thanks for your help.

JON HARDIS TO JOSEPH T. KELLEY 10/20

I found it ... Try two things: (1) set the Type of the imported 1-2-3 file to TEXT (capitals required) using FEdit or a similar program; or (2) click on the document, shift-click on Excel, and choose Open from the Finder's file menu. If Excel is coded correctly, it should recognize that, too.

Get to Finder

JOSEPH T. KELLEY TO ALL 10/13

I have used "Set Startup" on some of my applications disks, but sometimes I would prefer to go directly to the Finder instead of the application. Is there a way to achieve this without disabling Set Startup? Thanks.

JON HARDIS TO JOSEPH T. KELLEY 10/20

No. If you Set Startup to an application, it is the first one to get control when you put the disk in. There is no program there beforehand to check if you, say, are holding down certain keys. Have you looked into using a MiniFinder, such as Apple's own or WayStation? (I haven't seen the latter yet, but it is around on local boards.)

MAC+II

MIKE UNGERMAN TO ALL 10/15

In this month's A+ magazine, on p. 152, a new product from Meacom, MAC+II, is advertised. It is a software package

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with: MAC+II, an Apple II emulator; MAC DOS, Apple's DOS 3.3 rewritten for the Macintosh; and MAC COM, a communications software program so the MAC can receive files and programs from the Apple II through the Imagewriter cable or a modem. The package supports programs in Applesoft, Integer, and 6502 machine-language, and you can even develop routines in 68000 machine language. Price for the package is \$99.95 from Meacom, PO Box 272591, Houston, TX 77277, (713) 526-5706. Anyone from the SIG interested in seeing if they can get a copy to write a review for the Journal?

Hayden Speller

JAMES LITTLE TO ALL 10/15
Put a document thru Hayden Speller. It bombed out. Was using the 4.5 MacWrite -- Hayden doesn't like the new reformatted files. What now? Tune in to see if they upgrade or whatever.

LEON MOORE TO JAMES LITTLE 10/17
James - perhaps you are using the MacWrite 2.2 Speller. It will not work with MacWrite 4.5 files. Several months ago I sent my upgrade fee (\$7) for the MacWrite 4.5 upgrade. I received it within the last week. Is this your problem?

JOHN M. HOPE TO LEON MOORE 10/28
Leon - I have version 1.2 (or 1.02) of Hayden Speller. Is this supposed to be the version that works with MW 4.5?? If so, I'm not having any luck. It runs the spelling checker OK, but when I go to open the document back up with MW 4.5, the document starts to open, then re-boots my Mac. I am VERY frustrated. Can you tell me what version number you have? Thanks much.

Jazz Multiplan Conversion

BILL GUION TO ALL 10/17
There have been several items published recently concerning Jazz's inability to convert Microsoft SYLK files to Jazz spreadsheet files. There is indeed a problem with the conversion process, but there is a work-around that takes care of the problem. The following procedure was received from Software City, a local dealer who got his input from Lotus. I have used it on a number of files, and it works. 1. Using Multiplan, create a SYLK file version of your spreadsheet. 2. Start up Jazz and open the word processor. 3. When presented with the dialog box, the name of your SYLK file will be in the Finder's list. Open the SYLK file. 4. Start at the end of the file and search backwards for any line starting with the letter 'B'. There should be only one such line in your file. Preceding that line will be one or more lines starting with the letter 'F' and ending with 'Cxx', where xx is a number. Delete all such lines. *** Note - There may be one or more lines starting with the letter 'F' and not ending with 'Cxx'. Do not delete those lines. (There doesn't seem to be any real good reason for starting at the end and searching backwards. In each of the files I have converted, I have found only one line starting with 'B' and could have found it by searching forward more easily than by searching backwards. Nevertheless, that is the way the procedure was described to me.) 5. Save the file as a text file. Use any file name you want, including the same name you had originally used to save the SYLK file. 6. Run CONVERT from the Apple menu. 7. Select the same file name you saved in step 5. Be sure to select Microsoft SYLK before clicking on convert. 8. Wait a minute or so, depending on file size. That's all there is to it. 9. You may get a message that there was an error in conversion and that the conversion could not be completed. Not to worry. This most likely has nothing to do with the above processing. In my experience, Convert has had a problem of some kind converting a formula. The output file will load, and you can look for the problem area and correct it by hand.

Command Symbol

ROSEMARY CONNELLY TO ALL 10/23
I want to print the four-leafed "Command" symbol in some documentation using Microsoft Word. Key Caps doesn't seem

to show it. Can anyone help?

BOB MASSO TO ROSEMARY CONNELLY 10/23
Rosemary, to show the clover-leaf command symbol you need to use a font which has it defined. I know the MacPaint font on one of the SigMac Font disks does (if I remember correctly). Or, you can take a Font editor and redefine an empty character definition (will appear as a box on Key Caps) to the cloverleaf symbol. This last solution takes more time but doesn't force you to take up more space with another installed font.

TOM WARRICK TO BOB MASSO 10/26
The command symbol is ASCII value 17 (\$11 if you speak hexadecimal) in the Chicago font only. There are several ways to get it into a document. The way that requires the least effort (!) is to use an MS BASIC program to select TEXTFONT(0):TEXTSIZE(12), open an output file, and write CHR\$(17) to the file. Close the file and open your word processor. Use the word processor to open the output file. Select the Chicago font, and you should see the command symbol. Copy the symbol to your scrapbook, and there you have it. Alternatively, buy a program like FONTastic and add the character to another font. Option-H and Option-K make good candidates, as they have no defined characters even in the most extensive fonts from Apple itself. By the way, you can get the Apple symbol in the same way. Its value is CHR\$(20).

MAC Misc & Gossip

ROM

TOM VIER TO ALL 10/14
During that MAUG conference with Apple, they called it Rumored Only Memory and said there was no way they could tell their dealers not to install into third party upgrades. They did say that some would be incompatible. I wish someone had asked them about the //e AppleTalk card.....

You want rumors?

JON HARDIS TO ALL 10/20
So y'all want rumors, do you? I've heard enough from different, reliable sources, that I think I have a half-good picture of what is going on. Understand that things like prices and release dates can be changed on very short notice, but things like designs and design changes require a long lead time. There are at least three tracks you should be thinking on: 1) The next level of upgrade to the entry level Mac product; 2) A new "High End" model, roughly replacing the Lisa, and somewhat analogous to how the 512K machine had been compared to the (now discontinued) 128K machine; 3) What is down the road apiece, and which Apple will likely not discuss publicly (even to stockholders) in the next three months. (3) is easy. Color, "Open" architecture (meaning a card cage with slots), and the 68020. Color is still expensive, they haven't decided (or didn't decide in time) on the bus specs, and the 68020 still is rather expensive, especially with its firmware bugs. Also, there is no need for it quite yet in the market. For current owners, I expect to see two upgrade paths offered, at least by the stockholders meeting and, if necessary, earlier. One will be basically the new ROMs and the double sided (internal) drive. It will be very attractively priced (the CIS gossip said \$300, which I take to mean \$500) and most likely will also force you to get a 512K upgrade in the process. The goal is to reduce the number of configurations in the field and to get everyone up to the new revision level (the new file system & bug fixes) at an attractive price. There is also lots of serious talk about a second upgrade option to the newer model/style of high-end Mac, with: 1 Meg, a SCSI (hard disk) interface (requiring a new back cover on the case), the new ROM, internal disk, etc. The 68010 has been mentioned in this connection, though by fewer sources. (Makes sense, though). Over and over I hear that third party and self upgraded Macs will not qualify for this second upgrade, though stories conflict about the simpler one. (I contd.

suspect that when technically possible, it will be allowed, but only if you sign a release and get no warranty.) Again, the second option hopefully will be attractively priced.

Telecommunications

MacTalk

REGINA LITMAN TO RON WARTOW 10/11
Yes, this book is in the Bibliography; in fact, it was in version 1.0, so I first saw it sometime before June 27. I have seen two Mac-specific telecommunications books; the other is "MacTelecommunications" by Erickson and Cramer (Osborne McGraw-Hill, \$16.95). In fact, I now remember that I first saw "MacTalk: Telecomputing on the Macintosh" back on Jan. 19, when Steve Hunt gave a Mac telecommunications tutorial. For those reading this message who didn't see the On-Line Today review and have never seen the book, the authors are Leemon and Levitan and it's published by Compute! Publications of Greensboro, NC, and it lists at \$14.95. (I have seen both books at Crown stores.)

Speeding PC Pursuit

JON HARDIS TO ALL 10/27
Will you kind folks who have both PC Pursuit and a Mac please do me a favor? There have been lots of complaints about how slow downloads are using PC Pursuit, the GTE (Telenet) evening service to dial BBS systems in remote cities at a fixed cost. Unlike a local direct telephone call, you have both packet bunching delays (waits to send a clump of characters much faster than 1200 baud) and satellite delays (I expect PC pursuit to use idle capacity on the GTE Spacenet system). These really hurt the give-and-take between computers' need for an XMODEM protocol transfer. In the November Journal, page 62, I give a patch to FreeTerm (SigMac disk 24) that I cooked up for use on CI\$. I'd appreciate it if you try this patch also while calling remote BBS systems on PC Pursuit. Does it work, and to what BBS programs? Thanks!

Games & GAMESIG

Macintosh Wizardry

RONALD WARTOW TO ALL 10/06
For those of you who didn't see it, I was able to demo Macintosh Wizardry at SigMac yesterday. If you want any info on the program, which will be released in a couple of weeks, give me a call.

Harrier Jump Jet

BOB MASSO TO ALL 10/06
I just bought the new Harrier Jump Jet simulator for the Mac but am having difficulties in controlling it with a mouse. (I usually crash in the upside-down position just after takeoff, it seems.) I don't know for certain if the problem is my inexperience with flight simulators or the mouse being a bad input device for this purpose, but I am looking for comments from anyone else who knows how to successfully fly a Mac Harrier. Also, has anyone bought a joystick for their Mac that they would recommend (or not recommend?)

BRUCE TROEN TO BOB MASSO

10/09

I have a Harrier and have found no difficulty using the mouse to control the aircraft. It's actually much better than other games like MacChallenger. However, my program had a bug in it that was confirmed by Miles Computing. At the end of a mission, if I used the top view, my plane would crash. Therefore I have sent it back for an updated version. I am unaware of any other bugs in the program, but if you continue to have difficulty, I suggest that you call Miles Computing in California. (The number is on the disk.)

MouseStick Review?

BOB MASSO TO REGINA LITMAN 10/13
I don't know what the reviewer was thinking when he wrote that review of the Mousestick joystick for the Mac. I just

bought one and do not regret it. Unlike Mr. Jackson, I had NO problem using it to click windows or buttons and I foresee using it with most arcadish games I play in the future. It seems very well-designed and has the following features: 1) It comes in 2 pieces, a "T" connector to plug into the mouse port and a joystick. 2) Both the mouse and joystick are active at the same time - you switch between them by just grabbing the one you want to use. 3) There is a switch on the T-connector which is totally Macish - at one end is a turtle, the other a rabbit. You can reach around the back and use this to set the speed. Your joystick moves the cursor/pointer/whatever to where your preferences are. 4) The joystick can be switched between 2 modes, 4-way and 8-way. For example, the 4-way is ideal for maze-running (NSEW) while the 8-way is ideal for Dung, of Doom-like situations. 5) It has a big price - about \$60. This last is the only fault I've seen.

Fokker Triplane

BRUCE TROEN TO RON WARTOW 10/18
Ron, I have received and played my copy of Fokker Triplane. It's FANTASTIC!! It is a WW I simulation of a Fokker Triplane and allows the player to choose from a number of different scenarios (e.g. dogfight, search & destroy landing, finding the spy signal, destroying enemy fuel depots). You play against either armed or unarmed opponents. You are able to save a particular adventure and return to it later. The animation is well done, with a frame rate that averages about 6/second. Therefore it is much smoother than the original simulator on the Apple //. Very importantly, the implementation of the mouse is great. It is easy to fly (so unlike the Mac Challenger shuttle simulator) and also somewhat easier than Harrier Strike Mission. In addition, you can play with a cloud ceiling and varying strength and directions of winds. All-in-all I can give it an unqualified recommendation! ☺

MacAdvantage contd. from pg 69

```
small_tics = 7;
big_tics = 15;
var
  i,x,y : integer;
  clock_rec,digit_rec:rect;
begin {Init}
  WriteLn('Analog Clock by P. Sand');
  WriteLn('Press Button to Stop');
  TextFont(0); {change to 12 point Chicago}
  TextSize(12);
  SetRect(locate(clock_rec),centerx-radius,centery-radius,centerx
+radius, centery+radius);
  FrameOval(locate(clock_rec)); {draw circle around clock}
  for i:=1 to 60 do
    Show Ray(radius,(i*pi/30.0)); {draw minute tics}
  InsetRect(locate(clock_rec),small_tics,small_tics);
  EraseOval(locate(clock_rec));
  InsetRect(locate(clock_rec),-small_tics,-small_tics);
  for i:=1 to 12 do
    Show Ray(radius,(i*pi/6.0)); {draw hour tics}
  InsetRect(locate(clock_rec),big_tics,big_tics);
  EraseOval(locate(clock_rec));
  InsetRect(locate(clock_rec),-big_tics,-big_tics);
  for i:=1 to 12 do
    begin
      MoveTo(centerx+round(digit_radius*cos((i-3)*pi/6)),
round(centery+digit_radius*sin((i-3)*pi/6)));
      write(i:1) end; {place hour numerals around clock face}
  TextMode(patXor);
  PenMode(patXor);
  GetTime(old dt); {draw initial clock hands}
  Sec_Hand(old dt);
  MinHr_Hand(old dt); {set original clock hand positions}
end; {Init}
begin {Analog Clock}
  Init;
  while not FrMacBool(Button) do {repeat until button is down}
    begin
      contd. on pg 78
```

WHITHER GROUP PURCHASES FOR THE PI?

by Martin O. Milrod

WAP's Group Purchases program began at a time when retail list prices were the real price of materials and mail order houses for computer stuff were not as broadly available as they are now. Rich Wasserstrom, the head of Group Purchases for the Pi and his able band have done an exceptionally capable job of running a group purchase program. They have invested much time and effort and last year brought the Pi \$18,466.74, according to the Treasurer's Report (WAP Journal, Sept. 1985), although this figure is not "net profit" in that it does not reflect the overhead of office space, staff time and other expenses. In no way am I being critical of Rich and his fellow volunteers; all of us are indebted to them, and my respect for their work is high.

Despite this disclaimer, I still believe that we should forego group purchases in the future or drastically realign its mission. I believe this for the following reasons:

- Mail order houses provide prices lower than any other available source for computer stuff. I know of no materials, software or hardware, offered by the Pi Group Purchase program at a price lower than that obtainable at the lowest mail-order house price. For instance, Sony brand 3 1/2-inch disks were selling at \$2.20 apiece as of this writing, yet look at the October issue of MacWorld and you can get the same disks at under \$2 apiece. This pattern repeats itself with other materials.

- The Pi never has a complete, up-to-date price list printed anywhere. You have to call the Group Purchase number to get the latest prices and then, unless the item is in stock, you have to mail in a check in advance, wait some period of time and then pick up the product you ordered at the Pi office--not a convenient procedure.

- Perhaps above all, I am concerned about the ethical problem of offering stuff for sale to our fellow members at prices that we know to be higher than the best prices available through good mail order houses.

We charge our members higher prices than they have to pay, involve a great deal of volunteer time and trouble and provide our members with a kludgy, inconvenient purchase process. For these reasons alone, I would want to see Group Purchase stopped, or at least limited only to: (1) materials that are not generally available elsewhere (e.g., Quick and Dirty Utilities for the Mac), or (2) prices that are lower than the best mail order house prices. I oppose retaining the Group Purchase program as a means for gathering additional funds for the Pi; we should do this by raising dues or having other fund-raising activities. We should use the powerful group purchase potential of WAP to the best advantage of our members; let retailers and wholesalers compete to give us the best prices on products.

I also believe that we should give up our current Group Purchase procedure because it represents a possible impediment to our obtaining a § 501(c)(3) (charitable tax-exempt) status. Obtaining this desirable IRS status is, I maintain, of

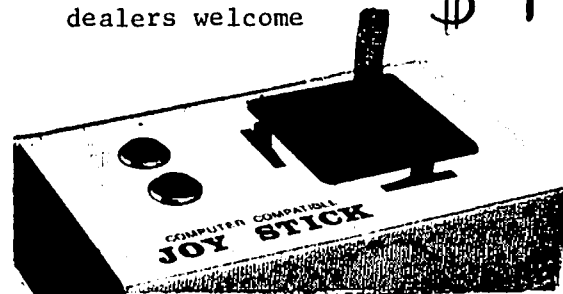
major importance to the Pi, since it could enable all of us to make tax-deductible contributions to the Pi and possibly to have a portion of our membership dues treated similarly. The § 501(c)(3) subject is an important one but one that digresses from my immediate topic; nevertheless, giving up Group Purchase has the probable benefit of enhancing our chances of getting such a desirable status.

Now, what else could a restructured Group Purchase activity involve? Let me suggest an evolution of its current evaluative nature. We should, in my opinion, have a consumer education role to play by maintaining bug and quality reports submitted by computer users on hardware, software and dealers/mail order houses. These could include latest version numbers of software/hardware, and collective experiences, à la the Better Business Bureau, of computer stuff. Hopefully such reports completed by individuals on a form designed by the Pi, would be maintained at the office in hard-copy form and in a DBMS form with rudimentary statistics on numbers of respondents and some scalar rating scheme (Lickert?) on users satisfaction and criticisms. After all, we are a computer club and should be able to design an effective little DBMS and reporting system, possibly for a monthly report in the WAP Journal, for use by our members and by the general public. Parenthetically, the fact that such a public consumer education service enhances our chances of getting § 501(c)(3) status is just another plus in considering to go in that direction.

In sum, then, I think that the current Group Purchase program should simply be scrapped. In its place we should set up a modified Group Purchase program limited at least to (1) obtaining hard-to-get stuff and (2) obtaining exceptionally good prices for WAP members, defined as being better than the best mail order house price. In addition, I would like to see the Pi amplify its evaluative, consumer public education effort by collecting, collating, analyzing and publicizing evaluative reports on software, hardware and computer service deliverers. This would be of more constructive direct assistance to our members than is the current Group Purchase procedure. If you agree with this approach, or have better suggestions, I urge you to let the WAP Board know of them directly (see the names of Board members in each issue of the WAP Journal) and to attend the Board meetings that are held on the second Wednesday of each month at the WAP office. ☺

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THE GROUP PURCHASER REPLIES

by Richard Wasserstrom

I have been asked to reply to Marty Milrod's article, "Whither Group Purchases for the Pi".

Marty has raised several questions about WAP's Group Purchase program, which arise from time to time as our membership grows and our members assess how the club works and what the club has to offer. I'll restate each of Marty's main points and reply to them - in Q & A fashion.

Q. Don't mail order houses charge lower prices than the Group Purchase program?

A. As is obvious to anyone who reads the numerous ads in computer magazines, sometimes the G.P. Program offers lower prices than mail order houses and sometimes it does not. There are several reasons for this. First, the object of the group purchase program is not to compete with the mail order folks, but to offer WAP members good prices and to raise funds to support the club. This dual purpose means that we must charge more than we pay for a given item. As I have explained at various WAP meetings, Group Purchase prices are, overall, a little less than 10 % above what WAP pays for an item.

In the market place, the more you buy, the less you pay. Most mail order houses buy huge volumes and often pay considerably less than we. It should come as no surprise, then, that some mail order houses sell some items for less than the Group Purchase program. The G. P. program cannot, and is not designed to, "beat" every price in every magazine. Instead, we offer some of the best prices locally and the assurance that the "margin" we charge goes toward supporting your club.

Moreover, Group Purchase offers the very "unusual" items which Marty desires. In point of fact, I stock the Quick and Dirty Utilities program that Marty mentioned. We try to stock other such items; where else can Apple][,][+, or //e owners find a Happ Gameport Extender? For Mac owners, we stock the Keyboard Kaddy, which lowers the keyboard about 2.25 inches to achieve a more comfortable typing position.

Q. Why don't you print your prices somewhere? I don't like to have to call the Group Purchase number to get the latest prices and then mail in a check in advance and wait to pick up my purchase.

A. We don't print prices because they quickly change and it's simply a pain to have to update price sheets. Prices are, however, available on the WAP Bulletin Board (System 1) and, in addition, are only a phone call away every week night from 7 to 9:30 pm if you call the Group Purchase phone (893-7143) and talk to one of our volunteers. I'm a bit puzzled about the rest of Marty's complaint, since he criticizes the very process he seems to prefer, i.e. mail or phone ordering. Moreover, I try to keep the most popular and lower priced stuff in stock at the office, so you don't have to wait. I don't like to stock the "larger items" since I do not like carrying a large, expensive inventory.

Q. Doesn't charging WAP members prices which we know are not the absolute lowest create an ethical problem?

A. I certainly don't see any ethical problems in raising funds for the club through the group purchase program, regardless of whether club prices are higher, equal to, or lower than any others. Certainly, anyone with the intelligence to work a computer can compare our prices with those offered by others and make an informed purchasing decision. Do you worry about ethical problems when a Girl Scout sells you cookies because you know you can buy similar cookies for less at your Safeway? I don't. (Of course, I retaliate by selling raffles for my daughter's swim team!)

Q. Isn't the Group Purchase program an impediment to obtaining §501(c)(3) status under the Internal Revenue Code?

A. A committee of WAP officers and directors met with tax counsel some time ago and was advised that the group purchase program does not preclude §501(c)(3) status, provided that certain reorganization of the club structure occurs. The question of whether, or how, to pursue this tax status is pending before the WAP Board.

In the final analysis, WAP's members decide what kinds of programs they want the club to implement. Attend the next board meeting or contact any WAP officer or board members and express your views on the questions Marty raised. ☞

Disk /// Write Protect contd. from pg 14
protected diskette. If everything is ok, it will write just fine. Next, turn off the write-protect override switch and try to re-initialize the diskette.

Once again, if everything is ok, you will NOT be able to write to the diskette.

12) If everything worked ok, you are finished. If the switch is on, you may now write on any diskette, whether it has the write-protect notch covered or even if it doesn't have a write-protect notch (such as the flip side of so-called single-sided diskettes - yes Virginia, you can discard that hole punch or nibbling tool you have been using to drop little black chips all over your floor with).

13) Now that you have done this, you must be sure to check the position of the switch before you place a diskette in the drive. A lighted LED means DANGER, you can write on this diskette. Therefore, get in the habit of checking it every time you use the drive to prevent any tragedies. ☞

MacAdvantage contd. from pg 76

```
gettime(dt);
if dt.second<>old dt.second then
  begin {time to move the second hand}
    Sec_Hand(old dt); {erase old sec hand}
    Sec_Hand(dt); {draw new sec hand}
  if dt.minute<>old dt.minute then
    begin {time to move minute and hour hands}
      MinHr_Hand(old dt); {erase old hands}
      MinHr_Hand(dt) {draw new hands}
    end;
  old_dt:=dt {save time to test for future updates}
end
end {while}
end. {Analog_Clock}
```


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- () December 3 - WELCOME TO THE WORLD OF APPLE - () January 7
- () December 10 - HOW TO USE YOUR APPLE SOFTWARE - () January 14
- () December 17 - POPULAR APPLICATIONS FOR YOUR APPLE - () January 21

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.

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SigMac is sponsoring a series of two monthly tutorials for the beginner. The fee for two tutorials is \$20.00. They will be held at the office, from 7-10 PM on Monday evenings. You are strongly urged to bring your Macintosh.

- () Monday, January 20 and 27

The following "non-regular" SigMac tutorial is being offered on Saturday, December 14, 9:00AM at the WAP office. Attendees are strongly urged to bring their computer.

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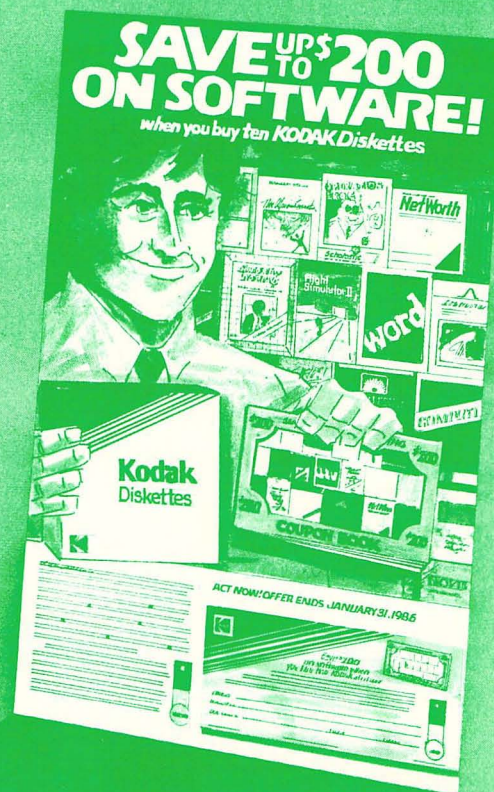
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