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Washington Apple Pi

The Journal of Washington Apple Pi, Ltd.

Volume 8 January 1986 Number 1

Highlights

GameSig Reviews
Stock Prices Autodialing (Laptop Computers)
Double Precision Forth
Cary Lu Predicts
AppleLink (Review Corner)

In This Issue

Now, For A Very Low Price, You Can

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Attention Apple III and Lisa Owners!

Clinton Computer has just obtained the full inventory of an Apple dealership in Florida that recently closed its doors.

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These products are being sold from Clinton Computer p.s., our Service Department and Used/Demo Equipment Showroom, located at 6457 Old Alexander Ferry Road in Clinton, MD. The telephone number is (301)856-2500. Ask for Mark Krenik.

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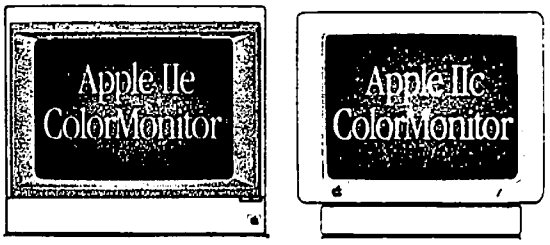
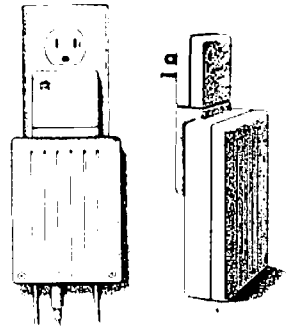
Clinton Computer is pleased to announce that Washington Apple Pi members will receive a **25% DISCOUNT*** off the list price on all Apple brand peripherals and software and on AppleCare. This discount extends to the new line of Apple peripherals, though quantities may be limited for a short period of 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.

In addition, Clinton Computer guarantees that our price is the lowest in-stock price for Apple products of any anthorized dealer in the Washington Metro area.

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.



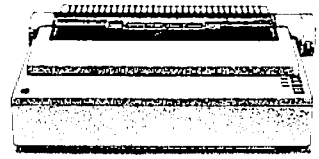
Color Monitor //e and
Color Monitor //c
List $399.00
Price to Pi Members $299.25



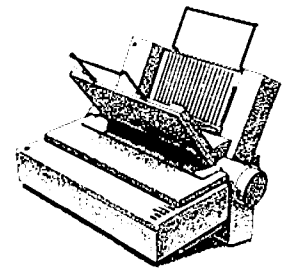
Apple
Personal Modem
300-1200 Baud
List $399.00
Pi Price $299.25
Requires P8 Cable, Pi Price $22.50

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. No phone or mail orders, please.*

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6443 Old Alex. Ferry Road
At Branch Avenue
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SigMac	- Don Landing	(703) 690-1010
SigMac Prog. Grp.	- Timothy Buehrer	(703) 548-8971
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Pascal (PIG)	- Larry Taborek	(703) 960-2250
PI-SIG	- Raymond Hobbs	(301) 490-7484
STOCKSIG	- Robert Wood	(703) 893-9591
Telecomm. SIG	- George Kinal	(202) 546-7270

Washington Apple Pi, Ltd.
8227 Woodmont Avenue, Suite 201
Bethesda, MD 20814
Business Office (301) 654-8060

EDITORIAL

How many Holiday Seasons has it been? Seven? Eight? We've grown and continue to do so. Perhaps with not as much frenetic vigor but growing nevertheless, and I predict that the slackened pace is only for the moment. We are gradually putting into place an information clearinghouse in the true sense of the word. We lack a large computerized database which can provide an index to our articles, the library, our software and the interesting works of others. In time, that too... And what about possibilities for watching your favorite meeting televised in your own home? Many other improvements come to mind with more just over the horizon.

What does this mean for you? It means more and better service in the months and years to come. As your interests and competence grows, so will the contents of these pages. There will always be materials and support for the new arrivals - those who are just beginning to discover the pleasures and intellectual strengths of the micros. Our suggestion to all of you is to stay with us, and teach us to teach you. Also, support our advertisers, who through their advertisements not only help defray the cost of the Journal, but provide you with information to help you make better informed and cost appropriate decisions.

We cannot pass up this opportunity to wish each and everyone of you Happy Holidays. As we write this, we are looking forward to our traditional Christmas at home and wish that everyone of us has a Happy New Year!

PRESIDENT'S CORNER
by Tom Warrick

The biggest item in WAP news this month is the change in ***monthly meeting format.*** This is the first such change in many years, and one with a number of advantages that should make meetings more interesting. The biggest change is that there will be one large meeting on the ***fourth*** Saturday of each month. Sometimes there will be separate programs for the Apple II family and the Macintosh family; at other times, there will be a combined program when, as in January, there is a topic of interest to everyone.

A chart elsewhere in this issue shows how meetings will be scheduled if we're meeting at USUHS. (The schedule may have to be changed slightly if we meet at a different location.) Journal distribution and disk sales will be held from 9:00 to 9:30. For most WAP meetings, the Apple II-family owners will want to attend the program in the auditorium from 9:30 until 10:30, while Mac-family owners attend a Q&A session in the cafeteria. At 10:30 all WAP members will come together into one big, happy--and, perhaps, crowded--family for a business meeting. This is also where you should come to hear about what is being offered through WAP's group purchase program.

At 11:00, the second round of meetings begins. Mac owners will meet in the auditorium for a program directed at them, while Apple II owners hold a Q&A session in the cafeteria. Several special interest groups will meet beginning at noon.

For special WAP meetings, where the program is of interest to everyone, there will be one program at 11:00, with separate Apple II and Mac Q&A sessions from 9:30 to 10:30 in the auditorium and cafeteria respectively.

The January 1986 meeting will be something special. Even if you haven't been to a WAP meeting before, come to the January meeting on ***Desktop Publishing***. The featured speakers will be Bernie and Gena Urban, explaining how they put out the WAP Journal each month. Not only is this an interesting adventure in its own right, but the WAP Journal is one of the best examples we can think of to show off the potential and pitfalls in the desktop publishing area. We will also have demos of other Apple II and Mac desktop publishing software such as Newsroom and ReadySetGo version 2. (Note that there is a possibility we may get a surprise visit from someone at Apple to speak about new products which Apple will be announcing in January. If this happens, the Desktop Publishing program would be shifted back to February.)

WAP now has a permanent ***Dealer-Relations Committee*** that will, we hope, improve communications between WAP members and area dealers. Dealers anywhere come in for their share of criticism, some justified, some not. (The same thing could be said about customers or, for that matter, users groups.) Members, the Dealer-Relations Committee will try to help out if you have a problem that you and your dealer cannot resolve to your mutual satisfaction. Conversely, you dealers out there should feel free to contact one of the members of the committee to discuss ways in which you and WAP can work together to better serve your customers. WAP's members, after all, are your past customers, and you don't need me to tell you that past customers are one of your best source of future customers, particularly in the computer business where word-of-mouth is so important. The members of the committee are Jim Burger, John Alden and Rich Wasserstrom. Their phone numbers are listed on the masthead on page 3.

If you need a belated Christmas present for someone going overseas with his or her computer, consider buying them a ***power converter*** for their computer. Peter Trinder, one of our U.K. members, recommends that you don't buy one in the United States. He says, based on experience, you can get better ones more cheaply in Europe that will work quite well. It's much cheaper than buying a whole new computer or even just a power supply.

Most of us will be making our New Year's resolutions soon. May I suggest one? Do you have any ***"shareware"*** , software you get to try for free and for which you have to pay only if you continue to use it? Some of the best software written today is shareware--Red Ryder, Fedit and DiskInfo for the Mac come to mind. If you use any shareware programs, have you sent in your license fee? This is the only way we're going to persuade more top-notch programmers to publish via shareware rather than at much higher prices. Resolve to send in your license fees this month.

Another New Year's resolution several people have asked us all to make concerns the WAP ***HotLines*** for members with questions. Many people on the HotLines use answering machines to take your questions even when they are not available to answer the telephone themselves. The best way to make sure the HotLine volunteer can return your call is to speak clearly--a simple thing that we can all stand to be reminded of. Also, if you're calling long distance and ask that the volunteer call you back, you should expect your call to be returned collect. Remember, though, given the way long distance charges work these days, you will probably be able to place three or four long distance calls to someone for the price of one collect call.

The ***Mac World Expo*** has been renamed the ***Apple World Expo*** in recognition of its new status as an all-Apple show. Expect Apple to make a number of exciting announcements the first day of the show. A number of us are making plans to go out to San Francisco for the show, which runs from January 16 through January 18. If you are interested in making group travel arrangements, please give me a call. Also, if you have a home-grown Apple or Mac product to demonstrate, WAP is going to have a booth and our video projector out there. We want to show the "Apple World" some of the great work done here in the Washington area. Give me a call if you're interested in some ***"co-marketing."***

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

CLASSIFIEDS

WANTED: A Big Brother for an Apple! Help a school for disadvantaged youngsters learn how to use their new, donated //c system! Be their special "hotline helper" - or visit the kids for hands-on teaching. Call Sue Klassen (387-1143) at "For Love of Children" (FLOC), 1711 14th Street, NW, Washington DC. Sometimes even an apple needs friends!.

COMPUTER MUSIC COURSE: An overview course on computer music taught by WAP member Gary O. Larson will be presented at the Smithsonian Institution on January 23 - February 27, six Thursday evenings from 6:00 to 7:30, plus a Kennedy Center performance on March 2. Tuition is $56 for WAP members, $71 for non-members. For further information, call the Smithsonian (357-3030) or the instructor (337-4267).

FOR SALE: Screenwriter II with Dictionary for][+ or //e, never opened, $65; Dow Jones Market Managaer, used slightly, OK except for use in Canada, $30; Dow Jones Market Manager, used slightly, perfectly OK, $50; Dow Jones Market Manager Plus, used once, lists at $249, bargain at $125. Call Newt, 9AM-9PM at (301) 320-5820.

FOR SALE: Apple ///, Monitor, external drive, 20 meg hard disk, CP/M soft card, Apple Writer, dBase II, VisiCalc, PFS, PFS Reports, $2500. External DSDD 360K drive for Apple ///, never used, $350. Great Plains Accounting modules for Apple ///, General Ledger, Receivables, Payables, $850. Call (703) 836-1688, days.

FOR SALE: Software for the Mac - MacProject, $99 or MacDraw, $109, or $200 for both. Call R.D. weekdays 10 AM-4PM at (202) 574-9552.

FOR SALE: Apple //c monochrome monitor with stand, cables and manuals - like new, in box - make me an offer. Call Dave at 948-8522 days or 428-3296 evenings.

FOR SALE: Apple][+, Zenith green monitor, one disk drive with controller, Transend 2, Apple Writer I, Music Maker, 10 education disks, many public domain disks. $525, or hardware alone $450. Call Bill, days, (202) 544-0180.

COMMERCIAL CLASSIFIEDS

FOR SALE: Keyboard cables for the Macintosh. 12 ft long coiled cables $12.50 and flat cables $6.00 + $.20/ft Custom cables made on order for any use. Jay Heller, Adaptation Electronics, (301) 948-7440.

JOB MART

POSITION WANTED: Apple Macintosh computer instruction in the general Frderick, 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.

EVENT QUEUE

Washington Apple Pi meets on the 4th Saturday (usually) of each month at the Uniformed Services University of the Health Sciences (USUHS), 4301 Jones Bridge Road, Bethesda, MD on the campus of the National Naval Medical Center. Beginning in January, both the Apple // and Macintosh owners will meet on the 4th Saturday. For a description of the format of the meeting, see the Meeting Schedule Chart elsewhere in this issue.

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

Following are dates and topics for upcoming months:

January	25	- Desktop Publishing
February	22	- 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

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.

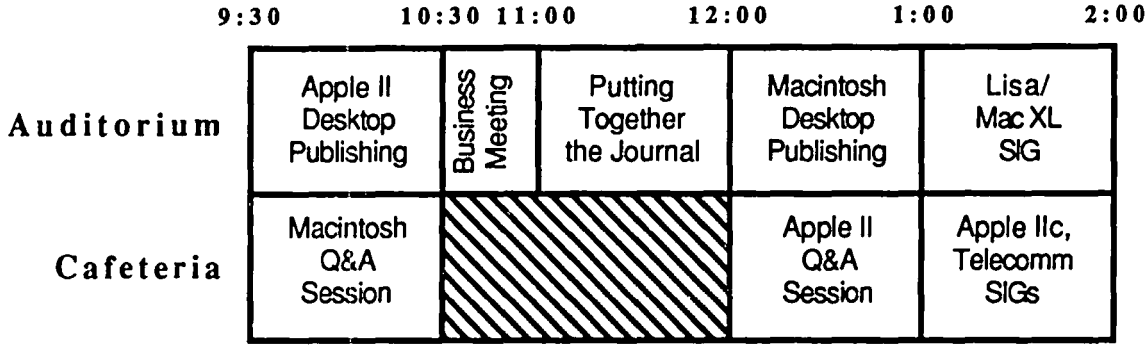
Current office hours are:

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

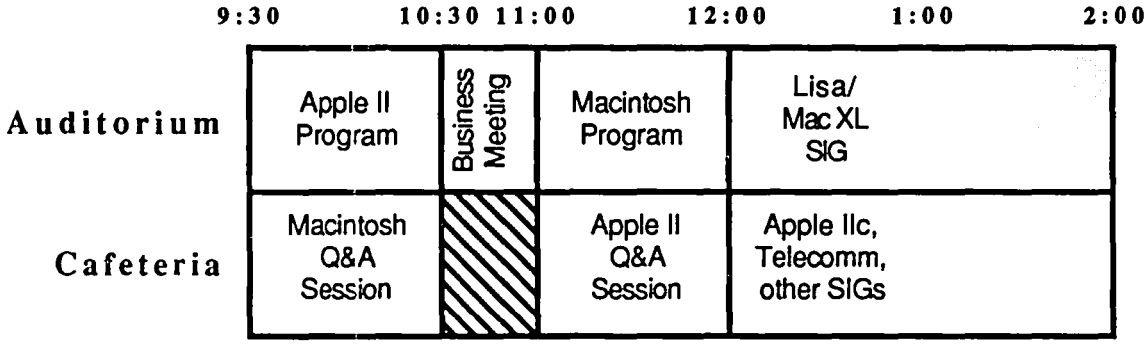
** Note change of evening hours beginning in January.

Washington Apple Pi Meeting Schedule Beginning in January

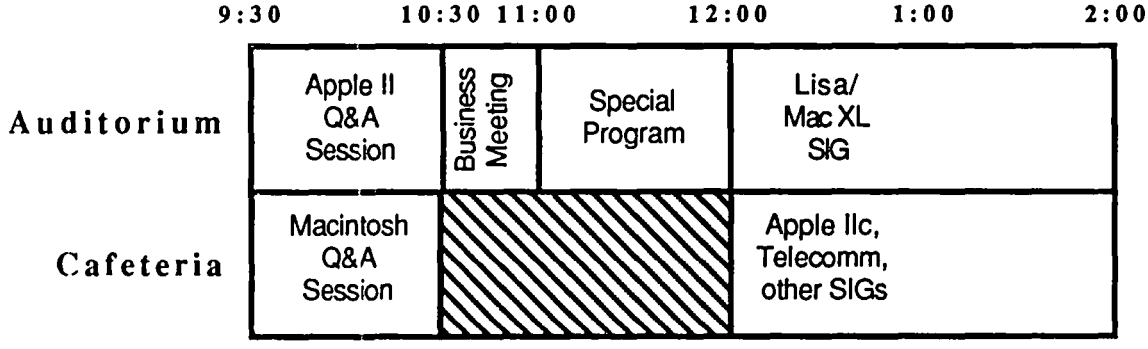
For the January meeting on Desktop Publishing:



For Most Future WAP Meetings:



For Special WAP Meetings:



Journal Distribution and Disk Sales at All Meetings:
9:00-9:30 and During All Q&A Sessions

January 1986

WAP

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 No SigMac Meeting - see Jan.25
5	6 Deadline for Journal Articles	7 Apple// Beginning Tutorial #1 7:30-9:00PM Office	8 Executive Board 7:30 PM Office	9STOCKSIG 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 Family Roots Tutr. 9AM-Office; Pie AlaMode Gr.Falls VA
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 Apple // & Mac 9:30 USUHS
26	27 Mac Begin. Tutorial #2 7-10 PM Office	28 FAC SigMac 7:30 PM MRIID	29	30	31	

* February 1986 *

WAP

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
						1 No SigMac Meeting - see Feb. 22
2	3	4 Apple// Beginning Tutorial #1 7:30-9:00PM Office	5 Deadline for Journal Articles	6 SigMac 7:30PM-Lady of Lourdes; GAMESIG 7:30 Off.->	<-Thursday 6 contd. DisabledSIG 7PM-CCCC	8
9	10	11 Apple// Beginning Tutorial #2 7:30-9:00PM Office	12 Executive Board 7:30 PM Office	13STOCKSIG 8PM Office; Apple /// 7:30PM-Conv Ctr. Inn ->	<-Thursday 13th contd. FAC Slice 7:30 MRIID Ft. Detrick	15 AW Tax Templates Tutorial 9AM-Office
16	17 Mac Beg Tutr. #1 7-10PM Off; PI-SIG 8:00 PM Office	18 Apple// Beginning Tutorial #3 7:30-9:00PM Office	19	20 Pascal SIG 8:00 PM Office	21	22 WAP Meeting - Apple // & Mac 9:30 USUHS
23	24 Mac Begin. Tutorial #2 7-10 PM Office	25	26	27 EDSIG 7:30 PM Office	28	

SIGNEWS

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 January 9.

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 Jan 2.

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 January 2. See their news elsewhere in this issue.

LISA/MacXL SIG meets after the SigMac meeting on the 4th 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 4th Saturday (general meeting) at USUHS at 9:30 AM.

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

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

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
	Dave Harvey	(703) 527-2704
	Robert Martin	(301) 498-6074
Accounting Packages		
Accountant(Dec.Sup.)	Mark Pankin	(703) 524-0937
BPI Programs	Jaxon Brown	(301) 350-3283
Home Accountant	Leon Raesly	(301) 460-0754
Howardsoft (Tax)	Leon Raesly	(301) 460-0754
APPLE SSC	Bernie Benson	(301) 951-5294
Apple TechNotes	Joe Chelena	(703) 978-1816
AppleWorks	Jay Jones (Balt.)	(301) 969-1990
	Ken Black	(703) 369-3366
	Ken DeVito	(703) 960-0787
Communications Packages and Modems-Telecom.		
Anchor Mark 12	George Kinal (7-10)	(202) 546-7270
	Jeremy Parker	(301) 229-2578
Apple Modems	John Day	(301) 672-1721
ASCII Express	Dave Harvey	(703) 527-2704
	Marv Redd	(301) 944-2150
BIZCOMP Modem	Jeremy Parker	(301) 229-2578
General	Tom Nebiker	(216) 867-7463
Hayes Smartmodem	Bernie Benson	(301) 951-5294
MDM	Joe England (7-10)	(301) 953-1949
Robotics Modem	Joan B. Dunham *	(301) 585-0989
SeriAll Comm. Card	Joan B. Dunham *	(301) 585-0989
Smartcom I	Harmon Pritchard	(301) 972-4667
VisiTerm	Steve Wildstrom	(301) 564-0039
XTALK CP/M Comm.	Bernie Benson	(301) 951-5294
Computers, Specific		
Apple //c	John Day	(301) 672-1721
	Scott Rullman	(301) 779-5714
LISA/Mac XL	John Day	(301) 672-1721
	Don Komreich	(301) 292-9225
Macintosh:		
General	Steve Hunt	(301) 262-9080
	Scott Rullman	(301) 779-5714
	Donald Schmitt	(717) 334-3265
	Rob Clark	(804) 850-2016
Chart	Terry Monks	(703) 471-4610
Comm. & Modems	Steve Hunt	(301) 262-9080
Concertware	Skip Horvath	(703) 536-4091
Digitizers	JoAnn Stewart	(703) 527-4072
Excel	David Morganstein	(301) 972-4263
File Vision	Steve Hunt	(301) 262-9080
Hard Disk	David Jamison(day)	(301) 589-8841
Helix	Jim Berry *	(703) 662-0640
	Harvey Levine	(301) 299-9380
Inside Mac	Jon Hardis	(301) 330-1422
	Don Landing	(703) 690-1010
Lang.-C,Pascal,XLisp	Carolyn Komada	(703) 691-1986
MacDraw	Tom Berilla	(301) 434-3256
MacLion (DBMS)	Mark Miani	(202) 362-8123
MacProject	Jay Lucas	(703) 751-3332
MacTerminal	Jon Hardis	(301) 330-1422
Multiplan	John Boblitz	(301) 356-9384
	Don Landing	(703) 690-1010
	Steve Hunt	(301) 262-9080
	Walt Francis	(202) 966-5742
MusicWorks	Skip Horvath	(703) 536-4091
OverVue	J.T.(Tom) DeMay Jr.	(301) 779-4632
Spreadsheets	David Morganstein	(301) 972-4263
Spreadsheets&Graphcs	Bob Pulgino	(202) 797-0879
Sidekick	Ray Hobbs(7:30-10)	(301) 490-7484
Word	Marty Milrod	(301) 464-2154
Data Bases		
dBase II	Paul Bublitz	(301) 261-4124
	John Staples	(703) 893-5985
dBase II & III	Ray Hobbs(7:30-10)	(301) 490-7484
	Jim Kellock (day)	(301) 986-9522
	Leon Raesly	(301) 460-0754
DB Master	Dave Einhorn	(301) 593-8420
Data Perfect	Leon Raesly	(301) 460-0754
Data Factory	Bob Schmidt	(301) 736-4698
General Manager	Normand Bernache	(301) 935-5617
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
DB contd.- Q-Pro-4	John Staples	(703) 893-5985
VisiPlot	Leon Raesly	(301) 460-0754
Games - Apple //	Charles Hall	(301) 330-4052
Games - Mac	Ron Wartow	(301) 654-4439
Hard Disks		
Corvus & Omninet	Tom Vier (ABBS)	(301) 986-8085
Sider	Jaxon Brown	(301) 350-3283
Languages (A=Applesoft, I=Integer, P=Pascal, M=Machine)		
A	Louis Biggie	(301) 967-3977
A	Peter Combes	(301) 251-6369
A,I	Jeff Dillon	(301) 422-6458
A	Richard Langston	(301) 869-7466
A	Mark Pankin	(703) 524-0937
A,I,M	Richard Untied	(609) 596-8816
A,I,M	John Love	(703) 569-2294
M	Raymond Hobbs	(301) 490-7484
P	Donn Hoffman *	(412) 578-8905
Forth	Bruce Field	(301) 340-7038
LISP	Fred Naef	(703) 471-1479
MS Basic	Ray Hobbs(7:30-10)	(301) 490-7484
Math/OR Applns.	Mark Pankin	(703) 524-0937
Monitor, RGB	John Day	(301) 672-1721
Operating Systems		
Apple DOS	Richard Langston	(301) 869-7466
	John Love	(703) 569-2294
	Richard Untied	(609) 596-8816
CP/M	Ray Hobbs (7:30-10)	(301) 490-7484
	Leon Raesly	(301) 460-0754
ProDOS	Richard Langston	(301) 869-7466
	John Love	(703) 569-2294
Printers		
General	Walt Francis	(202) 966-5742
	Leon Raesly	(301) 460-0754
	Joan B. Dunham *	(301) 585-0989
AJ 831 series	Joe England (7-10)	(301) 953-1949
Apple Color Plotter	John Day	(301) 672-1721
Apple Daisy Wheel	John Day	(301) 672-1721
Daisywriter 2000	Bill Etue	(703) 620-2103
	Henry Greene	(202) 363-1797
IDS 460	Jeff Stetekluh	(703) 521-4882
Imagewriter	John Day	(301) 672-1721
MX-80	Jeff Dillon	(301) 434-0405
NEC 8023	Bill Mark	(301) 779-8938
Okidata	Michael Proffitt	(301) 874-2270
	Dan Robrish	(301) 530-4202
Scribe	Phil Leber	(703) 378-4391
Silentype	Bruce Field	(301) 340-7038
Spreadsheets	Leon Raesly	(301) 460-0754
	Walt Francis	(202) 966-5742
Lotus 1-2-3	Walt Francis	(202) 966-5742
	Ray Hobbs(7:30-10)	(301) 490-7484
Multiplan	Terry Prudden	(301) 933-3065
VisiCalc	Walt Francis	(202) 966-5742
Sprdsht. 2.0(MagicCalc)	Leon Raesly	(301) 460-0754
SuperCalc Ver. 2.0	Leon Raesly	(301) 460-0754
Stat. Packages	Mark Pankin	(703) 524-0937
	David Morganstein	(301) 972-4263
Stock Market	Robert Wood	(703) 893-9591
Time-Sharing	Dave Harvey	(703) 527-2704
Word Processors	Walt Francis	(202) 966-5742
Apple Writer II	Dianne Lorenz	(301) 530-7881
	Leon Raesly	(301) 460-0754
Format II	Henry Donahoe	(202) 298-9107
Gutenberg	Neil Muncy Can.	(416) 298-3964
& Jr.	Harris Silverstone	(301) 435-3582
Letter Perfect	Leon Raesly	(301) 460-0754
& Simply Perfect		
Magic Window and II	Joyce C. Little	(301) 321-2989
Peach Text	Carl Eisen	(703) 354-4837
PIE Writer/Apple PIE	Jim Graham	(703) 643-1848
ScreenWriter II	Peter Combes	(301) 251-6369
	E. E. Carter	(202) 363-2342
Supertext II	Peter Rosden	(301) 229-2288
Word Handler	Jon Vaupel	(301) 977-3054
Word Juggler //c	Carl Eisen	(703) 354-4837
Word Star	Joe England (7-10)	(301) 953-1949
	Dana Reil	(301) 350-3283

* Calls up until midnight are ok.

NOVEMBER 23rd MEETING REPORT
by Adrien Youell

"Goo..moonin — welcom to de wol of soun". This is only a test, do not adjust your set. "Good morning – welcome to the world of sound". Generated at this faster clip I did not know if that was Gary Larson speaking, or 'it', especially as Gary stood behind his //e, and the sound was wired into the house audio system. This is a sound sampler, specifically the **Decillionix DX1**, which is a discrete sound generator (as opposed to simultaneous or chord/harmonic systems—monophonic vs polyphonic), costing about $349 for the card and software. The software has numerous *canned* examples from drums to dog barks, and accepts microphone input. Decillionix is a digital to analog converter.

Sit back and enjoy yourself; this is the sound of *real* music. Don't take notes. **Listen and enjoy.** With a flourish, Ray Hobbs entered right, grabbed the meeting and tapped the Mac, for attention. He introduced us to the basic concepts of sound development on the computer (using **ConcertWare**), that by judicious crafting of waveform and envelope, recognizable musical instruments and notes are produced. So much can be achieved in sound terms the enthusiast is not restricted to standard musical instruments. In fact, Ray referred to his machine as an *instrument* .

Now, I think we *pay* Ray Hobbs to be a Pi member for his pure entertainment value, and at no time was this impression more evident than on 23 November. The *mæstro* played from AN and musical keyboards. The latter is an **Alpha Syntauri** system with cards so sensitive to transportation Ray has glued them in his][+ slots! These are keyboard and **Mountain Computer** music system cards (=3); $1,800, for Ray. **Metatrak** 2.0 O/S software is used by Wm. Bittle. I hate to spoil the art of a beautiful morning with all this technical detail, little as it is, but this column is to inform as well as entertain; contacts for more information are given below. The Event was certainly Entertainment, as Gary and Ray had the 'audience' enraptured by their compositions - a Great Event. My professional colleague, who is also a concert–standard pianist, said he enjoyed the meeting. He only wants to buy a computer if it will play music!

Lastly to mention, but *without detriment* (legal phrase I think), Tom Warrick pursued a comparison of **MusicWorks** and **ConcertWare** for the Macintosh. I did not really appreciate his quoted differences in note crispness, but the programs operate quite differently. It's a question of hearing, seeing and playing for yourself. Personally, I own MusicWorks and can say with bitter experiences of my wife and myself that composition is difficult, tedious, or verges on the impossible. Musical renderings in the 'Examples Folder' I consider superb, but practicing my line for the carol service was interesting (read frustrating). You are definitely not invited to hear the result!

Want a MusicSig? Contact Ray Hobbs (for Chairman) or Gary Larson. This is where I give a *plug* for Gary's Well-Tempered Computer, a Smithsonian Resident Associate's Program (RAP) course, 23 January to 27 February; RAP member discounts apply. Call Gary at (202) 337–4267, or RAP (#318–305) at 357–3030. Why not call Gary's number for fun – there may be an interesting surprise. I called twice and my boy was enthralled, and *he* was at the meeting; and, Gary called back!

For your reference you have Ray's phone number on the masthead, but I also introduce Wm. Bittle, (202) 291–7585, with an Alpha system, who has agreed to field music questions. William is a school music teacher. Contact whom you may and call those you can. Subtle. There are many suitable, instructive and detailed articles on sound and music synthesis (on the Apple). With the Editor's forebearing I limit myself to the following, but recommend you talk to these experienced folk.

References:

ConcertWare, reviewed by John Gardner, J.WAP, May 1985.

"The Musical Apple", by Raymond Hobbs, J.WAP, a series, in Nov 84, Jan 85 and April 1985.

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
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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 Halff
MAC Hardware, Software, & Gossip/Misc. Boards SYSOP..	Larry Halff
Telecomunications & 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 Halff, Marty Milrod, Emil Levine, Dave Helfrick, Joan Dunham, Tom Warrick & YOU, if you attend!	

Q & A
by Bruce F. Field

Almost a year ago I had a question on the Penultimate Input Nearly Anything Subroutine that allows you to input BASIC strings with punctuation. The reader's problem was that when the string was input, part of his BASIC program was modified. Yvan Koenig wrote from France to point out the correct solution. Part of the BASIC program in question was:

```
5085 G$="0" : G$="000" : T$(6) = G$
5090 FOR J=1 TO N7 : A3 = 0 : FOR I=1 TO 6 :
       CALL 880 : INPUT T$(I) : NEXT
```

The problem is that T$(6) is set equal to G$ which is defined by a string within the program. The pointers for T$(6) and G$ point to the memory area within the program that contains the 000. When Penultimate Input... is run (CALL 880) it stores the new string back where the old string was, thus modifying the program. The way out of this is to define T$(6) = MID$(G$,1) which will store T$(6) in the upper storage area.

Q. I am writing this letter as a result of recently upgrading from an Apple][+ to a //e. Is there a patch for Apple Writer II that I can buy commercially or one in the Public Domain that will allow me to use the shift key to change case? It would also be nice to be able to use the up and down arrows and the delete key, but I've probably asked for too much already.

A. Using the shift key with Apple Writer II on the //e can be done without any modification at all. Press Ctrl-Q to access the Additional Functions menu (as described on page 15 of the manual) and select 7 at the prompt. This was designed so that the shift key on the][+ could be used if the "shift-key modification" was made to the machine. On the //e no modification is necessary, simply make sure that the CAPS LOCK key is in the up (lower case) position and type normally using the shift key.

You will need to modify the Additional Functions every time you start the program unless you "permanently" change the default shift key option. This can be done as described on page 72 of the Apple Writer II manual. With the Apple Writer II master diskette in drive 1 select item 4 from the Additional Functions menu. When the program prompts you for the file name enter "SYS,D1" (without the quotes). This also makes all your current print formatting commands the default.

I am not aware of a program to modify Apple Writer II to use the arrow and delete keys.

Q. Secondly, the Epson uses "ESC" codes to select and deselect the various print modes available. Is there a way to change from the default setting to emphasized mode while still in Apple Writer II? I have tried Ctrl-V but am not sure how to generate an escape sequence that the printer will accept. For example CHR$(27);"G" sets the double strike mode. How can I use [V] to imbed the necessary string in the text file?

A. You are not alone in your confusion - this is probably the most asked question in history. I have answered it several times in this column but, as there are always newcomers, here goes again. The problem arises from confusing BASIC language statements with control characters. First a few necessary explanations. Each letter on the Apple keyboard is assigned a unique number called the ASCII code number. An Apple][or][+ keyboard can generate about 94 of the possible 128 codes, (a //e keyboard can generate them all). Obviously there are not 94 (or 128) keys on the keyboard; the way additional codes are generated is by using the modifier keys, shift and control. In order to find out how to get the keyboard to produce the codes you need refer to a table showing the ASCII codes and the equivalent keyboard key. The first 32 codes (0-31) do not represent any printable characters but are usually used as "control characters". What does this mean for your example? CHR$ is a BASIC function that allows you to generate all ASCII codes, even the ones that may not be realizable, using the keyboard (remember you are 34 short with a][+). When the printer manual says CHR$(27);"G" sets double strike, what they mean is that you should send the code 27 and the code for "G" (47). They do not mean that you should send the string "CHR$(27);"G"". If you lookup code 27 in a table you find it is obtained by pressing the ESC key. Thus you should send two characters to the printer, one by pressing the ESC key, and one by pressing the G key.

So far, so good. How do you send these two characters to the printer using Apple Writer II? Unfortunately, Apple Writer II uses most of the control codes (0-31) to control operation of the word processor, so if you try to type these characters the program interprets them as commands and doesn't insert them in your text. To defeat this you must first tell Apple Writer you don't want them to be commands. You do this by typing Ctrl-V. The third space on the first line of the status area at the top of the screen should now show a V. Now you are free to type control characters and have them inserted in your text. When you are finished typing control characters, type Ctrl-V again to return to normal operation. This method works EXCEPT for 27, escape (ESC) and 16, Ctrl-V. To imbed an escape you must type ESC two times, the first time it simulates changing to upper case, the second time it is imbedded in the text. (For Apple Writer //e you must type ESC three times.) To summarize for your example type: Ctrl-V, ESC, ESC, Ctrl-V, G.

Q. I need some good tips on replacing the reference manuals that went with the][+. I am less than satisfied with the current approach to documentation for the //e. The guides appear to be well written but hard to come by without a heavy cash outlay. As I recall they sure were less stingy

cont'd.

the last time I laid out the kind of money that I just did to upgrade. Are the PEEK and POKE guides available for the enhanced (65C02) //e?

A. Apple has made an arrangement with Addison-Wesley Publishing Co. to publish Apple manuals. Thus they should become more available, although not necessarily less expensive. I would expect to see them in bookstores, or if not, a bookstore could probably order them for you. The following are the currently available books.

THE APPLESOFT TUTORIAL, ISBN 0-201-17724-2, $29.95
THE APPLESOFT BASIC PROGRAMMER'S REFERENCE MANUAL, ISBN 0-201-17722-6, $22.95
BASIC PROGRAMMING WITH ProDOS, Revised Edition, ISBN 0-201-17721-8, $29.95 (disk included)
ProDOS TECHNICAL REFERENCE MANUAL, ISBN 0-201-17728-5, $29.95
THE APPLE IIe TECHNICAL REFERENCE MANUAL, ISBN 0-201-17720-X, $24.95
INSTANT PASCAL LANGUAGE REFERENCE MANUAL, ISBN 0-201-17740-4, $22.95
THE APPLE IIc TECHNICAL REFERENCE MANUAL, ISBN -201-17727-7, $24.95
INSIDE MACINTOSH (available January 1986)
Volume 1, ISBN 0-201-17731-5, $24.95
Volume 2, ISBN 0-201-17732-3, $24.95
Volume 3, ISBN 0-201-17733-1, $19.95
Three Volume Set/hardcover, ISBN 0-201-17737-4, $79.95

The actual PEEKs and POKEs that control the hardware have not changed between the regular //e and the enhanced //e, although some minor software changes have been made.The most authoritative document I have seen is the manual "About Your Enhanced Apple //e:Programmers Guide" that has a beta release number of 030-xxxx-A.

Q. I have been reading with great interest about AppleWorks and the 80-column card. I have had nothing but problems with AppleWorks since I started using it. I have never gone beyond the database in AppleWorks because I keep having problems. Originally, machine language figures would start appearing on the screen in various places. Then the program would just freeze. I have had my disk drives and 80-column card replaced and am using version 1.2 of AppleWorks. I don't know what a MMU chip looks like and I couldn't find any portion of my 80- column card with the numbers listed in your article. I would appreciate any assistance you could give me. I don't have any problems with anything else or the programs I have written. It is apparent that our local dealer doesn't have a clue to what is going on and this is getting very expensive.

A. As I mentioned in an earlier column if you are having problems with version 1.2 of AppleWorks and the extended 80-column card (the one with the extra 64K of memory) it could possibly be due to a faulty MMU chip. Problems have been identifed only with MMU chips that have the following date codes, 8314, 8424, 8425, and 8426. If you have problems and have an MMU with these codes you should contact your regional Apple Service Center.

The MMU chip is one of the three large chips (2" x 0.6") on the motherboard. As you open the cover you will see these three chips near the center of the opening. The MMU is the chip in the front leftmost corner of the three and has MMU lettered on the printed circuit board in front of it. On the chip are several numbers but only one should be 4 digits long and it should be something like the above numbers, that is the date code.

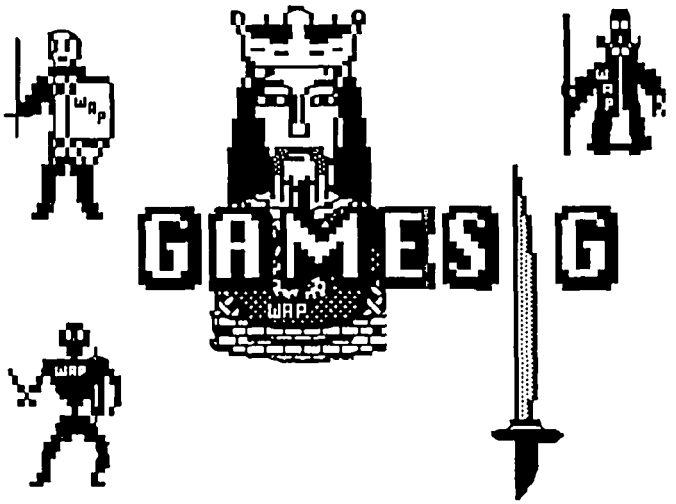
Q. HELP!!! I have a problem with AppleWorks. I have a Grappler+ interface card and a Star Gemini 10x printer, and AppleWorks 1.2. After entering the appropriate control codes into the AppleWorks printer specification section, I still can not get my printer to do anything but print 10 CPI. No condensed print, no superscripts, no nothing! What do I need to do in order to use all my printer capabilities with AppleWorks?

A. In theory there should be no problem using the special features of your printer from AppleWorks (we of course know that theory has nothing whatever to do with what actually happens). The first step is to correctly set up the printer specification to tell AppleWorks what the control codes are for the special functions of your printer. Do this by selecting "Other Activities" from the main menu, then "Specify Printer Information", and then "Add a Printer". You should be presented with a list of printers for which the control codes have already been entered into AppleWorks. I believe your Star Gemini is supposed to emulate one of the Epson printers so I would start by choosing one of them. When you get back to the word processor press Open-Apple-O to access the Options menu and select one of the options to change the printer characteristics. If this does not work you may have to input the specific codes for your printer back in the "Add a Printer" section. You can do this by selecting "Custom Printer" and entering the various codes to operate your printer. This information will be found in your printer manual. When you enter a code into the AppleWorks printer specification, you type exactly what you want sent to the printer, (see the second question of this column for more details). To send escape G (CHR$(27);"G") type ESC G and use the caret (^) to get out of the menu.

Q. What is the difference between Revision A and Revision B of the Apple //e motherboard? Can Revision A be upgraded to Revision B?

A. Shortly after Apple released the //e they discovered that with a small modification to the motherboard the extra memory on a 64K extended 80-column board could be used to produce double hi-res graphics (560x192). The Revision B board incorporates this modification, whereas the Revision A board is not capable of double hi-res. There is no upgrade per se, but for a while Apple was replacing Revision A boards with B boards for no charge if you could show that you had an extended 80-column card (either Apple's or another brand). I don't know if this policy still exists but you should contact your dealer to find out.

GAMESIG NEWS
by Barry Bedrick



The December GAMESIG meeting included demonstrations of Broderbund's "The Ancient Art of War" for the Macintosh. Graphics and implementation appear to be up to Macintosh standards, but no one knew much about the actual game, which involves strategy and combat between opposing armies, with a choice of battle scenarios and enemy commanders. The game has been very well received in its IBM version.

We also saw "The Bard's Tale", a new fantasy/role playing game from Electronic Arts which permits the use of characters brought over from "Ultima IV" or "Wizardry". This notion of bringing characters from one program into another is intriguing. (How about a way to bring a level 15 samurai from "Wizardry" over to "Managing Your Money", for example, where he could represent you in conferences with the IRS?)

Several members have begun and are enjoying Infocom's "Spellbreaker", a sequel to "Sorcerer" and "Enchanter". More on this when someone completes it.

"Enchanted Sceptre", a graphic adventure for the Macintosh from Silicon Beach Software, was also shown. It has extensive sound effects, which include in the combat sequences the whistling through the air of a sword, the blow, and the resulting cries of pain.

Finally, we saw "Wizardry" for the Macintosh, now officially released. (See Ron Wartow's article in last month's Journal for a description.)

Don't forget the January meeting, on the 3rd at 7:30 pm at the office.

FAHRENHEIT 451--MACINTOSH: A Review
by Terry Monks

FAHRENHEIT 451 is one of a series of games that are presented as being based on novels from well-known writers. Apart from this Ray Bradbury Science Fiction book, you can play adventures based on Arthur Clarke's "Rendezvous with Rama", Zelasny's "Nine Princes in Amber", and even a Perry Mason courtroom drama. For those of us still waiting for "Swann's Way" or "Saraband of Lost Time", this will have to do.

Should be a snap. I remember the book, can't be more than 25 years old. I even saw the Truffaut film. For those who came in late, the hero, Guy Montag, was a Fireman in the future. Firemen are people who are sent out to destroy books, because the Government has determined that they are hazardous to its health. Firemen set them on fire, hence their name. Guy Montag does the unspeakable - he retrieves a book and reads it. Naturally, the Government was right and he becomes a depraved citizen and revolutionary, joining an Underground of people have devoted themselves to memorizing Great Literature so that Culture shall not Perish, etc., etc. And that's about where the book ends, with the indication that Hope for Mankind still exists.

Now to the Mac. Two diskettes. Boot Disk A. (Luckily I have a two drive system, later the game will ask me to use the other drive and I pity those who might have to play DiskSwap until driven insane.) Actually, you will need *three* diskettes, since you will probably want to save the game and need a third diskette for that. Also, you can't start on a one-drive machine, save a game and restore on a two-drive machine; nor can you start on a 128K and resume on a 512K machine. They do warn you about this, but who reads instructions before trying a Mac program?

Double-click the icon. Music plays and, after the credits there is a split screen - three panels in the top half with static images, and a text portion below for standard adventure type command entry and description. For starters, here comes my story : I am Guy Montag, fugitive in New York, trying to meet the girl Clarissa, and avoid mechanical hounds and Firemen in an attempt to "help in the most daring plan to rescue humankind from its own ignorance and fear." Sounds right up my alley.

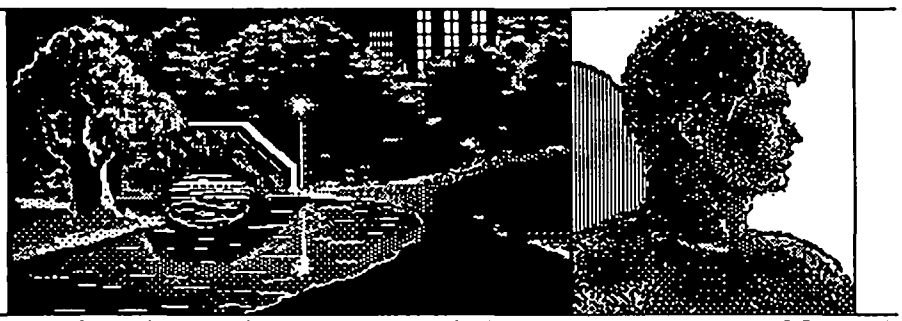
The menu bar looks underpopulated :

Newdata gives us some documentation that was received after the manual was printed. Pictureson is the default display and Picturesoff gives you the full screen text display. The shortcuts are game commands for which you could use the mouse, although I never did - especially since Inventory can be abbreviated to INV. Remember is quite nice if you enjoyed the book - each time you select it you get a quotation from the original. I did not get far enough into the game to see if the quotations were important.

On with the game. The first display is reproduced below.

"A pile of dead leaves", indeed! Well, I am not falling for that old trick, let's go north. Something entirely unexpected and unsupported happens. Let's swim in the pond.

contd.



You are in a clearing in dense woods in the southeast corner of Central Park. A pond is to the west. A narrow path leads north along the shore of the pond, and to the north you can hear occasional low growls. Near you is a pile of dead leaves.

Something equally unjustified happens. I am beginning to wonder about the game.

Oh my! What is under the leaves, but the traditional rusty grating! And so on. This looks pretty pedestrian so far. But buggy. The screen freezes from time to time, no keyboard commands do anything, various frantic mouse clicks in the menu area set it free, but I don't like it.

Other bugs appear. I am in Room 1, which transforms into another room. There is a telephone in the Room 2. I ask for a description of Room 2, which has scrolled off the screen, get a description of Room 1. I can't get out of Room 1 the way I got in, although it seems accessible. But when I type "Get Phone", I am back in Room 2 and everything proceeds normally.

Another one. If I am walking West on an East-West corridor, and pass a path to the North, I expect to see it when I come back Eastwards. But no, on at least two occasions such features could only be seen when moving in one direction.

There are more annoyances: when telephoning someone you have to say "Hang up". Then you are told the receiver is still in your hand, and that you have to hang up to leave the phone booth. So you say hang up again. One character asks for a quotation from Blake, but would not accept the one I liked. I had to give him back the one he gave me earlier or nothing would happen.

After a few non-contiguous hours of playing around, I got the hang of things. This is like all the other text adventure games: you need to make a map and get killed many times before you figure out what you are supposed to do. It turns out that nearly everyone else you encounter in the game is part of the Underground, and, if you say the correct quotation, they will help you, but you must spell everything exactly, and put the commas in the right places.

In order to advance in time to finish my review, I used a couple of the hints provided in the book. Hints are given in a simple substitution cipher, and at least one of them told me to do something I would never have thought of, something totally irrelevant to my mind.

Can I recommend the game? Well, it has some nice - if static - graphics, and some nice sound effects - sick birds, and cathedral music, for instance. It has no discernable sense of humour, unlike the Infocom series. It has several petty annoyances. But, most telling, I am returning it to the GAMESIG chairman without finishing the game - I just don't care what happens to the world without literature. Someone else can tell me how it ends.

AMAZON: A Review
by Eric McGrath

Somewhere in a product announcement some time ago, I was led to believe that Telarium Software was in the process of creating a truly revolutionary genre of computerized games. More than just exploring mazes and solving puzzles, these games would feature true and in some cases unique branching of game paths based on choices made by the player, allowing completely alternative futures and many unique replayings of the same game. Initial titles would be based on the works of authors like Arthur C. Clarke and Ray Bradbury. I was ready to sign up. Surely someone out there is as naive as I am.

AMAZON is not a revolutionary game. It is well polished, featuring over 100 unique graphic scenes and an original story by science fiction writer Michael Crichton. But the only "branching" allowed in the story is the order in which you go through certain sequences of the game, and the level of play which opens or closes certain paths. Sooner or later you're gonna get captured by the corrupt government troops.

Use of the Macintosh interface is not a standout. I suspect the game could be played without the mouse. I got the distinct impression that AMAZON was ported, not written freshly for the Mac. Although true, this should not have been obvious. The graphics are okay, but saving or restoring a game sometimes makes the program forget to bring them up. And seeing some of the screen graphics in monitor-like color on the box does nothing but create the impression of "another ported game."

AMAZON might be a trifle wimpy for the hard core monster killers. Instead of the CIA you work for the National Satellite Resource Technology company. Although you carry a gun, you never kill anybody (I tried), and the emeralds you're looking for in the lost city of Chak are valued mainly as a source for advanced computer components.

AMAZON strives to be breezy and entertaining at all times. Satellite communications with the home office are well done (although whoever programmed the Raiders for 42-0 over the Redskins at halftime was obviously a Communist) and become neither a crutch of free hints nor a drudgery. The music is almost always fun. For experienced gamers this breezy approach may be a refreshing change. I found it alternately refreshing (when I'd just solved a puzzle) and annoying (when in the middle of not solving one). The game's a lot more fun the second time through, not to mention a lot faster.

AMAZON comes on 2 disks that defeated Copy II Mac's

contd. on pg 15

Déjà Vu: A Review
by Steven Payne

I was prepared to hate this program, which opens in the men's room of a sleazy bar, and which arrived for review with "xeroxed" documentation. Surprisingly, though, Déjà Vu turns out to be one of the better games designed specifically for the Macintosh. The basic plot is similar to the detective mysteries of Deadline, Witness, and Suspect. Here you wake up in a bathroom stall, apparently drugged, with no memory, and quickly stumble upon evidence implicating you in a murder/kidnapping; you must discover your own identity and what really happened before you are caught by the police and given "the 20,000 volt goodbye from the chair in Sing-Sing."

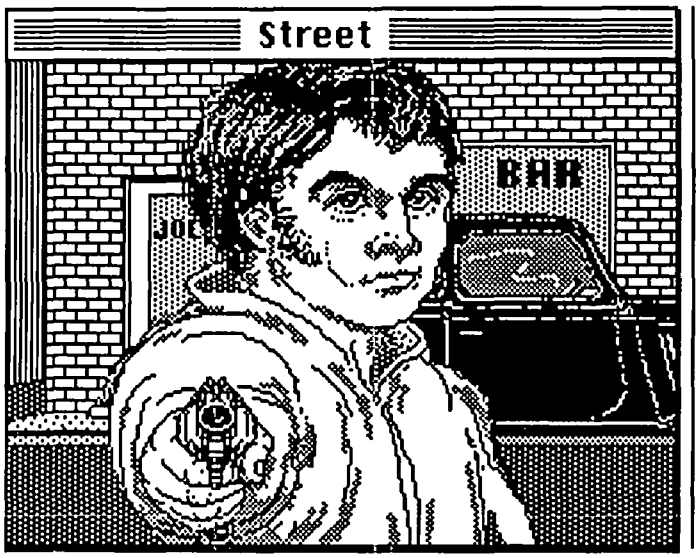


Figure 1

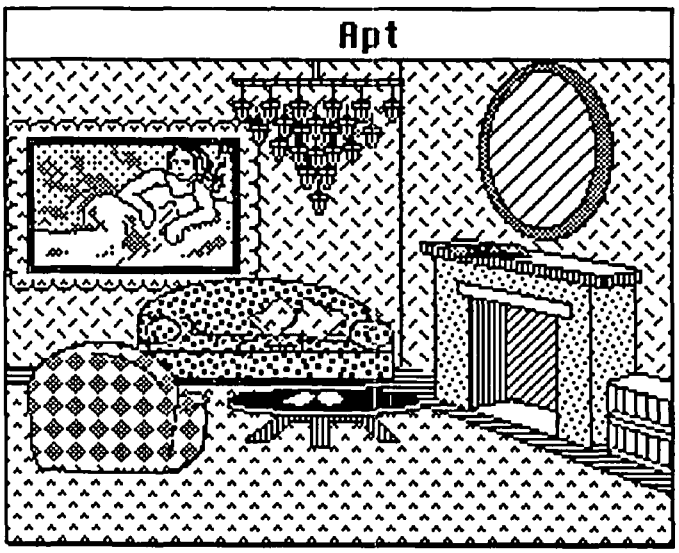


Figure 2

But while the Infocom mysteries are all text, and play essentially the same on any computer, Déjà Vu includes splendid graphics (see Figures 1 & 2) and is almost entirely mouse-driven, making effective use of the Mac's special features. To begin with, during the game the screen ordinarily displays the familiar pull-down menus and a series of windows with scroll bars, size boxes, and so on (see Figure 3). Your surroundings are depicted in a graphics window at the center of the screen. Above it, the command window offers a choice of eight possible actions; you move about, manipulate objects, and interact with characters by clicking first on the appropriate command and then on the items or individuals in question. For example, if you click on "Open" and then on a gun, a new window will appear on the left of the screen showing the bullets in your weapon. Clicking on "Open" and then on the "Self" button (upper right of the screen) produces an inventory window. You can pick up or discard items by selecting and dragging them from the graphics to the inventory window, and back again. Another window on the right shows your available exits (not all of which may be visible); you can move by clicking on the boxes it contains or by double-clicking on the exits you already see. Finally, the often clever text appears in the window at the bottom of the screen.

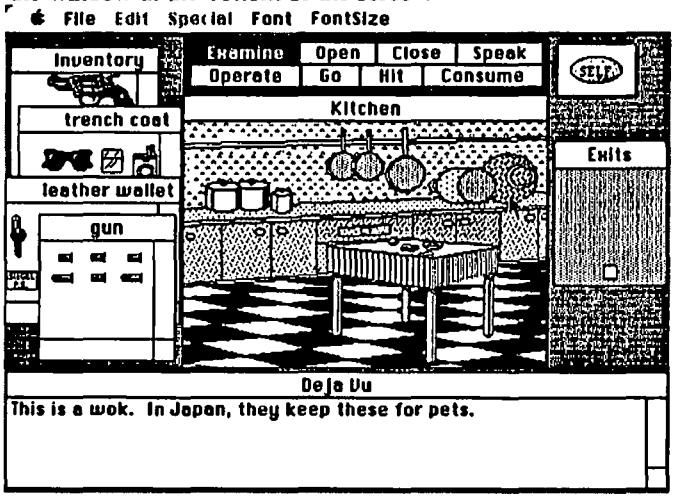


Figure 3

Déjà Vu uses two disks and is quite extensive, though the speed of the program is fast enough, with plenty of room for saving games. Those without an external disk drive may have to swap disks once or twice at the beginning and when quitting. The review copy refused to run on a Lisa, but I believe this problem has been corrected in the release version.

I was most impressed, I think, by the programmers' obvious attention to detail. Almost all objects shown in the graphics window (even the tiniest) are "really there," and can at least be examined to produce a pertinent (or impertinent) comment. There are many little extras: a "Special" menu that includes not only "Clean Up" but "Mess Up"; the ability to print yourself a diploma upon successful completion of the game; the fact that Déjà Vu can greet you correctly with "Good morning," "Good afternoon," or "Good evening," by reading the Mac's internal clock. There are even a few sound effects (including a flushing toilet!) and bits of music scattered through the game.

contd.

My criticisms are relatively minor. The restriction to eight commands occasionally produces some logical and linguistic contortions; you must "Open" a corpse or wicker trashbasket in order to search them, for example. Again, this game (like most adventures) is obviously written by males for males; the face that looks back from the mirror is a man's, and while I would hesitate to call it "sexist," the humor would not always amuse a member of NOW (I know, I know, it's the genre--but it does make me a bit uneasy that all the women characters, though not all the men, are either treacherous or repulsive!). Most important, the deliberately seedy touches may not appeal to all players. To finish the game you must explore bathrooms and sewers, encounter hookers and bums, and experiment with guns, drugs, and hypodermic needles. Therefore, while it is hardly pornographic, it perhaps deserves a PG-13 rating; it may be inappropriate fare for the very young. Nonetheless, I expect that Déjà Vu is the kind of program many Mac owners will want to buy, not only to play themselves, but to demonstrate to friends some of the exciting capabilities of their great little computer. Everyone I know who has seen it has been charmed. Mindscape, $54.95.

Amazon contd. from pg 13

backup attempts. Because of this I did not attempt to run an update on the 1.1 version of the Finder found on the program disk. If you feel strongly about such things, be warned. The game doesn't like you messing with the Control Panel (it bombs), and I experienced bombs on 3 occasions shortly after saving. You save games on yet a third disk. The game on 2 occasions scrolled thru text too fast to read in the 4 line "dialogue" window, but on both occasions it was nonessential detail.

AMAZON comes with the above mentioned 2 disks, a map of the Amazon, a "memo from the boss" by way of documentation, a newspaper clipping on the fate of your predecessors, one page of NRST field regulations, and Strategic Notes. The Strategic Notes include hints printed in the Cairo font, an ingenious touch, and a wordlist to help you cope with the parser. This last is the most valuable item of all.

I have talked to people who loved AMAZON on the Apple][. Perhaps my lack of patience is unworthy of a true adventure gamer. But I hardly bought a Macintosh because I enjoyed conforming my ideas, thoughts and actions to the strictures of an unthinking machine. On four occasions I played guess-what-I'm-thinking with the program for significant (i.e. storming out of the room in frustration) periods of time. I had already deciphered the hints from Cairo, but the parser didn't like my attempted answers. And I'll never agree that "fly Paco" bears any resemblance to the concept of "Hey, Paco, how about looking for a way up this cliff." For those who don't get enough of guess-what-I'm-thinking from the boss at work, be my guest. I got so tired of it that I never did try to open the door with the gold lock.

I can recommend AMAZON highly to those looking for a game that is a change of pace from the stab 'em ups that you or your adolescents are usually presented with in the adventure gaming field. Personally, I found the game's ability to accept "go airport" and refuse "look shelf" to be too unbalanced in terms of pacing to be much fun.

BETA TESTING MACINTOSH Wizardry®

by Ronald Wartow

Imagine getting the pre-release version of a program directly from one of your favorite software authors months ahead of release. Further imagine that the author wants you to spend tens of hours with the program, and through personal contact and written reports, wants you to submit constructive criticism and suggest changes which you eventually will see incorporated into the final version. Even further imagine, you are given credit for your efforts. That's what my experience beta testing WIZARDRY [Sir-Tech Software] for the Macintosh was like.

Although the program is a game, I expect that my experience closely parallels that of beta testers of any computer program on any computer. So, you members just dying to beta test the latest spreadsheet, database, word processor, or programming language, please listen up.

WHAT IS WIZARDRY?

WIZARDRY is a fantasy role-playing game involving the exploration of a mammoth maze with a party of adventurers you have created and developed to find and dispose of a very unnice wizard. The program contains thousands of lines of code and the authors have equated its complexity to that of a "monster" database program. (For more on WIZARDRY, see the March and December1985 Journals.)

WHY ME?

I certainly didn't ask, but I didn't dwell on it when I was notified of my new "duties" on my birthday, April 18. Sir-Tech had received over 2000 requests to beta test the program. (Over 5000 requests have been received to beta test WIZARDRY IV on the Apple // series.) I assume that being the GAMESIG Chairman of a multi-thousand member Apple Users Group with over 1500 Macintosh owners helped. Also, I had many contacts with Sir-Tech in the past, both as a WIZARDRY player and on behalf of the club.

BEFORE STARTING (April 18 -- June 20)

Before I received the program, I had to sign a nondisclosure agreement which requires you to protect the program and the manual as carefully as your own valuables. (Every one of the 4 versions I received had a specific number not only prominently displayed on the labels and on the title screen, but I was told my "I.D" was also "buried" throughout the code. You think they were trying to tell me something?) The consequences of breach are too heinous to mention. Worst of all, you can't tell anyone anything about the program or that you even have it. This was the toughest part of the process.

Two months from the return of my nondisclosure agreement (a copy protection problem), in the middle of June, I and about 30 others across the country, got the program. Little did I know then that I would spend upwards of 70 hours as a beta tester.

WHAT DO YOU MEAN I'M NOT SUPPOSED TO PLAY? (June 21--August 15)

It was "painfully" clear immediately that I was not supposed to play, but work. Sir-Tech provided pages of written instructions and formal bug report forms. The materials made it clear that I was to give the program a complete workout, trying everything even crazy things, to see what would happen. I was given the authors' (Robert Woodhead and Andrew Greenberg) home phone numbers and encouraged to contact them. It was stressed that written as opposed to oral reports were preferable.

I was to report obvious bugs, particularly program crashes and try to reproduce them noting the Mac's convenient alert code messages. Also, I was supposed to observe the subtleties, balance, logic, and flow of the game to see if anything unfaithful to the WIZARDRY tradition was happening. Comments and suggestions on any aspect of the program were encouraged. Finally, beta testers were to be given a nominal monetary amount for being the first to report a bug or an implemented suggestion, as well as a copy of the release version. (I asked that any monies due me be given to the vision fund that Sir-Tech supports.)

CRITICIZE GREENBERG AND WOODHEAD?

The first thing I had to do was forget that I was about to tear into a program which took well over a year to get to this stage (See September 1984 MacWorld) by two people who had previously given me hundreds of hours of pleasure with their work. But, I couldn't be a fan and be an effective beta tester. I had to ignore the fact that I hadn't the foggiest notion what kind of programming would be required to implement my suggestions. Moreover, I had to consider the fact that many Macintosh owners are new computer users and had never seen the prior incarnations of the program.

INTO THE FRAY

I followed "orders" and tried everything. My initial fears that I wouldn't find anything wrong and be overwhelmed by the excitement of participating in the testing disappeared as I started to pick up things right away. Some were very obvious, like typos and program crashes. Other things not so obvious that didn't comport with the flavor of the game started to surface. Within one week, and after 25 hours with the program, I submitted a 5 page single-spaced report covering 17 bugs, suggestions, and comments. By the time I had finished, I had sent 5 separate comprehensive reports.

Along the way, I spoke with Robert Woodhead several times and other Sir-Tech people. They made me feel like a real participant, not only in the testing, but in the "development" of the program. After 108 separate boots and over 55 hours, I finished with my beta test copy after the prescribed 2-month period.

contd.

Some examples of matters I reported follow:

• The only way to backup, i.e. save, your characters, which is very important in a fantasy role-playing game to avoid wasting hours of work in case some horrible fate befell your adventurers, was by copying your scenario disk with "Disk Copy" or the Finder. This was a royal pain since I had only one drive with my "skinny" Mac at the time, and I assumed that many purchasers of the program would be similarly situated.

• There were no desk accessories, particularly the Note Pad, which I thought would be very helpful, given the nature of the game.

• While there was a "Pool Gold" command in case one of your characters couldn't afford something in the castle, this would divest the other 5 party members of all their gold and you had to engage in continually pooling gold, as opposed to some method to evenly divide or trade specific amounts of gold.

• After casting a party-protective spell normally castable only once in a maze expedition, a dialog box kept asking if I wanted to cast another.

• Other than in combat, there was no visual way to keep constant track of your individual party members' condition without opening windows. In the Apple // series WIZARDRY, this information is displayed at all times, and effectively contributed to the mood of the game. (When one of your most powerful characters is slowly dying of poison, you want to know about it.)

THEY REALLY LISTENED, BUT I THOUGHT I WAS FINISHED? (September 7--October 1)

I received another version in early September. Much to my surprise, the program now contained a backup utility, desk accessories, a "divvy gold" command, no dialog box for the one-time-only spell, and an alternate window arrangement to show party condition at all times. Also, all of the bugs I'd mentioned, like menu items "grayed" [i.e. disabled] at the wrong times and a statistics screen item that wasn't "computing," were fixed.

Others had been working hard also because several other major changes were made: new commands, the ability to print out your character statistics screen right from a menu, changed menus, enhanced maze graphics.

Was I finished? No way. The second beta test version had to be thoroughly tested, although now it was to look for crashing rather than subtleties of play. (They had to stop sometime.) Much to my horror, more than once, on quitting the game, the program crashed, and the same ID error message kept cropping up. I thought it was important enough to call. You could feel the concern of the Sir-Tech people as they spent much time with me on the phone asking every conceivable question about what was happening. An ad was about to appear in MacWorld, and the company was anxious to get the program out. I "held my breath" and waited.

MY NAME IN THE MANUAL AND, BY THE WAY, WOULD YOU MIND CHECKING IT OVER? (Early October)

GameSig sponsored an unrelated visit from Sir-Tech's Director of Customer Relations at the October 3 meeting. My spirits were buoyed considerably when she brought me the "release" manual. There on the first page was the authors personally thanking me by name. Fifty other names were on that page, but all I could see was my name. Far more importantly, I could now tell everyone. A few days later, Sir-Tech asked me to review the manual. I spent a few hours poring over it and sent my comments right away.

SIGMAC GETS TO SEE IT (October 5)

Although the program had not been released, Sir-Tech gave me permission to show it to the October SigMac meeting. Other than Sir-Tech people, their trusted colleagues, and the testers (about 75 people, total), the SigMac attendees were the first people in the country to see the program. Now, not only could I tell everyone about it, but I got to demo it.

ANOTHER VERSION? (Middle to end of October)

Ads had appeared in MacWorld for 2 months running when another version was sent to me. This time, it had a nice shiny label on it, but memory problems on 128K machines and the ability of the program to run on an XL/Lisa were causing concern. These problems had apparently caused my crashes on the second beta test version. A fellow GameSigger, Ray Hakim, had a Lisa and agreed without hesitation to help Sir-Tech out. Fortunately, all went well. Until. . . .

YOU'VE GOT TO BE KIDDING? (Halloween to November 5)

On October 31, Sir-Tech called again. It seems that they were shooting for a release date within the next couple of weeks and were sending Ray and me by next-day-air the version that would be released. Just one more time to make sure that all was OK. They needed to know of any problems within a couple of days. Both of us spent several more hours with the program. Unfortunately, I started to experience some crashes. I called Sir-Tech and they spent time checking out my and others' problems and resolved them to their satisfaction.

When I quit the game on November 5, I realized that perhaps that might very well have been the last time I will ever look at Macintosh WIZARDRY. Probably not. Maybe I'll take my brand new shrink-wrapped "payment" to the WAP garage sale. Definitely not.

RELEASE

Macintosh WIZARDRY was released to the public on November 27, 1985, five months from when I received my initial beta test version.

WHAT WERE THE BENEFITS AND WHAT DID I LEARN?

1. First-hand look at a software development process, which obviously concentrates on not releasing a program to the public without thorough testing and riddance of bugs and inconsistencies.

2. Kinship with the people behind that process.

3. Genuine appreciation of why it takes quality programs so long to come out.

4 . Personal pledge to never, ever beta test a program in which I had no interest.

FINGERS CROSSED. . . . . RABBIT'S FOOT IN HAND. . . . . .

Now, if Sir-Tech liked my work, I wonder if, maybe, just maybe, they'll let me do this for the next WIZARDRY scenario on the Apple // series, which I and thousands of others have been anxiously awaiting for over 2 years.

TELECOM SIG NEWS
by Dave Harvey

The Telecom SIG met after the WAP meeting on November 23 and was conducted by George Kinal. The meeting started off with a question about the compatibility of the X-COM modem and 80 column software. The program that comes with the modem will not support some of the 80 column cards. One of the communications programs available in the WAP Disketeria may suffice, or you might have to purchase a professional communications package.

Next we discussed the recent Byte Magazine article on the newly developed modem-on-a-chip. The outstanding thing about this new chip is that not only are conventional modem circuits provided but it also includes circuits for voice so that an answering machine function could be used. The article gives details on how to interface the chip with a typical computer and includes a program written under MS DOS which could be adapted for use on the Apple. There are all sorts of new applications that could be developed as result of this new chip.

We then launched a general question and answer session. We discussed problems with radio frequency interference (RFI) when using a modem. One of our members lives close to a radio station and as a result gets the station coming in on the modem wire into the Apple. It was suggested that he should get some ring magnets and wrap them around the incoming wire to the computer. The phone line should also be checked to see if it is grounded.

Another member was having problems with double characters appearing on his screen whenever he typed a letter. Selecting full duplex mode is the probable solution, since half duplex mode causes double characters to appear on the screen.

A WAP member was having problems with the WAP BBS not accepting his password. He was using a Macintosh to communicate. It was recommended that a delay be put after each character transmitted. At 1200 baud, the WAP BBS might not be able to keep up with the speed at which the Macintosh sends out characters.

Sometimes modems confuse a busy signal for a ringing signal on certain bulletin board numbers. This might be due to the busy signal being at a level higher than normal. In this case, try adding an 800 to 1000 ohm resistor in the telephone line. That would reduce the level of the busy signal and possibly cure the problem.

Mike Ungerman is looking into inviting The Source to one of our meetings. The one obstacle to that is that a telephone line is needed to conduct any demos. One solution is to use the line that the cafeteria concession uses by making special arrangements with them. Another alternative is to use the pay phone as was done a few years ago and run wire from the pay phone location to the area the Apple is set up.

Dave Harvey discussed the problems that the BBS committee is having with the Sunol Disk. As the matter now stands, we are very disappointed in the performance on the unit. Some features such as random access tape backup which was advertised as being available for the Apple, in fact are not available for the Apple. There are also problems with the multiplexer and interface card which have not been fixed by the dealer. At this point in time, we cannot see how we can live with the present Sunol hard disk. We are trying to return it and are looking for something else. George Kinal described the problem we are having with the Courier 2400 baud modem used by the system. At first there was the bug that would not allow certain members' modems to be recognized, such as the modem for the Radio Shack model 100. That bug was fixed by the addition of a new ROM in the modem. Then a new bug surfaced. This one had to do with timeout. When someone called and the modem detected no carrier, it reset. If, while it reset, someone else called in, the modem would freeze and no more calls would be answered. We are still waiting for the new ROM that supposedly fixes this problem.

Lastly, we discussed the recent inquiry by the FCC to telephone companies asking if they have encountered any problems with autodialing modems that repeat dial. This would indicate that if problems are reported, special rules might be instituted to correct this problem. It was agreed that it would be hard to regulate software but easy to regulate modems to solve this problem.

EDSIG NEWS
by Peter Combes

EDSIG Calendar

Thursday, January 23, 1986 at 7:30 PM
Thursday, February 20, 1986 at 7:30 PM
Subjects to be announced.

There will be no EDSIG meeting in December 1985. All EDSIG meetings are held in the Washington Apple Pi offices at 8227 Woodmont Avenue in Bethesda, MD

Meeting Report

Wednesday, November 20, at 7:30 PM.

The meeting looked at various kinds of educational software. Think Fast was shown in a remarkable Mac-alike version for the Apple //, though its right brain-left brain definitions still arouse controversy. RoboMath by Mindplay is a robot-filled arcade game to teach multiplication and division, and Campaign Math by the the same publisher is a most ambitious attempt to use the complexities of the election process to teach ratios, fractions and percentages.

The Macintosh was represented by American History Adventure, Reading and Thinking, Learn about Halley's Comet, Typing Intrigue and MacEdge II. Look for detailed reviews by Virginia Caesar in a forthcoming issue of the Journal.

APPLE TEAS
by Amy T. Billingsley

Washington Apple Pi
Apple Tea
Wednesday, January 15, 7 - 9 PM
501 Hawkesbury Lane *
Silver Spring, MD 20904

Would you like to have a Question & Answer session like those so helpful at our monthly meetings, only in a smaller setting within a home atmosphere, with refreshments? Share tips on hardware and software:

- Word Processing
- AppleWorks
- Spreadsheets
- Home Accountant
- Data Base

R.S.V.P. to above address or 622-2203 (be prepared to leave message). Mention what you would like to discuss and what you're interested in learning more about, what your expertise is, and what software you are using. Also, if you can't make this Tea, would you be interested in one another time? Would you be willing to host an Apple Tea in your home.

* Directions: Take Route 495 to New Hampshire Avenue North exit. Drive 4 miles to Randolph Road. Turn left. Drive to 1st traffic light, Locksley Lane, and turn right. Drive 1/2 mile to elementary school (Hawkesbury Lane). Turn left. 501 is 1st house, righthand side, on corner after Whittingham Drive.

MINUTES

NOVEMBER BOARD MEETING

The Executive Board of Washington Apple Pi met on November 13 at 7:30 PM at the WAP office, with Tom Warrick presiding. There was considerable discussion as to the appropriate mechanism whereby Slices of WAP could sell Disketeria disks. The first class mailing rate was raised to $15, first applied to new members and then to renewing members when it is time to reorder new forms. The WAP logo will be printed on Disketeria disk sleeves. The Board gave authority for negotiations for a new lease of the present premises. A Dealer Relations Committe was established.

NOVEMBER GENERAL MEETING

Washington Apple Pi met at Walt Whitman High School in Bethesda at 9:00 AM on November 23. A Q&A session by Bruce Field, Tom Warrick and Lee Raesly was followed by the business meeting, at which Tom Warrick discussed the new meeting format that commences in January. The membership was asked whether they wanted to decrease the size of the BBS columns, increase them, or keep the size the same. An overwhelming majority of the members wanted to keep the size of the columns the same.

Ray Hobbs led a presentation on computer music. Gary Larson spoke on sound sampling and digitizing. Ray, Gary and Tom Warrick demonstrated music software and hardware.

APPLE //c NEWS
by Chuck Holzwarth

What future does Apple plan for the //c? It appears that Apple is making the differences between the //e and the //c quite small. The ROM upgrade makes them virtually the same machine. The major difference is that the //c does not have slots.

It sure was nice of Apple to install a switch for using the Dvorak keyboard. It would have been even nicer if they had included some overlays for the keys so that the "hunt and peck" types like me could figure out where the letters are.

The //c was the "new" Apple slightly over a year ago, but most new enhancements and products come out for the //e first. Hard disks are still out of the reach of most owners. I hear quite a bit about the "computer industry slump" but none of the manufacturers have come out with an affordable 10 megabyte hard disk for the //c.

I wonder if any manufacturer has thought about building an expansion port for the //c to add slots similar to those on the //e. Many of the owners would probably buy the expansion if it were available. My //c fits into my briefcase for traveling, but isn't expandable enough for use at home.

The 16-bit processors are now coming out for the // series. It sure would be nice to have my choice of a 65c02, z80 or 65816 when I boot. I wonder if anyone is considering creating a multi-tasking system for the // series. It can't be that difficult with multiple processors. Just think, a 640K //c that can edit a file while the printer is busy printing and a terminal emulator is downloading a file to or from disk.

Has anyone thought of writing a DOS that can read, write and run from either a DOS 3.3 or ProDOS disk. I get tired of using the utility disk to translate text files between the two so that I can use my text editor on files I capture with my terminal emulator. I don't want to buy new software or upgrade (at additional expense) to do this. I wonder how many people would like to use the Mouse Paint to work on a graphic and then use a DOS 3.3 graphics editor to made additional changes or printing. It's a hassle to stop what I'm doing to use the convert utility.

Well, Santa, that's my list for now. Just think, if the computer industry elves concentrate on some add-ons instead of just making a new machine, maybe there will be some money by the tree instead of just a stale cookie and some lukewarm milk.

LAPTOP COMPUTERS AS APPLE ACCESSORIES The Third in a Series

(The Physical Aspects of Interconnection & An Autodialing Program to Retrieve Stock Prices)

by George Kinal

In the last installment of this series, I reviewed the internal or software aspects of transferring data (text) between a lap-portable computer and an Apple. This article covers the actual physical (electrical) details of connecting two computers. There are two general methods for linking two computers. The first is by connecting two modems together. Since the internal modems in the Model 100 and M10 are 300 baud units, this first method is normally limited to that slow speed. Still, if you have a Micromodem, Zoom, or Apple-Cat modem on your Apple][, that will be your only means of data transfer until you get a serial card. The second, recommended, method is to connect the two computers together using the RS-232C serial ports. Apple ///, //c, and Mac owners ought to prefer this method, since their computers already have built-in serial ports.

Okay. Modem-to-modem. Almost all modems today are equipped with modular (RJ-11) plugs or jacks. For the laptops, however, an adapter cord is required between the 8-pin circular DIN socket and an RJ-11. Plug the two modems together (use a barrel female-female coupler if necessary), and away you go. About the only trap here is that one modem must be put into answer mode, the other in originate. You may find it easier to switch the laptop to answer mode (switch on bottom or side), and then use the Apple just as if you were calling a bulletin board or data service.

If you haven't already purchased the exhorbitantly-priced adapter cord for your laptop, you can make your own adapter cord. You really only need to connect the two main telephone cord wires (red and green) to pins 3 and 7 (as Radio Shack numbers them) of an 8-pin DIN plug. See Figure 1 for the correct pin designations. Can't find an 8-pin DIN plug? Then buy the common 5 pin type, break off the middle 3 pins, and use the plug without its keyed shell. Pins 1 and 5 are spaced so they will plug right into pins 3 and 7 of the 8-pin socket!

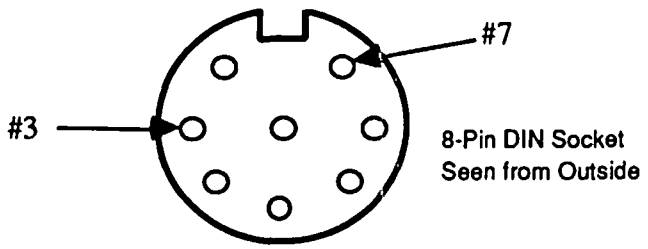


Figure 1: Telephone Line Connections (M10 and Model 100)

An even better solution for the mechanically adept is to mount an RJ-11 jack on your laptop. On the Olivetti M-10, this is easier to do gracefully than on the Model 100, because the case is styled differently. First, you need the tiniest possible RJ-11 jack. I made mine by taking a surface mount jack and hacksawing away the plastic case that surrounds the jack itself (I used an "International Surface Mount Jack #A-T5"). The remaining jack is more or less cubical, 5/8 to 3/4 inch on a side. Part number TT-1321, at 2 for $1, from M. Jones, Box 12685, Lake Park, FL 33403, is more or less the same thing, without the need to saw anything extraneous off. Next, you need to find a spot on the underside, back, or side of the case to install the jack. On the Oli, a handy place is on the bottom, three inches forward of the left rear rubber foot. If you cut the hole carefully, some plastic cement or epoxy will allow the jack to be installed with its face flush with the case. Now for the wiring. Pin 7 of the DIN jack is easy to spot on the left side (as you face the socket's back) - it's the highest, or outermost, lead. Pin 3 is tricky to identi- fy, and even trickier to attach to: you'll need a soldering iron with a very thin tip. Don't worry, though, you won't hurt anything if you get the wrong lead - everything on this jack is related to the telephone line. Figure 2 shows the back side of the DIN connector. Use an ohmmeter to confirm that the wires indeed are connected to the right pins; then splice the wires to the two RJ-11 jack leads (red and green - it doesn't matter which way). I know this all seems like a bit of trouble, and not everyone's idea of a fun job. But it sure is handy having a real RJ-11 right on the machine!

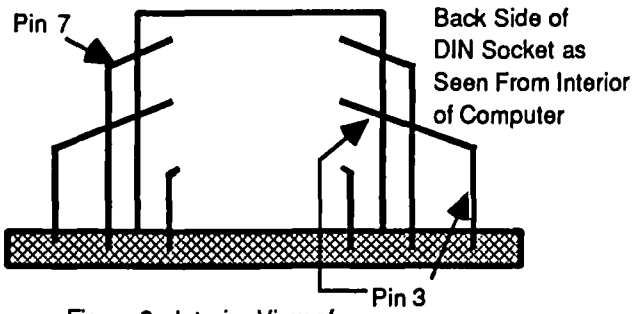


Figure 2: Interior View of Telephone Line Connections

Now, how about RS-232C connections? Here again, there are various cables for sale at Radio Shack and elsewhere that may or may not work on your particular setup. But finding the "right" cable for the //c or the Mac may be a problem. For the slightly more adventurous, it really pays to bite the bullet and make your own cable. Why? Well, the first such cable you buy probably won't be the only one you'll ever need. With Apple Computer now pretty much standardized on

contd.

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serial interfaces for all peripherals, any accessory you add will need a cable. Once you learn how to make the laptop to Apple cable, making others will be a cinch. Unlike certain other hardware construction chores, playing with RS-232C cables has one major advantage: YOU CANNOT DAMAGE ANYTHING IN THE COMPUTER BY ANY WIRING MISTAKE! The RS-232C standard was defined so that, even if by some horrible accident you connected all 25 leads together, or completely jumbled up the wires, nothing would be damaged! So, the worst thing that can possibly happen if you miswire a cable, do a poor job of soldering, etc., is that the cable won't work. (These comments of course do not apply if you make connections to the computers while they are turned on. Wire the cable, THEN plug it into the computers).

The thing that makes connecting to the laptops so easy is that no "handshaking" is needed. This is simply a re-statement of the "Quick and Dirty" method of connecting two serial devices: connect each end so it takes care of its own handshaking. Let me try to explain.

The RS-232C's most important wires are those that carry the data. One wire carries data in one direction (laptop to Apple). Another carries data the other way. Both directions share a common ground wire. On the laptop, data comes out of pin 2; data is accepted on pin 3; and ground is pin 7. We don't have to worry about any other pins on this end. How about the other end of the cable? Depends on what it plugs in to:

APPLE SUPER SERIAL CARD, and most other serial interface cards EXCEPT CCS 7710 - (Assumes card is jumpered or arranged the same way as for connecting to a Modem) - The data pins are the same as described above for the laptop: data OUT of pin 2, goes into pin 3. So, our cable connects pin 2 on the Apple end to pin 3 on the laptop, and vice versa. Now, the Apple interface DOES require "handshaking." What the heck is handshaking? It is a set of signals that the interface either sends or expects to get that tell it that it is OK to send or receive data. The Quick and Dirty principle says that we will "fool" the interface into thinking that it is always OK. To do that, we connect ALL the handshake leads together (pins 4,5,6,8, and 20). (The Quick and Dirty cable described on page 35 of the October 85 WAP Journal has this handshaking lead strapping on both ends of the cable. That way, it won't matter which end you plug into the Apple. The handshake leads are unnecessary, but harmless, on the lap computer end).

QUICK & DIRTY on the Apple //c -- On the //c's 5 pin DIN connector, data comes out on pin 2. Receive data (INTO the Apple) is expected on pin 4. Ground is pin 3. Pins 1 and 5 are the handshake pins. Connect the two handshake pins to each other. The three signal wires are then obvious. Ground (pin 3 on the //c) to ground (pin 7 on the laptop). Data from //c to laptop -> pin 2 of //c to pin 3 of laptop. Data from laptop (pin 2) to //c (pin 4). Got the idea now?

QUICK & DIRTY on the Mac -- The Mac's 9 pin connector carries the following signals. Ground is pin 3. Data comes OUT of pin 5. It is received on pin 9. Handshake leads are pins 6 and 7. Same story: tie the handshakes together. Take data out and connect it to the pin that wants to see data coming in on the laptop (5 to 3). Take the laptop's data out (pin 2) and give it to the correctMac pin (9). Grounds are connected (Mac 3 to laptop 7).

Now I'm going to switch gears, for those of you who don't find hardware topics of much interest. Actually, I need some excuse to put a program for a non-Apple computer into the WAP Journal. The program listed here illustrates how it is possible to program the lap computers directly in MicroSoft BASIC to do some pretty powerful communications tasks. What does this have to do with Apple computers? Well, the lap computer isn't exactly the best machine to do data base or trend analysis work on. So, after the stock price data has been collected by the laptop, the data file may be transferred (using the methods I have been writing about in this series) to your favorite Apple for semi-permanent record-keeping or for analysis. The program as shown is for price retrieval via COMPUSERVE. It can be easily modified for operation through The SOURCE (would some reader out there please do that and send in the program?) I wrote it for my Olivetti M-10; REMs in the code show where subroutine calls must be changed for the Model 100. The listing has also been augmented with explanatory REMs - obviously you don't want to waste memory space by actually entering these REMs. Incidentally, this listing is itself a good example of how the laptop and Apple can be used together. The program listing was transferred from my M-10 to my Apple][; the additional REMs were added using WordStar after the listing was merged into this article.

Before running the program, change the time of day or night you want the call to be made (Line 6) and the local CompuServe telephone number (Line 8). Also, using TEXT, prepare a list of stock symbols under the file name SYMBLS.DO, one symbol per line, e.g.:

```
BEL
CG
CQ
RAL
HECHA
MCIC
```

Here is an explanation of the "Macro" string in line 10, which is actually used by the Subroutine call in line 110:

```
=^C  SEND Control-C when connection is made
?D76076,175^M When CompuServe sends "USER ID",
   send it and a carriage return (^M)
?dYOUR+PASSWORD^M  When CompuServe asks
   for Password, send it and a carriage return
?!GO QUOTE^M  Upon the ! prompt, send GO QUOTE

   command
?!1^M  Send choice "1" for on-line quotations
?: Wait for the colon (in "Issue:"), which prompts you
   to submit a list of stock symbols
```

LISTING OF "QUOTES.BA" PROGRAM FOR M-10

```
5   MAXFILES=4
6   RT$="11:08" :REM  Make call at 11:08 A.M.
8   PH$="5590200" :REM Local COMPUSERVE
    Telephone number
10  LG$=PH$+"<=^C?D76076,175^M?dYOUR+
    PASSWORD^M?!GO QUOTE^M?!1^M?:>"
```

contd.

```
    : REM Uses TELCOM's built in autodial and logon
      features
20  M= VARPTR(LG$)
30  AD=PEEK(M+1)+PEEK(M+2)*256
40  OPEN "SYMBLS.DO" FOR INPUT AS 1
    :REM Stock trading symbols list
45  FOR I= 1 TO 25 :REM List not more than 25 symbols
50  INPUT #1,S$
51  NS=NS+1
54  SS$(I)=S$
55  IF EOF(1) THEN I=25
60  NEXT I
65  FOR I=1 TO 2000: NEXT: CLS
66  PRINT "WAITING FOR SELECTED TIME ";RT$
70  IF LEFT$(TIME$,5)<>RT$ THEN PRINT "TIME
     NOW = ";TIME$:GOTO 65
97  POKE 63072,69:POKE 63073,49:POKE 63074,68
    :REM 63069, 63070, and 63071 for Model 100
98  POKE 63070,77:POKE 63071,55
    :REM 63067 and 63068 for Model 100
    :REM These pokes set STAT to M7E1D
99  SOUND OFF
100 CALL 21208
    :REM 21200 for Model 100 - CONN command
110 CALL 21298,0,AD
    : REM 21293 for Model 100 - DIAL command
111 BEEP :CLS
119 OPEN "MDM:7E1D" FOR INPUT AS 4
120 OPEN "MDM:7E1D" FOR OUTPUT AS 2
130 OPEN "QUOTES.DO" FOR APPEND AS 3
    : REM Save data in file
140 PRINT #3,DAY$;" ";DATE$;" ";TIME$
    :REM Prefix w. date &time
150 FOR I=1 TO NS-1
160 PRINT #2,SS$(I);",";
    :REM Send list of symbols to Compuserve
165 FOR J=1 TO 200:NEXT J : REM a slight pause
170 NEXT I
180 PRINT #2,SS$(NS)
189 B4$=""
190 GOSUB 500
200 CLOSE #3
210 PRINT #2,"/OFF" :REM Sign off from Compuserve
220 CALL 21187
    : REM 21179 for Model 100 - DISConnect
310 CLOSE
390 SOUND ON
400 END
500 Z$ = INPUT$(1,4)
    :REM One character at a time received
510 IF (B4$="e") AND (Z$=":") THEN RETURN
    :REM  End of data (CompuServe sends "Issue:" again)
515 IF Z$="!" THEN PRINT #2, CHR$(13);
    :REM Long list, so send CR for more
520 PRINT #3,Z$;
525 B4$=Z$
530 GOTO 500
```

ON A CLEAR MODEM YOU CAN RING FOREVER!

by Leon H. Raesly, LCSW ©1985

Have you ever used a modem (MOdulator-DEModulater to connect a computer to another by the telephone lines)? Been connected to a BBS (Bulletin Board System)? Would you like to feel the flavor of it? Well, the following is an actual sign-on to the Pi's SYSTEM 2. I used my signing on to capture a series of messages that I had left on the SYSTEM to explain what has been happening as we change over the BBS from two separate telephone lines, each with a single Board message base, to what we are planning will be a three-line telephone roll-over system with 24 different message Boards, arranged by various topics. Thus, we hope to have three Mac Boards (Software, Hardware, etc.) as well as a separate GAME-SIG Board, AppleWorks Boards, and many others. The only thing that will be different is that the printed column you are reading is 54 (or so) characters wide, whereas on your micro, you would be viewing 80 characters wide. So stay connected, and see what it is like! (Ed.Note: some line spaces and carriage returns have been omitted to conserve space in the Journal, and selected material has been "boldfaced" for ease in reading.)

ATDT9868086
CONNECT AT 1200 BAUD
PRESS <RETURN> TO ENTER#
CONNECTED TO WAP SYSTEM 2
300/1200/2400 BAUD NOW!
WASHINGTON APPLE PI - SYSTEM 2 - FOR MEMBERS ONLY!
FOR MEMBERSHIP INFORMATION/PASSWORDS
CALL 301+654+8060
THE NEW 10,000 USERS ARE UP NOW! ADD AN EXTRA 0 IN FRONT OF YOUR PASSWORD! IF YOUR PASSWORD WAS 123.ABCD, IT IS NOW 0123.ABCD. DON'T FORGET!
TODAY IS: TUESDAY, 11/25/85 12:40 PM
YOU ARE CALLER NUMBER 1,989
THE LAST CALLER WAS JOE CHELENA
PLEASE ENTER YOUR PASSWORD# XXXXXXXXX
WELCOME BACK LEE RAESLY
New Messages on Board: 1,2,3,4,5,6,8
Commands: B/C/L/M/O/T/U/!/*/?
Main Menu Commands: A/C/E/F/L/M/O/Q/R/S/T/U/*/?
Main Menu B
BBS
Boards Available
*1>...MAC Hardware Board
*2>...MAC Software Board
*3>...MAC Misc & Gossip Board
*4>...Telecommunications Board
*5>...Games & Gamesig Board
*6>...Appleworks Board
7>...Basic Programming Board
*8>...UBBS Comments-Sugs Board
Global Commands
<O>...Logoff
<Q>...Quit to Main Menu
<R>...Read ALL New Messages
<S>...Search for Messages to you
(<0-8> OR O/Q/R/S/?)BBS <8> 8
UBBS Comments & SUGS. Board
Ctrl-S to Pause, any other key aborts

This is the Board to record your Comments, Loves, Hates for this new UBBS SYSTEM 2. Ideas for improvement (we will get to them as we can, BUT it WILL TAKE TIME!!!) Starting this Saturday, November 9th, this will be the ONLY UBBS C&S Board on either SYSTEM. Board #8 on SYS 1 will be replaced with a Mac Programming Board. Lee Raesly, PI BBO

Messages 1 to 161 are Available.
You Last read Message #136
Commands: A/C/E/F/L/M/O/Q/R/S/T/U/*/?
BBS <8> <1-161 or F/M/N/R/?>
Read New
Msg # 137 RING FOREVER!.....#1
FROM LEE RAESLY, ON 11/21/85 03:46PM
TO ALL, REPLIES: 0

This is repeat of a 100 line explanation I had written to clue everybody in on what has been happening with the BBS the last two weeks. The first was completely written, and I was proofing for my creative spelling, when the power glitched at the Pi office, and the modem went off (NO capacitance at all in those little buggers!) I called, knowing I had 2 minutes to timeout, but the delays in getting to someone for help caused the SYSTEM to say .....Disconnecting Lee Raesly. Guess what is absolutely tops in my personal priority to get next? RIIGGHHTT! UPS!! (Uninterruptable Power Supply)

So on with the story. I will start it in the next message, and do it by several steps. Soo.. on to the next message! Lee.

N>ext, Q>uit, R>eply, or ?>help Next
Msg# 138 Prog. Board
FROM LARRY HALFF, ON 11/21 04:10PM
TO LEE RAESLY, REPLIES: 1

Lee - Please switch the BASIC/Apple programming board with the Mac prgramming Board on SYSTEM 1. It would make me feel much better to have the Mac Programming board over here and I am sure it would be more accessible to people that want to use it!

Kill <N/R/U/Y/?> No
N>ext, Q>uit, R>eply, or ?>help Next
Msg# 139 R/138 Prog. Board
FROM LEE RAESLY, ON 11/21 04:41PM
TO LARRY HALFF, REPLIES:0

Larry, the thing that we are trying to do is even out the calls. This SYSTEM still receives only half the calls of SYS 1 (check the number of users when you sign on or off). Basic programming will draw several times better than MAC programming. Thus the higher-volume-use Board needs to be on the lower volume use SYSTEM. Lee.

P.S. Please do not delete this, as others have asked Why? to the same question, and this will answer their questions also. Lee. (still!)

N>ext, Q>uit, R>eply, or ?>help Next
Msg# 140 RING FOREVER!.....#2
FROM LEE RAESLY, ON 11/21 04:58PM
TO ALL, REPLIES: 0

O.K. A little history. First, the Sunol. When Dave

contd.

Harvey's committee researched it, the Sunol with 16 Megs, and Random Access Tape Back-up (RATB) (this will be important later in this presentation) was exactly what we needed for this SYSTEM. It had the potential for all our needs, PLUS the very needed RATB. The literature, the ads, and the Sales Rep all stated that RATB was available for the Apple.

Now, what has happened the last few weeks? Well, we have been getting random trashing of messages, inability to copy correctly, Message Irretrievable messages, etc. It got so bad that Mike and I conferred with Joe Chelena and Dave Harvey and the dealer, and it was decided to take it in for an examination last Monday a week ago (November 11th). Mike Ungerman and I spent from noon Saturday making necessary copies of the file, both an image copy (a fast method of copying by disk tracks and track sectors, which can be copied back up as an "image" of what was on the disk. The difficulty is that if you have a bad file or directory on the disk, the image copied back up is also bad. While a RATB would give you a normal file-by-file copy onto your media - tape, floppies, etc - and thus you would NOT copy BACK the trashed file, etc.), as well as file copies of the message base to floppies. We finally finished at 8:30 PM!

So, Monday Dave Harvey picked up the loaner that the dealer had offered us. Dave then spent from 1:00 PM until 6:30 PM reconfiguring the loaner, and getting ready to reload the message base. Unfortunately, the loaner did not work either, and it had to be returned the same day. Thus we were down for the balance of the week, and no chance to bring-up a temporary SYSTEM.

The following Saturday (November 16th) Mike and I worked to bring-up a 1-Board SYSTEM on each telephone line as an emergency, temporary measure. This we were successful in doing. Perhaps you saw it. As a matter of fact, we now have a master original of this entire SYSTEM, so that if we ever have this type of complete OUT, we can bring in the new temporary replacemnent in about 10 minutes!! Also the day before, Friday, Dave Harvey set up an appointment with the dealer's rep (Dave Gifford) at the earliest time he could make it, which was Tuesday, at 4:00 pm. More on this later.

I would like to get onto several other problems that we have had. RING FOREVER! .....and Answer, No Carrier. (ANC) (If I weren't so involved in trying to work out these @#$%% things, I would really find it quite humorous, with a distinctive Keystone Cops flavor to it all!) Anyway, RING FOREVER! .....was really two problems, and we had to resolve the first to be able to detect the second. The first was a combination of C & P Telephone exchange and AT & T trunk line problems. We verified these by having people at the office see someone actually on the SYSTEMS from outside, while someone else was getting a RING FOREVER! .... With enough repair calls to C & P and AT & T, we finally got most of that straightened out. At least enough to detect two other problems, both connected to the US Robotics Courier Modem.

The first was that the Courier had a major glitch in one of the ROM's. If you used a TRS 80 Model 100, or a Promethius internal modem on the Apple // (or anyone of several others) it would change spaces to (,and c's to =, and many other strange and wonderous things. US Robotics had a replacement ROM, and afer about three weeks we received three. That was the easy one. The second we didn't get solved until two weeks after I wrote this message. (Ah, the wonders of editing on a Word Processor!). It is RING FOREVER! .. (NON C&P problem!) It is a combination of a poor driver, and a bad CPU on the Courier.

First the driver. We have finally located a copy of an attempt at direct Carrier Detect, and George Kinal has examined it. With the modifications he has made to it, we are hoping that will solve HALF of our RING FOREVER! ..... problem! He hopes to get time either November 30th or December 7th, to come to the Pi office and install it. That, as I said, should take care of HALF the problems! (Actually it did take care of the problem, and you can now sign on SYSTEM 1 or 2 at 300/1200/2400 Baud, as you may have noticed in the sign-on at the begining of this article.)

However, complicating that problem has been the Super Serial Cards (SSC). When we first put the SYSTEMS up, the Pi had purchased four SSCs to use with the Courier modems (you remember them from above, don't you?). Of the four, we were finally able to determine that part of the trash problem (remember the modem glitch above) was actually caused by the SSC's themselves! As it turned out, two of the four NEW cards would transmit extraneous noise (just for something to do, of course!) at random intervals! These were exchanged for new ones, and yesterday George Kinal called me to let me know that one which we had been keeping in reserve would not function properly. George has been using it in testing the new drivers, and found that the SSC would not hold Baud rate when operating! This has to be replaced, but fortunately I had a spare SSC at home (I am of the firm conviction that you should never have one of anything - whether it is computer equipment, or girlfriends - either have 0 or 2!). Anyway, I have loaned it to him to finish his tests. Not sure that we can make December 7th, at this rate! (But we did! See note above.)

Now, on to the second! But first a little more history, which really makes the modem problems quite ironic! As many know, when the Courier first came out in mid June, they had a great PR idea. Offer it as a 300/1200/2400 Baud modem at 1/2 price to any BBS operator, with the only stipulation that the BBS post a clear message that it was a US Robotics Courier 300/1200/2400 Baud modem! Boy, did they get response, a great PR coup! But.....

Ah, yes, the BUT! You've already heard the first BUT, BUT .... this one is even worse! They had a major BUG in the CPU, and when a call came in, the Ring Detect circuitry walked all over the control code area. Not so bad in itself, BUT.....If your program was hanging up from a previous call, and resetting the control codes at the same time as the phone rang?? You guessed it! The program and modem go catatonic, with each waiting for the other to do something first, and RING FOREVER! ..... And, of course, what type of use would encounter this type of situation? Rrrigghhtt! A BBS system! And who did they sell their first umpteen thousand to? Rrriigghhtt! BBS system operators!

Well, US Robotics did get themselves a lot of publicity, but probably not the kind they wanted. This info has spread around the country like wildfire. And who spread it? Rrriigghhtt! The various BBS SYSOPs! They learned of the bug in August, and have been working on it since. I have been following it with them ever since, with almost weekly telephone calls (one of these days I will have to let MY office know where I am .)

O.K., now we have some more info. I talked with them yesterday, November 20, and always before their answer has been Real Soon Now! (from August!). They have finished Beta testing now, and are into the production of the new chips! They will ship three to us as soon as we send them a receipt as proof of purchase.

Seems like someone never got around to sending in the warranty! (Does anyone really do that ?!) I won't say who did

contd.

that (not wanting to point a finger!) but his initials were Leon H. Raesly, LCSW. So now, we should be able to get the new CPU in about 2-3 weeks, and solve both parts of our RING FOREVER!....problem at nearly the same time.

(A special edited note inserted here. The CPU's came in, Version 243.1 They are now installed (December 11) and the RING! FOREVER! ..... seems to be gone permanently! At least, what caused this part of it. Lee.)

Now back to the Sunol. At the meeting last Tuesday (November 18th) neither Dave Harvey nor I were able to get the Sunol to do any of the four things it was doing wrong! (I am sure you already figured that would happen!) However, we did learn that the advertising was misleading, and that the Sunol will NOT make RATB (you remember what that stands for, don't you? I said it earlier in this report! Ah well.) on the Apple. So the BBS committee (you didn't think I was going to handle this HOT POTATO alone, did you?) has several questions to deal with when they meet next Tuesday (November 26th).

1. Do we just roll over, and play dead? Right, too bad we can't use it, but I guess we're stuck with wasting $4554 on this special system with tape back-up.

2. Get a new 16 Meg Sunol without tape back-up, and a refund on the difference (somewhere between $800 and $1500), then look for alternatives for RATB. Such alternatives might include a 5 Meg Profile, a 10 Meg Sider (if we can write to it in PRODOS from the Sunol hooked system), or maybe the new 3.5 800K Apple drives?

3. Turn the whole thing back, and request a refund on all, while we go look for an integrated system to do the job? This has the disadvantage of leaving us operating with an emergency system of one Board on each telephone line from three (3) to fifteen (15) weeks while we research it, and procure it. And all of this MUST be within the remaining budget!

Well, the UBBS Program Editor is telling me that I only have two lines left, and I am not sure if I believe it or not. Just in case, look for RING FOREVER! ..... #3 and see if it is there. Hmmm. I am still going! How much longer? On with the .... Still not sure if I believe it. Just in case, look for RING FOREVER! ..... #3

N>ext, Q>uit, R>eply, or ?>help Next
Msg# 141 RING FOREVER!.....#3
FROM LEE RAESLY, ON 11/21 07:15 PM
TO ALL, REPLIES: 1

Well, I guess you figured that one out! Even SYSOPs are limited!!! (Contrary to popular belief!!) Only 95 lines per message (compared to your 11). Maybe we should raise it for general members? Actually, since the program saves in blocks, 19 lines by 80 characters will take no more space than 11 lines by 80 characters! Perhaps we'll do it! Put it on the list! Modification number 293,184.2! We'll get to it someday!

It is late, now (well, I haven't had dinner yet, so that at least makes me late for dinner!) so I will finish this Herculean saga later. Write down the number of this message, 'cause since I can write 95 lines per message, I am not going to waste them! I will append this message later tonight or tommorrow. Since this is "Prime Time", I'll sign off now to give others an opportunity to sign on. Lee.

Hello, again. Continuing with the Sunol Saga! It is now early Friday morning, and there are still some items not dealt with (creative spelling or syntax doesn't count!). The Chief Engineer called me yesterday from Sunol. He acknowledged that they cannot do RATB. In addition, when we bought the system, there was a clear implication (if not a promise) that Sunol would be interested in our getting a multi-user version, and would help us with it. We found out why. They have noone on their programing staff that knows the Apple, nor on their engineering staff! The original software of theirs was written by a "consultant" in east Texas, and the only change since then was a modification to let it work with PRODOS Version 1.0 !

Further, he acknowledged that there was often a subtle interaction between the transport for the Apple, and the Multiplexer, and he would send several of each so that we could test out to find a working combination! Three weeks later and still nothing has come. The BBS Committee decided that because of all the foregoing, the Sunol would be returned, and we want a full refund. Now it's "back to the drawing board" to find out where to go next!

There are three areas yet to deal with. The first is modifying the program to fit the Pi's special needs. When first received, a non-member could get on, and peruse the Library files at the main menu. They could also print a list of users! Besides a no-no in Pi policy, this opened the potential for non-users securing someone's PSWD, since it would be easy to count the relative position, and from that point just try some typical combinations. Most of the PSWD's that many use are really very simple to break, if you know the first three digits! So Rich Mlodoch did the first of his fine modificatons.

Among the many modifications Rich has made, are two more of special note. The first is getting rid of the global search when you do a Read All. This eliminated part of the problem that many have had with AE Macro's. The second we will put into operation tomorrow, Saturday, November something! It is the ability to have more that 999 users! When we last used the old WAPABBS, we had 1380 users, and are approaching the 1000 mark now. So this change which we Alpha tested for three weeks on the PASSWORD SYSTEM (SYS 4), will be implemented on all SYSTEMs. Along with these modifications, he wrote several excellent UBBS Utilities, to make life easier for all The CREW working on this BBS.

The second area was the crashers. We had a spate of people crashing, or attempting to crash the BBS. Programs like this can never be made completely crash proof, but Rich has done some modifications to make life a lot easier for us.

The third area is electrical power. Five times in October the power flickered - or glitched - sufficiently long (about one/half a second) to take the Sunol down! When this happens, someone has to go to the Pi office to bring each SYSTEM back on line! This month, it has only happened once, SO FAR! (Twice, if you count the short glitch that BLEW ME AWAY yesterday. I count it, 'cause I was the one blown off - and lost my deathless prose! - but probably others would not count it as a full power glitch!). Incidentally, as I sit here at home talking to the Pi's SYSTEM 2 on my IBM PC (don't let anyone else know!) I am watching someone at the PSWD level on the Classified SYSTEM behind me on my Apple //e entering all kinds of CNTRL CODES trying to crash that SYSTEM! Excuse me a minute while I go blow them away! O.K. I'm back, and they are GONE!

The answer to the power question is, of course, an Uninterruptable Power Supply (UPS). Rich Wasserstrom is checking for us, trying to get us one through Group Purchase, where we would be eligible for up to 40% discount! We hope to be able to get one in 10 days - two weeks. That brings us again to Saturday, December 7th! It looks like a lot of things that we have been working on may all some together then! Hallelejuh!

The next area is securing and training people to be Board

contd.

SYSOPs. This may not seem like much, but it not only is, it is also very important! Joe Chelena has functioned in this capacity, plus the role of moral support! When you have 29 Boards scattered amongst 6 operating SYSTEMS, it takes a lot of people power to keep it all running! Even just the 7 Boards on the 3 SYSTEMS at the office is quite a job! He has also been SYSOP for SYSTEM 1, as well as Board SYSOP for several of the Boards on that SYSTEM. The program itself, and the basic understanding of it, was handled by Barry Fox, and even now that he has moved to Harrisburg, he still remains our UBBS Guru, and is called upon from time to time to give us insight into particular aspects of its operation.

We have also been fortunate to have Dave Harvey working with The CREW! He has had the unique opportunity to completely re-format the Sunol FOUR different times!! Each one a 4-5 hour job! Without Dave, we would probably still be attempting to get it up the first time! (Which might not have been that bad, in retrospect!)

Another area is both maintaining the program, handling the PSWD requests, validating them, and moving the new PSWDs to the other SYSTEMS. Here the yeoman's work has been done EACH WEEK by Mike Ungerman! Mike has worked hard at keeping these up, PLUS has been developing for us a set of modifications that would allow those maintaining Library files (such as Group Purchase, Meetings, etc.) to work on them by remote access so that all of the people maintaining these files for you can do it from home, and not have to come in, or mail disks in, to the Pi office.

All files must be modified to a special format to go into the Library files of UBBS. There is a Utility provided, called, appropriately enough, CONVERT.FILE. However, this must be run from the keybooard, but for our special needs we really need to be able to run this remotely. We now can, thanks to Mike's special program called, again appropriately enough, CONVERT.MIKE!

Well, these are a few of the things we have had to deal with, and some of the people involved. I have left out the people who have devoted time (and large amounts at that!) to being Board SYSOPS, handled updates to meetings, BBS, and many others. You can find their names listed on the Pi BBS list in the Journal. Just look at their names, and multiply the number by 20-30 hours they have so far invested in getting this running, and keep it running for you.

Perhaps this may give you some idea of why that modification of yours (or someone else's) has not yet been made. This entire group of some 30-35 people has been working hard (and, yes, also having fun while at it!) to improve and maintain this new complex and sophisticated SYSTEM that Dave Harvey and his committee (under the auspices of Tom Warrick) started going. I have run out of space. Concluded in RING FOREVER!.....#4

N>ext, Q>uit, R>eply or ?>help Next
Msg# 143 Ring Forever .....#4
FROM LEE RAESLY, ON 11/22 08:26AM
TO ALL, REPLIES: 0

So I would like to conclude with a special thanks to each of you who have been so patient and supportive throughout this process. It will probably be at least another six months until the full SYSTEMs are up to where we want them, but we are making progress! We will need more Board SYSOPs in the future, when we bring up 24 Boards on each SYSTEM, and we can use people who want to help with programming. Your skills don't have to be stellar, just a willingness to do some of the things we need. Such as, we greatly needed a REMed copy of the program - someone to just go though, and trace what is going on. There are about140 variables used in this program, all stored in a file called STATUS. We need a word processor listing of them. And many other big and little projects to make this program special for our needs, and finer to use both for the members calling and for the group maintaining it. Thanks for listening. Lee

N>ext, Q>uit, R>eply or ?>help Quit
Commands: A/C/E/F/L/M/O/Q/R/S/T/U/*/?
BBS <8> <21-209 or F/M/N/R/?>
Read 196
Msg# 196 CRASHER
FROM LEE RAESLY, ON 12/10 06:55PM
TO ALL, REPLIES: 1

I am sorry that we have not had the Classified SYSTEM up since Sunday. We had a crasher (a Pi member! We know who he is, of course! Incidentally, it is not a kid, it is a man in his late 30's, early 40's.) The process went like this. (First, remember what you saw in the previous message - I carry the PSWD from SYS 2 to the Classifed each Saturday). Sunday afternoon at1:30 (Dec 8) he signed on SYS 2 Board. Unknown to him, his PSWD file had a worm in it (The Sunol again!) Once he was on, his name and time were recorded in the UserLog, but he could do nothing! Every key he hit, threw 120 characters of text garbage everywhere. So he had to disconnect his modem to get out. He then called right back, and SYS 2 had crashed! Then at 1:40 he called the Class. SYSTEM, and the same thing ocurred, and he had to disconnect his modem to get off. When he called back immediately, the SYSTEM was crashed. So far so good, it was inadvertent on his part.

When I got home at 7:00 PM, I saw the Class. SYS was down, and brought it back up. Went into another room, and he called back, and crashed it again. Same guy. Three times maybe a mistake, but by now he knew he was crashing the SYSTEM. Over the next hour, while I struggled with dinner, and fixing the Board, he crashed it five more times. George Kinal came by, and we spent 4 1/2 hours trying to reconstruct a good SYSTEM, and had to give up. In the meantine, the crasher set-up an autodialer, and each time we tried to test the SYSTEM, there he was again, and blew it away! He was so successful, that today (Tuesday Dec 10) I am at the Pi office trying to get a complete new copy to take back to my house.

Needless to say, he no longer has a PASSWORD on any SYSTEM! His appeal is first to the BBS Committee (which next meets the last Tuesday in January) and from thence to the Pi's Board of Directors. Well, he even left a message on SYS 1 that says: "Yes, it was me driving whoever runs SYSTEM 3 crazy Sunday night." heh, heh. Well, as I said, he no longer has a passsword anywhere, and cannot reapply for one until cleared by at least the BBS Com. and maybe by the BOD. As a friend of mine said, he forgot the BBS'ers 11th Commandment: "It is not good to PO the SYSOP!"P.S. This morning he left a message to the SYSOP, "I cannot get on any SYSTEM. Have I been blackballed?" Payback is a ....!

N>ext, Q>uit, R>eply or ?>help Quit
Commands: A/C/E/F/L/M/O/Q/R/S/T/U/*/?
BBS <8> Quitting...
Commands: B/C/L/M/O/T/U/!/*/?
Main Menu Off...
Hang up, are you sure? <Y/N> Yes
Thank You for Calling WAP SYSTEM 2
LEE RAESLY, You Were Caller # 1,988
Universal Bulletin Board System
by Les Kay and David Sugar
Copyright 1983/1984 by Universal Computer
It's: 12/11/85 03:04PM
Disconnecting...

A LOOK BACKWARD ... AND A LOOK FORWARD

by David Ottalini, /// SIG Co-Chairman

Happy New Year!! As the /// SIG enters a new year, I thought this would be an excellent time to take a look back at 1985 and a look forward to what we can expect for 1986.

I think we can all be proud of the resurgence our SIG showed in 1985. We gained some new members and there was a determined effort to improve the services provided our members. Since Apple's decision to discontinue production of the ///, businesses around the nation have been replacing it with newer (and many times non-Apple) models...and the /// has gone more and more into the hands of individual users at home or into the small business community. That has brought with it what our Co-Chair Bill Rosenmund calls a "transition" in the user base. It is a transition to new users who may never have had a computer before..or who are interested in getting as much as possible out of their investment. That's where our SIG comes in...to provide the support service many of us need to ensure that our ///s remain productive tools for a long time to come!

For those of us who already own a ///, the desire now is to get the most out of the machine, while working at ways to ensure that it will continue to remain productive in the years ahead. The Apple /// remains an excellent eight-bit computer and should continue to provide dependable service through the year 2000 if we make a concerted effort to work together for the benefit of every user.

I believe our SIG made a good start along that path last year. In 1985, we began offering tutorials for (what I believe to be) the first time in our (///) history. The "new blood" of the SIG included Al Lambert, who is working to put together our first-ever public domain library, including a new member's disk specifically for Apple /// users. Bart Cable, Bob Huse and others have also contributed to the project. Our secretary, Charlene Ryan, sent out a survey to all listed /// members of WAP to find out how the SIG could best serve them. And your Co-Chairman put in many hours developing a bibliography of Apple /// articles that now numbers more than 700. An attempt was also made to try to update as completely as possible a list of all Apple /// groups still active around the country.

Our group may be small, but I believe our desire to learn and become more active will carry us through to a successful 1986. Our contact with other Apple /// groups has grown and we are now trading complimentary copies of our publications with some of them (they are available in the WAP library). We have made an effort to take a more active roll in WAP and one direct result of that was the addition of an Apple /// board (#6) to the WAP BBS System One, with Carl Bowman doing the honors as SYSOP. Now all we need are additional telephone lines so that more folks can access it.

We also found an excellent meeting place in 1985 (thank you Al Lambert) which is centrally located for all who live in the Washington DC area.

ON TO 1986...

In thinking about a few goals and objectives for 1986, I have come up with a number of ideas, all of which need your input. I think many of them can be accomplished if there is a concerted effort by all SIG members to help. Any other suggestions, of course, are also welcomed!

- At the top of the list is our desire to obtain an Apple /// for the WAP office. Bill Rosenmund is working on that with Charlene's help. Having a /// to use for tutorials and member's use in the office would be a positive step for us and would help to ensure that our presence remains strong in the organization.
- Along with that is the desire to obtain for the office a set of software to use on the ///. I have proposed doing that through a purchase at a Rasmus "fire sales." We can obtain a lot of basic /// software for about 20 cents on the dollar by waiting until the last day. We may have to ask for some additional funds from the WAP board to accomplish that.
- We also need to continue efforts to add Aple /// textbooks to the WAP library. There are a few already, but a concerted effort to add to that list should be made in 1986. I understand there is a special fund to help purchase additional library materials and hopefully we can tap it for this purpose.
- I would like to see us put together an "Apple /// Handbook." It would contain articles on many subjects relating to the ///. This could definitely involve other Apple /// groups around the nation. Each, perhaps, could be asked to take a specific subject, or simply contribute articles on many subjects. The book could be printed on disk for sale and/or (with WAP Board approval) on the laser printer for a truly professional look. I'm not sure how we would deal with copy costs, etc. but that really isn't the worry right now. The idea is to put together a sourcebook we can all use over and over again.
- The latest list of Apple /// WAPers comes in at a little over 70. Most of those are in the DC area. I would like to figure out some way to get more of them (read that you! who are reading this) involved. At the present time, there is a group of about seven or eight people who could really be called "actively involved" in the SIG. We've had good attendance at our tutorials and hope to continue them. Our November meeting was our best yet. But I need input on how we can better serve you "quiet folks" out there. Perhaps for you business users, a meeting at an actual business to see a /// in action might do it...
- 1986 will see our new public domain library become active. Our goal here should be to continue adding to its offerings. I would especially like to see us add to our unique items (like the new member's disk, the bibliography, etc.).
- We should continue to support independent Apple /// developers like Daryl Anderson of D.A. Datasystems and others. Support (in the form of purchases, letters, etc.) can only have positive results for all of us. With the expected release by Apple of much /// material into the public domain, the opportunities for independent developers will grow tremendously. I would like to see new upgrades of SOS and Business Basic. Also on the software front, an improved version of /// EZ Pieces with some porting over of AppleWorks programs for graphing, spelling, etc would be great (but can we get Haba to listen?). I understand a version of the C language for the /// could be in the works and that would be positive. We should also continue to write Apple and urge that they continue providing support for the ///.

contd.

• I would like to see our contacts with other Apple /// organizations expand and grow. The Third Apple Users group (TAU) of Wheaton, IL (just outside Chicago) has been talking about holding an Apple /// convention of sorts in 1986. I think that is a great idea and should be pursued. I can't think of a better way to strengthen the /// community than by holding a convention where users and dealers can all get together to talk about our common interest...the Apple ///.

• How about working with some of the other Apple /// organizations around the country to develop a yearly "award" for the person who has made a significant contribution to the Apple /// community. There are a number of names that already come to mind (Steve Jobs will never be one of them!) like Dr. John Jeppson, Taylor Pohlman, Al Tommervik and George Oetzel. It could be something held in conjunction with a convention or simply announced through Frank Moore's /// Magazine. Not only would it be a way to honor those who deserve it, but such an award (the SARA?) would be a way to focus attention on the Apple /// as the excellent computer it is.

• How about more articles for the Journal? All you budding writers out there have a unique opportunity to add to our knowledge of the /// by writing about your particular problems and victories. Reviews of programs, hardware, etc. would also be enjoyed by many others. For my part, I will continue my efforts to provide at least one article per month. ///ers are a hungry lot and love to read articles about their machine. Help me feed their interest! I'll also continue updating the /// Bibliography and its companion data bases. Any additions or comments there would certainly be welcomed.

So! What, then, can we expect from our SIG in 1986? As much as we want to and as much as we are all willing to put into it. The /// is not called "The Machine That Would Not Die" for nothing! As a SIG, lets all make an effort to keep it a living tool we can be proud of.

End Notes

The Computer Store is still offering AppleCare contracts for the ///. The Service Rep I talked to, Phil Fox, says Apple is still supplying them with parts and provides whatever support is necessary. Expect the cost to run you about $150 for your ///, $50 for a disk drive and $24 for a Monitor ///.

Charlene's comments about a certain printer store in town hit home with me as well...since that's where I bought my daisywheel. They were of little help in getting things up and running properly (it took about a month!). And their cables were overpriced. They do have a one year warranty and say if anything goes wrong in that time it will be repaired or replaced. I think, though, that like 47th St. Photo in New York, this place can best serve you only if you know exactly what you want to begin with. There will also have to be the realization that you'll probably never speak to them again, unless there is a warranty problem that first year.

By the time you read this, I hope to have my new ///+//e cards up and running. TAU was able to pull off its group purchase for $345 (Sun Data's introductory price was $399). If there is enough interest, they may try it again. We'll let you know. If any other WAPers have this system, how about a review?

SILICON SALAD: A Review

by Bob Anderson

Silicon Salad, for the][+, DOS 3.3, is a multi-faceted collection of utilities, tips, two-liners, etc. from the Beagle Bros. I had been trying to test all its capabilities and limitations before I wrote this review. However, the disk would turn to dust before I could do it all! There are just too many things to try. I will therefore give you a rundown on the things that I have tried so far, and describe some of the other capabilities contained therein.

There are 121 file names on the disk. Most contain useful stuff while a few are used for section labels during cataloging. The main menu lists 30 miscellaneous run-able programs. The utilities menu lists the 32 more useful programs. The two-liner menu lists 26 of these graphics gems. The bottom of the catalog is called Fun Stuff and contains 20 plus miscellaneous programs.

Where do I start? Let's start with the ones I have used. "Disk Scanner" searches your disk for damaged sectors and marks them as used. "DOS Killer" frees up 32 sectors for data by deleting the disk operation system from disks which are used strictly for data. "Two Track Cat" sets up two tracks as the catalog, which allows 217 file names on the disk. (They claim 210, but they forgot that the second track doesn't need a sector for the VTOC.) "Undelete" does the best it can to recover deleted files. The results depend upon whether or not you wrote to the disk in between the deletion and the attempted undeletion. "Key Clicker" provides aural feedback for each keypress. "Text Screen Formatter" allows you to write, edit and position text on the screen, and then converts it to Applesoft statements. "Error Trapper" will list the offending program line with an arrow pointing to the bad item. "Hi-Res Imprint" transfers text from the text screen to the hi-res screen using whichever DOS Tool Kit font you choose. The Two-liners are wild and wacky graphics programs. Other facilities available, but not yet tried, include "Program Splitter" which breaks a vry long program into two parts so it can straddle the hi-res screens, and "Auto Hi-Res" which make a hi-res picture BRUN-able. There are many more.

The disk is unlocked and unprotected, so you can back it up. At a cost between $24.95 (suggested retail) and $13.99 (mail order), the average cost per program is 19 cents. The Beagle Bros. have again provided a very cost effective disk, chock full of anything and everything!

MONEYWORKS: A Review
by Henry R. Hertzfeld and Nancy M. Pindus

MoneyWorks, published by Apropros Software, Inc. is advertised as a personal financial planning template that can be read into an Appleworks spreadsheet. The program is compatible with the //e and //c.

There are eight separate templates in the package: auto buy vs. lease; home budget planner; college planner; life insurance planner; loan planner; real estate planner; home buy vs. rent, and stock planner. After reading the manual, we thought that these ready-made templates with built-in formulae would be extremely useful to play financial "what-if" games.

Unfortunately, the package does not deliver what it promises. In most cases, the templates are not really "planners," but only recorders of information. In our opinion a true planner would have to provide instructions and technical information about the subject. None is provided in any detail, and the manual primarily focuses on how to enter information (which is fairly obvious anyway) instead of technical explanations and background. In fact, some of the templates are much more cumbersome and time consuming to use than a "Business/Financial" hand calculator.

The major drawback of the package is the simplicity of the templates. Buying real estate is a complex decision. Planning for life insurance, similarly, is not easy. By reducing some of the factors to one-line entries (estimating the cost of living index for the next 30 years, for instance) without any explanation of how to do it, the results of the calculations could be meaningless for the inexperienced user. And, for the experienced financial planner, there is no mechanism to vary such things as the expected interest rate and inflation rate over the years. Only one choice of entry is permitted and it cannot be changed over the course of the financial "plan." The package is aimed at the non-sophisticated user, but by simplifying entries and decisions, it runs the great risk of misinforming.

To top off the problems, we found a number of serious errors. One, for example, is in the "home buy vs. rent" template. We entered the information for a mortgage and it calculated the payment rate. Our suspicions were aroused when the monthly payment was different from the bank-calculated rate we now pay on our mortgage. (For illustrative purposes we used our actual home mortgage). Then we changed only the term of the mortgage (playing a "what-if" game with it) and recalculated the rate. It did not change as it should have. Then we went to another template, the "loan planner" and entered the same information as we originally entered in the "home buy" template. This time the calculations were correct. They also agreed with the separate calculation we did in less time on the pre-programmed financial hand calculator.

We attempted to contact Apropos several times to get their reaction to the problems we were having. The calls were never returned. We tested a pre-production demo disk. Perhaps the production disk will have corrected the errors.

Below, for those who may still be interested in spending about $50 for this less than perfect package, we have summarized the contents of the various templates.

Auto Buy vs. Lease analyzes the comparative costs of purchasing a car or leasing it. You enter all pertinent information including your tax rate and business use of the car, and it calculates your net benefit or cost of purchasing over leasing. But there can be hidden problems in this program. First, tax laws will change this year. Second, small items, such as auto registration costs are pro-rated by months the car is owned during the first year. But many states, including Maryland, charge the full registration rate regardless of when in the year the car is purchased and do not pro-rate the fee. One cannot blindly use this template and expect precision. It can be helpful in a very general way to estimate gross differences.

The College Planner simply asks you to provide the current year, the age of the child, the number of years of college expected, and an estimate of the yearly cost of college, the inflation rate of tuition, the initial and yearly investment and the expected rate of return on the investment. It then calculates and prints, by year, the income and the tuition payments of the investment. It does not allow for varying rates of investment in different years. It does not tell you how the investment income is compounded (daily, weekly, monthly, etc.) which would be important since banks have different policies toward this and the total income will vary accordingly. As simple as it is, though, it does show in a very sobering fashion just how much money is needed presently to finance a college education. Perhaps this realization would be important to some users of this template.

The Home Budget Planner is also too simple. It has no correlation with any checkbook or check entry program. The information for the entire year is too wide to print on a normal page, even using 17 cpi. It is virtually useless for tax purposes since the categories are fixed in the program and are broad (e.g. "medical", instead of allowing for insurance premiums, doctors, hospital, etc.). Entering the information takes time, and this template's only use is for broad planning purposes. If we wanted to do a home budget, we would either make our own spreadsheet tailored to our particular needs, or buy one of the fairly inexpensive programs available that are especially structured to analyze home finances. We found it impractical to go into this spreadsheet template and try to add categories. The manual provides no instructions concerning any self-modification of the program. In fact, doing that would void the warranty.

The Life Insurance Planner leads you through some of the major income and expense items that will be incurred upon the death of a spouse. Again, as in the other planners, the question are deceptively simple, and can lead an unsophisticated user to false conclusions. This planner takes the raw information and calculates actuarial lifetime expectancies, future values of investments, and an estimate of the amount of capital (life insurance) that would now be needed to finance an expected life style in the future. If current insurance provisions do not provide enough capital, then the program calculates the additional insurance needed.

contd.

The planner is useful in getting people to think about future needs. But it does not try to evaluate different types of life insurance programs or even to suggest whether life insurance or other investments would be optimal for the future. Insurance is complicated and what is best for one individual is not necessarily best for another, even if their finances on the surface are similar.

As an aside, this template uses 47K of desktop memory. This leaves very little room on the //c's desktop for any other current work or for this information to be merged with another document.

The Loan Planner is basically a program to calculate amortization tables. It is useful to figure home mortgages and other similar loan situations, but it is not flexible enough to calculate payments on other types of loan arrangements (such as the rule of 78's often used for consumer loans, or for balloon type loans, or for adjustable interest loans (ARM's)). A good financial hand calculator may be more useful for loan calculations than this template.

The Real Estate Planner is geared to the analysis of investments in residential real estate. You estimate the expenses of the investment (two mortgages plus operating and maintenance costs) and the expected rental income and the program calculates tax and other financial implications of the investment. But it again suffers from simplicity. The program allows for only five years of ownership of the property and assumes automatically (without any possible override) that the property is sold or refinanced in five years. This is unrealistic, since many people do not sell in five years.

The program is not meant for commercial real estate or for complicated transactions (such as swaps, rental contracts tied to business sales, proposed changes in municipal regulations - such as rent control measures, etc.). Neither the program nor the manual emphasize that only current tax laws are reflected in the template and that these may change dramatically.

One minor quirk that was annoying was that entries had to be made for monthly expenses (mortgage term, income, property taxes, insurance, etc.). Often records are annual and the user must divide by 12. It would seem simple enough for the template program to be constructed so that this would be an option.

Finally, the **Stock Planner** is nothing more than a recorder of information. It calls for the user to enter the purchase price per share of the stock and the number of shares, and it then calculates the basis price. So far so good, but there is no place to record the broker's fees and commissions paid. Similarly for sales, there is no provision for fees, and the assumption (not explained in the manual) must be that the price includes the fees. If the user does not know that these fees are part of the purchase price, then the template's calculation of the capital gains or losses is incorrect.

Another problem is that dividends are supposed to be entered only in dollar terms. Often companies pay dividends by issuing additional shares of stock. These would have to be entered as new purchases instead of dividends in this template. There is no method in this template to sum all shares of the same stock owned. Further, some utilities and other companies have a percentage of dividends treated as a return on capital, which changes the basis of the shares owned. There is no provision for recording this or, for that matter, any other complication in stock ownership, purchase, or dividend payments. Finally, there is no place to enter the date of purchase of the stock.

In summary we would not recommend MoneyWorks. For the professional it is too simple. For the average investor it doesn't provide any flexibility and encourages simplifying assumptions in financial analyses that could easily lead to erroneous conclusions. For the unsophisticated user it would be a disaster. To cap it all off, in the form we evaluated, it contained numerous important errors and oversights. And the company has not appeared responsive to inquiries.

There is no flexibility or self-programming option provided for in the templates. Each template stands alone - none of the information is transferrable between templates. The manual provides little information other than how to operate the program. And there is a warning that if the user changes the templates in any way the warranty is voided.

For the $50 suggested retail price of MoneyWorks, you would be much better off buying a hand financial calculator with business functions built-in and a good financial planning book. For a little more money, one of the financial software packages that integrates personal budgeting with financial bookkeeping would be far more useful than these templates. And for the sophisticated user, a little time and creativity on the AppleWorks or another spreadsheet would result in better and more personalized analyses than MoneyWorks can provide.

VIEWS AND REVIEWS
by Raymond Hobbs

This month we will roam around the Apple computers, looking at things native Apple DOS and things Apple PASCAL. My thanks this month to Bill Milton for his help on the P-TRAL review. By the way, as a Christmas bonus, there are no losers in this month's reviews - only value! And now, on to the good stuff....

P-TRAL APPLESOFT BASIC TO APPLE PASCAL TRANSLATOR (Woodchuck Industries, $125): The name of this product says it all - it translates your BASIC program into PASCAL running on the Apple PASCAL P-system. Such programs will, by the way, port over to the Macintosh or Lisa without inordinate trouble. Now, this type of utility is not easy to write, and especially not easy to make bomb-proof, but the clever woodchucks have done a surprisingly clean job of it. Keep in mind that BASIC is so unstructured that it is possible to write truly abominable programs in it and still have them work. On the other hand, PASCAL is so structured, it is almost squeaky clean. That's a lot of incompatibility to work around. To be sure, as the manual clearly states, if you write a lousy BASIC program going in, P-TRAL will present you with a lousy PASCAL program coming out, and some things that are odd but legal in BASIC will require a little fine tuning in the generated PASCAL version prior to a successful compilation. Not to worry, however; the manual alerts you to these quirks and guides you through the easy-to-do fixes. The manual, by the way, should be used as a model of the right way to write documentation, in spite of a number of typos. The tutorial guides you quickly and effortlessly through the demo translation, so that you can get the hang of the package and get up and running quickly. The reference section is complete and well-contained. Technical background information (and a how-it-does-what-it-does-and-why section) is put off to itself as being interesting and useful, but not essential. The Table of Contents is complete and clear, and there is a useful and complete Index. This is probably the best manual I've had my hands on in four years. The system runs on a 64K or a 128K Apple][, +, //e or //c - and another nice touch is that the friendly woodchucks have included a disk for both types of system. If you are already up to 128K, make a backup right over the 64K disk (copy with the Apple PASCAL P-system), and if you are running 64K, you have your //e upgrade ready when you are. Thanks for thinking about the consumer, woodchucks!

SUMMARY: Clean running, well-packaged and a first-class manual make this a four-star product. Regular updates, upgrades and phone-in support are promised by the head woodchuck. Who should buy it? If you moved on to PASCAL from BASIC and there are a few programs you haven't gotten around to converting yet, P-TRAL is a good bet. But on the other hand, if you've been thinking about getting into PASCAL, P-TRAL offers a unique way to teach you how the same things are done in BASIC and PASCAL - this makes the transition less painful. So make a New Year's resolution to get going in PASCAL, and you are sure to get plenty of good use of the woodchucks' offering.

VIDEO TOOLBOX (Roger Wagner Publishing, $39.95). Regular readers of this column will recall our reviews of RW Publishing's ROUTINE MACHINE & CHART (now titled CHART 'N GRAPH TOOLBOX) and WIZARD'S TOOLBOX from past columns. The VIDEO TOOLBOX works in the same way to bring quick and easy machine language utilities for text screen manipulation into your BASIC programs. Briefly, here's how it works (see last month's column for a more detailed explanation - all RW TOOLBOX packages work in the same fashion):

1. After clearing RAM, EXEC the AMPERSAND SET-UP program to set the TOOLBOX hooks to your program.

2. BRUN the WORKBENCH program to get to the toolbox routines. From the workbench, you can add, delete, search for, or restore toolbox routines. Done this way, you only include those routines which your program needs - there is no excess baggage to carry along. Give each routine you want to include a unique name (preferably one which has some meaning to you). When you are finished bundling together routines, exit the workbench. All the necessary linkage has now been done for you, and your routines are there, waiting for you.

3. In order to call a TOOLBOX routine from your program, simply enter an ampersand, followed by the routine name enclosed in quotes. If any parameters are required by the routine, enter those parameters in quotes also. For example,

```
100 & "SCROLL" , "R"
```

will scroll the text screen to the right.

The VIDEO TOOLBOX contains 41 routines to control text input/output, speed control, windowing, mouse control and utilities. These routines are all written in assembly language, and go like lightning. Here's a sampling of the useful routines you get with the VIDEO TOOLBOX:

- MENU GENERATOR - store your menu choices in an array, specify the number of menu items to be displayed, menu title, prompt string and variable to receive the user's choice. The TOOLBOX builds the menu screen for you and returns the user's selection.
- INPUT USING - works like a "PRINT USING", but for formatted input. Includes error checking.
- PRINT JUSTIFY - Allows centered, left justified, right justified or fill justified printing of string text.
- SHOW CONTROL CHARACTERS - shows all control characters sent to the screen (except <cr>) as inverse letters.
- GOTOXY - Just like the PASCAL procedure, this positions the cursor at the X and Y coordinates specified, on either the 40 or the 80-column screen.
- PRINT PAUSE - Allows pausing the printout from a program by pressing the space bar. Another keypress resumes printing.
- WINDOW - sets a text window on the screen.
- WINDOW 40/80 SAVE/RESTORE - Allows the contents of a rectangular window on the screen to be stored into an array, then later to be restored to the screen.
- SCROLL 4X - Allows scrolling up, down, left or right.

contd. on pg 48

FORTH SCREENS TO WORD-PROCESSOR TEXT

by Chester H. Page

When writing a paper or a book about FORTH, screens of FORTH definitions must be incorporated. Copying them into the word-processor text is not only laborious, it usually introduces errors. It would be nice to have a FORTH routine that would convert screen files to standard text files which can be loaded into the text being typed.

The format (header, line numbering, etc.) of FORTH screens is not stored as part of the screen data; this constant matter is provided by FORTH when a screen is read. We therefore need a program that will read FORTH screen files, provide the format information, and store the result in memory as a text file that "describes" the screen as normally displayed. This text file is then to be saved to a disk for later use.

The screen reading program loads a screen, but instead of printing it along with line numbers, etc., it "sends" the successive characters to memory, using TEXTPOS as a pointer. At the end of the screen, the value of TEXTPOS is stored in an end-of-text pointer, EOT. The word SCREEN-LIST provides this procedure; " n1 n2 SCREENS " enters screens n1 through n2 by a repetitive use of SCREEN-LIST.

Saving from memory to disk requires "fooling" DOS to avoid the "Not direct command" error response that a file opening command generates unless an Applesoft program is running. DOS is fooled by entering a bypass around the routine that checks the legitimacy of DOS commands.

To use, install the routines with 1 LOAD. Then insert the disk containing the desired screens and enter n1 n2 SCREENS. Now replace the disk with the desired text file disk and enter TEXTSAVE. "SAVE: " will appear on the screen; reply with your choice of filename. That's all there is to it.

```
SCR # 1
 0 \ SCREENS TO TEXT                    2NOV85CHP)
 1 HEX
 2 : FOOL-DOS 6018 A65E ! ;      \ to allow direct DOS
     commands
 3 : FIX-DOS AD48 A65E ! ;
 4 B5BB CONSTANT FMPARMLIST
 5 4000 VARIABLE ORIGIN          \ origin for text storage
 6 0 VARIABLE $BUF 1F ALLOT
 7 0 VARIABLE TEXTPOS
 8 0 VARIABLE EOT                \ end of text
 9 : $BLANK $BUF 21 BLANKS ;
10 : $IN $BLANK $BUF 1E EXPECT ;
11 : $DIMENSION $BUF 1E DUP 0 DO OVER
     OVER + 1 - C@ DUP BL =
12       SWAP 0= OR IF 1 - ELSE LEAVE ENDIF LOOP ;
13 : CAPS $BUF DUP $DIMENSION + SWAP DO
     I C@ DUP 40 AND IF DF
14      AND ENDIF I C! LOOP ;
15 : $PRINT CAPS $BUF $DIMENSION TYPE ;        -->
```

```
SCR # 2
 0 \ SCREENS TO TEXT, continued
         2NOV85CHP)
 1
 2 : TEXTSAVE FC58 CALL ." SAVE: " $IN $BUF C@
 3     IF FOOL-DOS CR 4 EMIT ." OPEN" $PRINT CR
       0204 FMPARMLIST !
 4     ORIGIN @ EOT @ OVER - FMPARMLIST 6 + !
 5     FMPARMLIST 8 + ! 3D6 CALL FMPARMLIST
       A + C@ 9 = IF
 6     ." DISK FULL" FIX-DOS QUIT ENDIF CR 4
       EMIT ." CLOSE" CR
 7     $PRINT ."  FILED " FIX-DOS ENDIF ;
 8
 9 : STORE ( c---) TEXTPOS @ C! 1 TEXTPOS +! ;
10
11 : FETCH ( line screen---) (LINE) -TRAILING 0 DO DUP
12     I + C@ 80 OR STORE LOOP 8D STORE DROP ;
13
14 -->
15
```

```
SCR # 3
 0 \ SCREENS TO TEXT, concluded          2NOV85CHP)
 1
 2 : SET-ORIGIN ORIGIN @ TEXTPOS ! ;
 3
 4 : SCREEN-LIS ( scr#---) DUP SCR ! A0 A3 A0 D2
     C3 D3 6 0
 5     DO STORE LOOP SCR @ A /MOD DUP IF B0 +
       STORE ELSE DROP
 6     ENDIF B0 + STORE 8D STORE
 7     A 0 DO A0 STORE A0 STORE B0 I + STORE
       A0 STORE
 8     I SCR @ FETCH LOOP 10 A DO A0 STORE
       B1 STORE A6 I + STORE
 9     A0 STORE I SCR @ FETCH LOOP 8D STORE 8D
10     STORE TEXTPOS @ EOT ! ;
11
12 : SCREENS ( # #---) SET-ORIGIN 1 + SWAP DO I
13     SCREEN-LIST LOOP 0 STORE ;
14
15 DECIMAL
```

TWO BUGS IN WAP-FORTH

by Chester H. Page

1) FORTH has several routines involving division, but they are all derived from a single primitive routine, U/, which provides for dividing a double-precision number by a single-precision number. It returns a single-precision quotient and a single-precision remainder. Unfortunately, there is a basic error in the primitive routine.

2) There is a logical error in ?STACK which allows one overdraft of the stack without resetting the stack pointer. A second overdraft will generate the correction.

The first bug is easily exhibited by entering

589824. 49152 U/ . .

which should return 12 0 as quotient and remainder. It actually gives 0 0 ! Expressing the above numbers in hex gives a clue; the divisor is C000 which has 1's in the two highest bit positions (15 and 14). Any number that contains no consecutive 1's in its binary representation will allow subtraction of the divisor only when the dividend starts to the left of the divisor, as in

101...
11...

Normally this requires the divisor to start with 0, as in

101xxxxx
011xxxxx

but if the 11 of the divisor occupies the first two bits of a word, the lead 1 in the dividend has overflowed, so the division routine sees

01...
11...

and decides that the dividend is smaller than the divisor. The usual handbook routines for binary division do not provide for overflow (they assume that the divisor has been pre-scaled to the 01... form), and neither does WAP FORTH. Thus as the dividend keeps shifting left looking for a position that allows subtraction of the divisor, this desired condition never occurs! The operands are all on the stack, so have variable locations, but overflow space for the leading bit of the dividend is easily provided in one fixed byte location, not interfering with the stack.

In some operations, e.g., M/MOD, a double-precision quotient is needed. FIG-FORTH defines a primitive U/ that leaves only a single-precision quotient, and provides the doubleprecision quotient by using two applications of U/ to get the high and low portions of the quotient separately. It is logically simpler, and faster, to define M/MOD as a primitive, and then define U/ as M/MOD DROP.

There is a bonus in starting with a two-word quotient. In dropping the supposedly null high word for U/, an error check is easily made:

```
: U/ M/MOD 0= 0= IF ." Quotient too large" QUIT
ENDIF ;
```

New Division Routine

The stack effect diagram is (ud u---u.rem ud.quot), where ud is an unsigned double-precision dividend, u an unsigned single-precision divisor, u.rem the unsigned single-precision remainder, and ud.quot the unsigned double-precision quotient. With ud decomposed into its high and low words, the input configuration is (L H u---). In memory, these words occupy the following locations relative to the top of the stack (lowest memory address):

```
0 1 2 3 4 5
u   H   L
```

Memory above the stack area is used for temporary storage: DE/E1 for the quotient, E2/E3 for the results of trial subtractions, E5 for dividend overflow, E6/E7 for counters. When the division is completed, the quotient and remainder are moved to their appropriate stack cells, replacing the divisor and dividend. The stack pointer is not changed.

Division is carried out by the usual long-division routine -- try to subtract the divisor from the front end of the dividend then shift the dividend left one bit, and repeat. Each time that the subtraction is carried out, a 1 is rotated into the quotient, otherwise a 0 is rotated in.

Scaling

To guarantee full left positioning of the divisor, it is rotated left until the carry is set, then rotated right once to reposition it. Every left shift of the divisor doubles its value, requiring a doubling of the dividend. This is the same as the common shift of decimal points in divisor and dividend in regular 10-base long division. All this results in a concomitant doubling of the remainder, which must be corrected at the end. These scale factors are accommodated by increasing the number of shifts scheduled for the dividend, and, at the finish, downshifting the two-word remainder as many times as the divisor was upshifted.

The appended machine-code routine is converted to FORTH primitive %M/MOD in screen #1; screen #2 is a patch to replace the defective U/ and M/MOD with the new versions. M/MOD is a colon word, so can be patched by entering the CFA (code field address) of its replacement into its first parameter position (PFA) followed by the CFA of the definition terminator ;S. This prevents the new M/MOD from returning to the balance of its old routine. Since U/ is a primitive, its patch requires also altering its execution procedure to that of a colon word, easily done by copying the CFA of its replacement. Entering 1 LOAD generates the new definitions and installs them in your present FORTH. The modified program should be saved to disk to avoid the need for entering the patches every time you start up.

The second bug can be demonstrated by entering . (dot) when the stack is empty. Instead of an error message, 0 OK is returned. SP@ now returns 224, which is above the 222 top-of-stack, and entering a number will place it at 224 in memory. A second "overdraft" will yield an error message and the stack pointer will be re-initialized; a third overdraft repeats the original problem.

The routine for ?STACK given by McCabe includes

```
SP@ S0 @ SWAP U<
```

because in

S0 @ SP@ U<

the TOS address found in S0 goes onto the stack before the stack pointer is found. WAP-FORTH doesn't include the user variable S0, but compiles the value 222 wherever it is needed in the source code. In ?STACK, however, the 222 is compiled ahead of the SP@ - this saves a SWAP but introduces an error!

This error is easily compensated by using 220 instead of 222 in the comparison. The patch is made by

```
220 ' ?STACK 2 + C!
```

so this has been added to screen #2.

```
SCR # 1
 0 \ UNSIGNED D/U DIVISION, M/MOD PRIMITIVE
                                        4NOV85CHP)
 1 HEX
 2 CREATE %M/MOD ( ud u---u.rem ud.quot)
 3 11A9 , E685 , 01A9 , E785 , DE84 , DF84 , E084 ,
 4 E184 , E584 , 0016 , 0136 , 06B0 , E6E6 , E7E6 ,
 5 F490 , 0176 , 0076 , B538 , F502 , 8500 , B5E2 ,
 6 F503 , 8501 , A5E3 , E9E5 , 9000 , 850A , A5E5 ,
 7 95E3 , A503 , 95E2 , 2602 , 26E0 , 26E1 , 26DE ,
 8 36DF , 3604 , 3605 , 3602 , 2603 , C6E5 , D0E6 ,
 9 46CD , 76E5 , 7603 , C602 , D0E7 , B5F6 , 9502 ,
10 B504 , 9503 , A505 , 95DE , A500 , 95DF , A501 ,
11 95E0 , A502 , 95E1 , 4C03 , 0848 , SMUDGE
12 DECIMAL
13 : %U/ ( ud u---u.rem u.quot) %M/MOD IF
14 ." Quotient too large" QUIT ENDIF ;
15 -->

SCR # 2
 0 \ REPLACE U/ AND M/MOD WITH %U/ AND
    %M/MOD                              2NOV85CHP)
 1
 2 \ Replace M/MOD
 3
 4 ' M/MOD DUP 2 + ' ;S CFA SWAP ! ' %M/MOD CFA
    SWAP !
 5
 6 \ Replace U/
 7
 8 ' U/ DUP 2 - DUP 4 + ' ;S CFA SWAP !
 9   ' %U/ CFA DUP @ ROT ! SWAP !
10
11 \ Fix logic error in ?STACK
12
13 220 ' ?STACK 2 + C!
14
```

```
0000:              1  ********************************
0000:              2  *  BASIC PRIMITIVE %M/MOD      *
0000:              3  *          FOR                  *
0000:              4  *     PATCHING WAP-FORTH        *
0000:              5  *                               *
0000:              6  *      CHESTER H. PAGE          *
0000:              7  *          NOV  1985            *
0000:              8  ********************************
----- NEXT OBJECT FILE NAME IS DIVISION.0
```

```
0800:          0800  9          ORG  $800
0800:          0848  10 NEXT    EQU  $848
0800:          00DE  11 B       EQU  $DE
0800: A9 11          12          LDA  #17
0802: 85 E6          13          STA  B+8    No. of Dividend
0804: A9 01          14          LDA  #1      Shifts Used for
0806: 85 E7          15          STA  B+9     Final Scaling of
0808: 84 DE          16          STY  B       of Remainder
080A: 84 DF          17          STY  B+1    Clear Quotient
080C: 84 E0          18          STY  B+2
080E: 84 E1          19          STY  B+3    Clear Overflow
0810: 84 E5          20          STY  B+7      Byte
0812: 16 00          21 ALINE    ASL  0,X    Aline Divisor
0814: 36 01          22          ROL  1,X
0816: B0 06 081E     23          BCS  BACK
0818: E6 E6          24          INC  B+8
081A: E6 E7          25          INC  B+9
081C: 90 F4 0812     26          BCC  ALINE
081E: 76 01          27 BACK     ROR  1,X    Restore Divisor
0820: 76 00          28          ROR  0,X      Overflow
0822: 38             29 LOOP     SEC         Trial Subtraction
0823: B5 02          30          LDA  2,X
0825: F5 00          31          SBC  0,X
0827: 85 E2          32          STA  B+4
0829: B5 03          33          LDA  3,X
082B: F5 01          34          SBC  1,X
082D: 85 E3          35          STA  B+5
082F: A5 E5          36          LDA  B+7
0831: E9 00          37          SBC  #0
0833: 90 0A 083F     38          BCC  ADVAN  If Carry Clear,
0835: 85 E5          39          STA  B+7          No Subtraction
0837: A5 E3          40          LDA  B+5
0839: 95 03          41          STA  3,X
083B: A5 E2          42          LDA  B+4
083D: 95 02          43          STA  2,X
083F: 26 E0          44 ADVAN    ROL  B+2    Advance Quotient
0841: 26 E1          45          ROL  B+3
0843: 26 DE          46          ROL  B
0845: 26 DF          47          ROL  B+1
0847: 36 04          48          ROL  4,X    Advance Dividend
0849: 36 05          49          ROL  5,X
084B: 36 02          50          ROL  2,X
084D: 36 03          51          ROL  3,X
084F: 26 E5          52          ROL  B+7
0851: C6 E6          53          DEC  B+8
0853: D0 CD 0822     54          BNE  LOOP
0855: 46 E5          55 REM      LSR  B+7    Correct Remainder
0857: 76 03          56          ROR  3,X      Scale
0859: 76 02          57          ROR  2,X
085B: C6 E7          58          DEC  B+9
085D: D0 F6 0855     59          BNE  REM
085F: B5 02          60          LDA  2,X    Transfer Results
0861: 95 04          61          STA  4,X     to Proper
0863: B5 03          62          LDA  3,X     Stack Locations
0865: 95 05          63          STA  5,X
0867: A5 DE          64          LDA  B
0869: 95 00          65          STA  0,X
086B: A5 DF          66          LDA  B+1
086D: 95 01          67          STA  1,X
086F: A5 E0          68          LDA  B+2
0871: 95 02          69          STA  2,X
0873: A5 E1          70          LDA  B+3
0875: 95 03          71          STA  3,X
0877: 4C 48 08       72          JMP  NEXT
```

Announcing the only devoted entirely to

Sponsored by MACWORLD, the Macintosh Magazine, January 16-18, 1986, Brooks Hall and Civic Auditorium, San Francisco

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- Tips on using the Macintosh in large organizations
- The advantages of networking
- Getting the most out of spreadsheet programs

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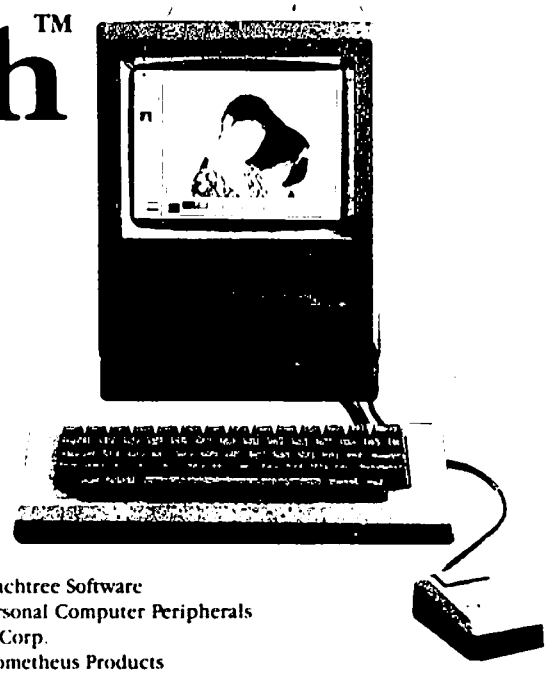

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Creative Solutions
Creighton Development, Inc.
Cricket Software
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Dataspace Corp.
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Digital, Etc.
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ESoft Enterprises
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MacTUTOR
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MACWORLD
Manx Software
MassTech Development Labs, Inc.
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Micah, Inc.
Micro Design
Microsoft Corp.
MicroStore
Miles Computing
Mindscape, Inc.
MPH Computer Products
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Network Consulting, Inc.
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Nolo Press
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MACWORLD EXPOSITION
SAN FRANCISCO

DOUBLE-PRECISION FORTH
by Chester H. Page

Single-precision FORTH uses 16-bit (2 bytes) words to represent numbers. This provides for unsigned integers in the range 0 to 65,535 (hex FFFF) or signed integers in the range -32,768 to +32,767. The restriction to integers in these ranges requires very careful use of scale factors in computational problems. If, however, we use double-precision 32-bit representations, we can express unsigned integers from 0 to 4,294,967,295 or signed integers from -2,147,483,648 to +2,147,483,647. These ranges would make scaling quite easy and also provide more precision (number of significant digits).

The use of double-precision arithmetic requires generalizations of a number of colon words, and, more importantly, an extension of the machine-code primitive operations of multiplication and division. These new primitives must provide for an unsigned quad (4-word) product of two unsigned double-precision numbers, and for division of an unsigned quad number by an unsigned double-precision number, leaving a quad quotient and a double remainder. An analog of ordinary long multiplication, using binary numbers, provides for multiplying two 32-bit numbers, using 64 bits for the product. A similar analog of long division provides for a 64-bit dividend and a 32-bit divisor, leaving a 64-bit quotient and a 32-bit remainder. The primitive division routine is an extension of the routine for dividing a double-precision number by a single-precision number used in my earlier paper (Journal of Washington Apple Pi) entitled "Two Bugs in WAP-FORTH".

Before constructing the machine code, we need to examine the memory location of stack data. A single-precision word has two bytes, least significant on top. In higher precisions, however, the constituent words have the most significant word on top, although within each word the bytes are in the other order. A double-precision number will have its two words in the order d-low d-high (TOS -->), so we set up the four words of a quad to be in the order:

q-low q-middle-low q-middle-high q-high (TOS -->)

so that q can also be decomposed into two d-pairs,

q-low q-high (TOS -->).

Since the stack builds downward, all these order relations are reversed in describing addresses in memory.

THE MULTIPLICATION ALGORITHM

This general description of the algorithm applies to all precisions. The stack starts with multiplicand multiplier (TOS -->). The multiplicand is moved to a storage location and replaced with zeros, giving:

0 multiplier

on the stack. These two areas will be replaced with the product as:

low-half high-half.

This entire area will be shifted up (left shift in memory) a bit at a time. Whenever the multiplier spills a 1, the stored multiplicand will be added to the low-half of the product. When the entire multiplier has been spilled out the end, and the final addition made if required, the process is finished.

THE DIVISION ALGORITHM

At any level of precision, the stack diagram, using three equal blocks of space, is (dividend-low dividend-high divisor-rem quot-low quot-high). The division process is the analog of ordinary long division, with the special situation that for binary representations, multiples of the divisor are not needed; at any position, the contribution to the quotient is either 1 or 0.

Initially, the dividend and divisor have their leading digits aligned - if the divisor will go into the dividend in this position, a 1 is appended to the low end of the partial quotient, and the dividend shifted left. If the divisor will not go, a 0 is appended, and the dividend shifted. When the dividend is shifted to the left, space must be provided to hold one bit of overflow from the blocks holding the dividend.

To avoid starting the trial subtractions in the middle of the dividend, the divisor is initially normalized by shifting its bits to the left until the leading bit is a 1. For N such shifts, the divisor has been doubled N times, so the same scale factor must be considered for the dividend and remainder. This shifting is analogous to the common shift of the decimal points in dividend and divisor in grade-school long division. The scale factor is applied to the dividend by adding N to the number of shifts of the dividend and quotient. The remainder will be too large by having been doubled N times, so the final operation is to shift the remainder to the right N times.

The division routine can be described with a pseudo-assembly-code, e.g., ROL BLOCK1 as shorthand for applying ROL to each byte in BLOCK1, from the least significant to the most significant. LDA BLOCK2 followed by STA BLOCK1 would be short for transferring the contents of the bytes in BLOCK2 to the bytes in BLOCK1. In addition to the three blocks holding the operands (in the stack), three more will be needed for temporary storage, and one byte for dividend overflow. These will be assigned to fixed locations on zero-page; the stack blocks are in variable locations.

The block numbers are assigned as follows:

BLOCK1	DIVISOR
BLOCK2	DIVIDEND, HIGH HALF
BLOCK3	DIVIDEND, LOW HALF
BLOCK4	QUOTIENT, HIGH HALF
BLOCK5	QUOTIENT, LOW HALF
BLOCK6	RESULT OF SUBTRACTION
BYTE	One byte for overflow

Since the Y-register always holds 0 after the execution of a FORTH word. we can use STY for initializing blocks (bytes) to 0. The division routine follows:

```
        LDA #2N+1       Number of dividend shifts,
                        N = number of bits per block
        STA COUNT1
        LDA #1
        STA COUNT2      For final adjust. of remainder
        STY BLOCK4      Clear quotient
        STY BLOCK5
ALINE   ASL BLOCK1      Align divisor
```

contd.

```
          BCS  BACK
          INC  COUNT1
          INC  COUNT2   Increment counts for each shift
          BCC  ALINE
BACK      ROR  BLOCK1   Restore overflow
LOOP      SEC           Trial subtraction
          LDA  BLOCK2
          SBC  BLOCK1
          STA  BLOCK6
          LDA  BYTE
          SBC  #0
          BCC  ADVANCE  If carry clear, no subtraction
          STA  BYTE
          LDA  BLOCK6
          STA  BLOCK2
ADVANCE   ROL  BLOCK5
          ROL  BLOCK4
          ROL  BLOCK3
          ROL  BLOCK2
          ROL  BYTE
          DEC  COUNT1
          BNE  LOOP
REM       LSR  BYTE     Adjust remainder scale
          ROR  BLOCK2
          DEC  COUNT2
          BNE  REM
          LDA  BLOCK2   Transfer results
          STA  BLOCK3   into proper stack positions
          LDA  BLOCK4
          STA  BLOCK1
          LDA  BLOCK5
          STA  BLOCK2
```

In the details of the coding of this routine, it must be remembered that in each word, the low byte is at the lower address - the word is "backward".

COLON WORDS

In addition to the primitives UD*, QD/MOD, and QMINUS, we need the following analogs of single-precision words:

DOUBLE	SINGLE
D@	@
D!	!
DCONSTANT	CONSTANT
DVARIABLE	VARIABLE
UD/	U/
MD/	M/
D/MOD	/MOD
D/	/
D*/MOD	*/MOD
D*/	*/
D*	*
MD*	M*
D-	-
D->Q	S->D
Q+-	D+-
QABS	DABS
D=	=
D0=	0=
D<	<
D>	>
DU<	U<
DMIN	MIN
DMAX	MAX
D#	#
D#>	#>
D#S	#S
DSIGN	SIGN
Q.R	D.R
Q.	D.
UD.	U.

The latter group is needed in connection with formatting and printing numbers.

```
SCR # 1
 0 \ D@ D! DCONSTANT & DVARIABLE  21NOV85CHP)
 1 : D@ ( A--d) DUP 2 + @    \ get low half
 2   SWAP @ ;                \ get high half
 3 : D! ( d A--)          \ stack L H A
 4   SWAP OVER             \ L A H A
 5   !                  \ store high half
 6   2 + ! ;             \ store low half
 7 : DCONSTANT ( d--)
 8   <BUILDS             \ compile header, 0 dummy parameter
 9   , ,                 \ compile d following the dummy
10   DOES>     \ change code field to DODOE, replace 0 with
a
11   D@ ;      \ pointer to D@ as generic operating procedure
12 : DVARIABLE  ( d--) <BUILDS
13   , , DOES> \ assigns generic operating procedure
14   ;   \ of leaving address following dummy on stack
15 -->

SCR # 2
 0 \ DOUBLE-PRECISION MACHINE MULTIPLICATION
       21NOV85CHP)
 1 HEX
 2 CREATE UD*   ( ud1 ud2--uq)
 3 04B5, 0085  , 05B5  , 0185  , 06B5  , 0285, 07B5  , 0385  ,
 4 0494, 0594  , 0694  , 0794  , 20A0  , 0616, 0736  , 0436  ,
 5 0536, 0236  , 0336  , 0036  , 0136  ,
 6 1F90, A518  , 7502  , 9506  , A506  , 7503, 9507  ,
 7 A507, 7500  , 9504  , A504  , 7501  , 9505, A905  , 7500  ,
 8 9502, 8802  , CCD0 , 484C  , 08 C  ,  SMUDGE
 9 DECIMAL
10 : 2DROP DROP DROP ;
11 : D- DMINUS D+ ;
12 : D* ( d1 d2--q3) UD* 2DROP ;
13 : PICK ( n--n1) 2 * SP@ + DUP 222 > IF ." Picked too
     deep"  QUIT
14  ENDIF @ ;
15 -->
SCR # 3
 0 \ UNSIGNED Q/D DIVISION, QD/MOD PRIMITIVE
                                        21NOV85CHP)
 1 HEX CREATE QD/MOD ( uq ud--ud.rem uq.quot)
 2 21A9, 0D85, 01A9   , 0E85  , 0084  , 0184  , 0284  , 0384  ,
 3 0484, 0584  , 0684  , 0784  , 0C84  , 0216  , 0336  , 0036  ,
 4 0136, 06B0  , 0DE6 , 0EE6 , F090  , 0176  , 0076  , 0376  ,
```

contd.

```
 5 0276, B538  , F506  , 8502  , B508  , F507  , 8503  , B509  ,
 6 F504, 8500  , B50A , F505  , 8501  , A50B , E90C , 9000  ,
 7 8512,A50C  , 950B  , A505 , 950A  , A504  , 9509  , A507  ,
 8 9508, 2606  , 2604  , 2605  , 2606  , 2607  , 2600  , 2601  ,
 9 2602, 3603  , 360A  , 360B  , 3608  , 3609  , 3606  , 3607  ,
10 3604, 2605  , C60C , D00D , 46A9 , 760C  , 7605  , 7604  ,
11 7607, C606  , D00E , B5F2 , 9504  , B508  , 9505  , B509  ,
12 9506, B50A  , 9507  , A50B , 9500  , A502  , 9501  , A503  ,
13 9502, A500  , 9503  , A501  , 9504  , A506  , 9505  , A507  ,
14 9506, A504  , 9507  , 4C05  , 0848  ,  SMUDGE
15 DECIMAL  -->

SCR # 4
 0 \ 2MOVES  QMINUS  Q+-                    3NOV85CHP)
 1 : 2DUP OVER OVER ;
 2 : 2SWAP ROT >R ROT R> ;
 3 : 2OVER >R >R 2DUP R> R> 2SWAP ;
 4 : 2ROT >R >R 2SWAP R> R> 2SWAP ;
 5 : D->Q DUP 0< S->D DMINUS ;
 6
 7 HEX CREATE QMINUS 9838,06F5,0695,F598,9507,9807,
 8 04F5 , 0495 , F598 , 9505 , 4C05 , 0EA5 , SMUDGE
 9 DECIMAL
10 : Q+- 0< IF QMINUS ENDIF ;
11 : QABS DUP Q+- ;
12 :
13 : UD/  ( uq ud---ud.rem ud.quot) QD/MOD OR IF
14 :    ." Quotient too large" QUIT ENDIF ;
15 :  -->

SCR # 5
 0 \ SIGNED DOUBLE-PRECISION MULT & DIV  3NOV85CHP)
 1 : MD* ( d1 d2---q)
 2    >R OVER R> DUP ROT   \ add hibytes of d1 and d2 on TOS
 3    XOR >R                \ move product sign to return stack
 4    DABS 2SWAP DABS UD*    \ compute unsigned product
 5    R> Q+- ;               \ fix sign
 6
 7 : MD/ ( q d1---d2 d3)
 8    3 PICK >R          \ hibyte of q to return stack
 9    >R >R              \ d1 to return stack
10    QABS R> R DABS     \ absolute q and d1, hibyte of d1 still
11    UD/                \ on return stack - divide absolute values
12    R> R XOR D+-       \ fix sign of product, sign of q still on
13    2SWAP              \ return stack
14    R> D+-             \ attach dividend sign to remainder
15    2SWAP ;    -->     \ quotient to TOS

SCR # 6
 0 \ d DIVISIONS and COMPARISONS            9NOV85CHP)
 1
 2 : D*/MOD ( d1 d2 d3---d4 d5) >R >R MD* R> R> MD/ ;
 3 : D/MOD ( d1 d2---d3 d4) >R >R D->Q R> R> MD/ ;
 4 : D/ ( d1 d2---d3) D/MOD 2SWAP 2DROP ;
 5 : D*/ ( d1 d2 d3---d4) D*/MOD 2SWAP 2DROP ;
 6
 7 : D= ( d1 d2---f) ROT = >R = R> AND ;
 8 : D0= ( d1 d2---f) 0. D= ;
 9 : D< ( d1 d2---f) ROT 2DUP > IF 2DROP 2DROP 1
10    ELSE = IF U< ELSE 2DROP 0 ENDIF ENDIF ;
11 : DU< ( ud1 ud2---f) 3 PICK OVER XOR 0< >R D< R>XOR ;
12 : D> ( d1 d2---f) 2SWAP D< ;
13 : DMIN ( d1 d2---d) 2OVER 2OVER D> IF 2SWAP
                                        ENDIF 2DROP ;
14 :DMAX ( d1 d2---d) 2OVER 2OVER D< IF 2SWAP
                                        ENDIF 2DROP ;
15  -->

SCR # 7
 0 \ QUAD AND DOUBLE PRINT COMMANDS    3NOV85CHP)
 1 : D# ( uq1---uq2)
 2    BASE @ S->D      \ current number base as double word
 3    QD/MOD           \ divide leaving d-remainder and
 4                     \ q-quotient on stack
 5    2ROT DROP        \ quotient, low byte of rem on stack
 6    9 OVER <         \ leave true flag if not decimal digit
 7    IF               \ true branch uses a letter character
 8      7 +            \ convert to letter character
 9    ENDIF
10    48 +             \ add $30 to convert to ASCII
11    HOLD             \ put ASCII value in output string
12  ;
13 -->

SCR # 8
 0 \ QUAD AND DOUBLE PRINT COMMANDS, cont.
                                        29OCT85CHP)
 1 : D#> ( uq---addr n)
 2    2DROP 2DROP        \ drop remaining uq from stack
 3    HLD @ PAD          \ leave pointer to text buffer
 4    OVER - ;           \ add character count
 5
 6 : D#S ( uq---0 0 0 0)
 7    BEGIN              \ start an indefinite loop
 8    D#                 \ generate character, leaving
 9                       \ quad remainder on stack
10    2DUP OR >R         \ check for
11    2OVER OR R> OR     \       four 0's on stack
12    0=
13 UNTIL ;
14
15 -->

SCR # 9
 0 \ QUAD AND DOUBLE PRINT COMMANDS, cont.
                                        29OCT85CHP)
 1 : DSIGN ( n uq---uq)
 2    >R >R ROT R> R> ROT    \ move n to TOS
 3    0<
 4    IF
 5      45 HOLD       \ if negative, insert - sign in string
 6 ENDIF ;
 7
 8 : Q.R ( q n---)
 9    >R             \ move field-width n to return stack
10    SWAP OVER >R >R ROT ROT R> R>   \ extra copy of
                                        sign byte of q
11                  \ under q on stack for use by DSIGN
12    QABS
13    <# D#S DSIGN D#>   \ set up output string with address of
14          \ leftmost character and the length byte on stack
15    R> OVER - SPACES TYPE ; --> \ right justify and print

SCR # 10
 0 \ QUAD AND DOUBLE PRINT COMMANDS, concl.
                                        29OCT85CHP)
 1 : Q. ( q---)
 2     222 SP@ - 10 < 1 ?ERROR
```

contd.

```
 3 \ is the stack deep enough to be a quad ?
 4 \ this avoids hang-up on UNTIL in D#S
 5     0              \ dummy field width
 6     Q.R            \ print number without leading blanks
 7     SPACE ; \ print a space at the end to separate the "OK"
 8
 9 : UD. ( ud---)
10     0.         \ convert to unsigned quad with dummy high half
11     Q. ;
```

```
0000:                1  ****************************
0000:                2  *     PRIMITIVE UD*        *
0000:                3  * FOR DOUBLE-PRECISION     *
0000:                4  *       ARITHMETIC         *
0000:                5  *                          *
0000:                6  *    CHESTER H. PAGE       *
0000:                7  *       NOV 1985           *
0000:                8  ****************************
0800:          0800  9          ORG  $800
0800:          0848 10  NEXT    EQU  $848
0800:          0000 11  B       EQU  $0
0800: B5 04          12          LDA  4,X    Save Multiplier
0802: 85 00          13          STA  B
0804: B5 05          14          LDA  5,X
0806: 85 01          15          STA  B+1
0808: B5 06          16          LDA  6,X
080A: 85 02          17          STA  B+2
080C: B5 07          18          LDA  7,X
080E: 85 03          19          STA  B+3
0810: 94 04          20          STY  4,X    Clear Low Half
0812: 94 05          21          STY  5,X      of Product
0814: 94 06          22          STY  6,X
0816: 94 07          23          STY  7,X
0818: A0 20          24          LDY  #32
081A: 16 06          25  LOOP    ASL  6,X
081C: 36 07          26          ROL  7,X
081E: 36 04          27          ROL  4,X
0820: 36 05          28          ROL  5,X
0822: 36 02          29          ROL  2,X
0824: 36 03          30          ROL  3,X
0826: 36 00          31          ROL  0,X
0828: 36 01          32          ROL  1,X
082A: 90 1F 084B     33          BCC  SKIP
082C: 18             34          CLC
082D: A5 02          35          LDA  B+2
082F: 75 06          36          ADC  6,X
0831: 95 06          37          STA  6,X
0833: A5 03          38          LDA  B+3
0835: 75 07          39          ADC  7,X
0837: 95 07          40          STA  7,X
0839: A5 00          41          LDA  B
083B: 75 04          42          ADC  4,X
083D: 95 04          43          STA  4,X
083F: A5 01          44          LDA  B+1
0841: 75 05          45          ADC  5,X
0843: 95 05          46          STA  5,X
0845: A9 00          47          LDA  #0
0847: 75 02          48          ADC  2,X
0849: 95 02          49          STA  2,X
084B: 88             50  SKIP    DEY
084C D0 CC 081A      51          BNE  LOOP
084E: 4C 48 08       52          JMP  NEXT
```

```
0000:                1  ****************************
0000:                2  *                          *
0000:                3  *BASIC PRIMITIVE QD/MOD    *
0000:                4  * FOR DOUBLE-PRECISION     *
0000:                5  *       ARITHMETIC         *
0000:                6  *                          *
0000:                7  *    CHESTER H. PAGE       *
0000:                8  *       NOV 4, 1985        *
0000:                9  *                          *
0000:               10  ****************************
0800:          0800 11          ORG  $800
0800:          0848 12  NEXT    EQU  $848
0800:          0000 13  B       EQU  $0
```

```
0800: A9 21          14          LDA  #33
0802: 85 0D          15          STA  B+13   No. of Dividend
0804: A9 01          16          LDA  #1       Shifts used for
0806: 85 0E          17          STA  B+14   Final Scaling of
0808: 84 00          18          STY  B        Remainder
080A: 84 01          19          STY  B+1    Clear Quotient
080C: 84 02          20          STY  B+2
080E: 84 03          21          STY  B+3
0810: 84 04          22          STY  B+4
0812: 84 05          23          STY  B+5
0814: 84 06          24          STY  B+6
0816: 84 07          25          STY  B+7    Clear
0818: 84 0C          26          STY  B+12   Overflow Byte
081A: 16 02          27  ALINE   ASL  2,X    Align Divisor
081C: 36 03          28          ROL  3,X
081E: 36 00          29          ROL  0,X
0820: 36 01          30          ROL  1,X
0822: B0 06 082A     31          BCS  BACK
0824: E6 0D          32          INC  B+13
0826: E6 0E          33          INC  B+14
0828: 90 F0 081A     34          BCC  ALINE
082A: 76 01          35  BACK    ROR  1,X    Restore Divisor
082C: 76 00          36          ROR  0,X      Overflow
082E: 76 03          37          ROR  3,X
0830: 76 02          38          ROR  2,X
0832: 38             39  LOOP    SEC         Trial Subtraction
0833: B5 06          40          LDA  6,X
0835: F5 02          41          SBC  2,X
0837: 85 08          42          STA  B+8
0839: B5 07          43          LDA  7,X
083B: F5 03          44          SBC  3,X
083D: 85 09          45          STA  B+9
083F: B5 04          46          LDA  4,X
0841: F5 00          47          SBC  0,X
0843: 85 0A          48          STA  B+10
0845: B5 05          49          LDA  5,X
0847: F5 01          50          SBC  1,X
0849: 85 0B          51          STA  B+11
084B: A5 0C          52          LDA  B+12
084D: E9 00          53          SBC  #0
084F: 90 12 0863     54          BCC  ADVAN  If carry clear,
0851: 85 0C          55          STA  B+12     no subtraction
0853: A5 0B          56          LDA  B+11
0855: 95 05          57          STA  5,X
0857: A5 0A          58          LDA  B+10
0859: 95 04          59          STA  4,X
085B: A5 09          60          LDA  B+9
085D: 95 07          61          STA  7,X
085F: A5 08          62          LDA  B+8
0861: 95 06          63          STA  6,X
0863: 26 04          64  ADVAN   ROL  B+4    Advance
0865: 26 05          65          ROL  B+5      Quotient
0867: 26 06          66          ROL  B+6
0869: 26 07          67          ROL  B+7
086B: 26 00          68          ROL  B
086D: 26 01          69          ROL  B+1
086F: 26 02          70          ROL  B+2
0871: 26 03          71          ROL  B+3
0873: 36 0A          72          ROL  10,X   Advance
0875: 36 0B          73          ROL  11,X     Dividend
0877: 36 08          74          ROL  8,X
0879: 36 09          75          ROL  9,X
087B: 36 06          76          ROL  6,X
087D: 36 07          77          ROL  7,X
087F: 36 04          78          ROL  4,X
0881: 36 05          79          ROL  5,X
0883: 26 0C          80          ROL  B+12
0885: C6 0D          81          DEC  B+13
0887: D0 A9 0832     82          BNE  LOOP
0889: 46 0C          83 REM      LSR  B+12   Correct
088B: 76 05          84          ROR  5,X      Remainder Scale
088D: 76 04          85          ROR  4,X
088F: 76 07          86          ROR  7,X
0891: 76 06          87          ROR  6,X
0893: C6 0E          88          DEC  B+14
0895: D0 F2 0889     89          BNE  REM
0897: B5 04          90          LDA  4,X    Transfer Results
0899: 95 08          91          STA  8,X    To Proper
089B: B5 05          92          LDA  5,X    Stack Locations
```

contd. on pg 48

LO-RES TO HI-RES CONVERSION PROGRAM

by Ken Knight

The following program is an answer to a significant problem that is encountered when you teach graphics to children. For most people, computer graphics are more enjoyable than, say, writing a program to sortl,000 names. Half the fun in writing a graphics program is in seeing your results build up on the screen and eventually on paper. But this is where the problem arises.

Most computer programming teachers start graphics with lo-res since it is in some ways less complex than hi-res. The student's first program might be, "place ten points on the screen". When the point is reached where the assignment is, "make a picture of some sort", the hoped-for conclusion to the project is a printout of the picture for the student. Until recently, however, we would have to tell the student that this was not possible since we did not have the software. **LO/HI** is my answer to that problem.

LO/HI will take a lo-res image and convert it to a hi-res image in about 1 second or so. Once the picture is in hi-res you should have no trouble printing it on your printer using whatever software that will do the best job. (In our case it was the software provided by Apple with the Imagewriter.)

The program is fairly straightforward. However, there are some parts of the program that deserve attention. After LO/HI has found out what the lo-res color is at the current point on the screen it must then find the equivalent color for the hi-res screen. This is where a problem arises, since the values for any hi-res color change according to the screen position. If the position is even, one value is used, if odd the other. Therefore, LO/HI must determine if the current screen position is odd or even. This is done by dividing the current horizontal screen coordinate by two. If the value was odd to start with a one will be stored in the carry flag, otherwise a zero will be placed there. Once the program knows if the screen location is even or odd it can simply load from the appropriate table the equivalent hi-res color value.

The next step is to actually plot the lo-res block onto the hi-res screen. This is done using two loops. The outer loop computes the base address of the line that is being worked on and saves that value. The inner loop actually plots the point. The byte that corresponds to the equivalent X,Y coordinates on the hi-res screen of our lo-res block is loaded with the color value that was just computed. This is done until a block 7 pixels by 4 lines has been drawn on the screen.

After the block has been drawn the program checks to see if the whole screen has been drawn. If it has, then control is returned to the user. Otherwise the program continues. The next X,Y coordinate is computed. The whole process of determining the correct color, computing the equivalent coordinates for the hi-res screen, and finally placing the block on the screen is repeated.

LO/HI makes use of some data tables. Two of these are incorporated into the actual code itself. They are the equivalent hi-res color values that are to be used. However, there is one other table that must be loaded in from the outside. It is called the Y-lookup table, and it contains the base addresses for every hi-res screen line that will be used. This table must be loaded into memory before LO/HI will run properly. If it is not in memory and LO/Hi is run, strange things may happen. I have included a small BASIC program that will generate this table for you and save it to disk under the name Y-lookup. Once the program has run its course you will never need to run it again, unless you lose the table it just created.

If you have comments I can be reached at: Box C-2018, College of Wooster, Wooster, Ohio 44691. My phone number is (216)-264-2000 extension 2649.

Basic Program to generate Y-Lookup Table:

```
10  FOR Y = 0 TO 191
20  Y1 = INT (Y / 8):YR = Y - Y1* 8
30  Y2 = INT (Y1 / 8):YS = Y1 - Y2 * 8
40  YL = 8192 + Y2 * 40 + YS * 128 + YR * 1024
50  POKE 24832 + Y, INT (YL / 256)
60  POKE 25088 + Y,YL - INT (YL/ 256) * 256
70  NEXT Y
```

```
                1  ************************
                2  * This program will convert *
                3  *  a lo-res  image to hi-res.  *
                4  ************************
                5  *       WRITTEN BY       *
                6  *     Kenneth R. Knight     *
                7  *      Designed 8/30/85     *
                8  ************************
                9  *
               10               ORG  $6000
               11  CH           EQU  $24    ;Horizontal position
               12  CV           EQU  $25    ;Vertical position
               13  COUNT        EQU  $00    ;Loop counter
               14  SCRNLO       EQU  $01    ;..Screen address
               15  SCRNHI       EQU  $02    ;...Address
               16  COLOR        EQU  $03    ;Color value
               17  YTEMP        EQU  $04    ;Temp. Y
               18  YVALLO       EQU  $6200  ;Y lookup table low bytes
               19  YVALHI       EQU  $6100  ;Y lookup table high bytes
               20  HGR          EQU  $F3E2
               21  SCRN         EQU  $F871  ;Gets lo-res color value
               22  *
               23  ************************
               24  *   Initialize all values     *
               25  ************************
               26  *
6000: A9 04    27  START        LDA  #$04
6002: 85 00    28               STA  COUNT
6004: A9 00    29               LDA  #$00
6006: 85 24    30               STA  CH
6008: 85 25    31               STA  CV
600A: A8       32               TAY
600B: AA       33               TAX
600C: 85 04    34               STA  YTEMP
600E: 20 E2 F3 35               JSR  HGR
               36  *
```

contd.

```
                        37 ************************
                        38 * Read color of byte off the*
                        39 * lo-res screen and transfer *
                        40 * it to the hi-res DISPLAY.*
                        41 ************************
                        42 *
6011: 20 71 F8          43 LOOP     JSR  SCRN  ;Get color
6014: AA                44          TAX
6015: 18                45          CLC
6016: A5 24             46          LDA  CH
6018: 4A                47          LSR  A
6019: 90 06             48          BCC  EVEN
601B: BD 79 60          49 ODD      LDA  SHODD,X
601E: 18                50          CLC
601F: 90 03             51          BCC  DLOOP;Always taken
6021: BD 69 60          52 EVEN     LDA  SHEVEN,X
                        53 *
                        54 ************************
                        55 * Calculate Y-cooordinate *
                        56 * base address.          *
                        57 ************************
                        58 *
6024: 85 03             59 DLOOP    STA  COLOR
6026: A6 04             60 YFIND    LDX  YTEMP
6028: BD 00 62          61          LDA  YVALLO,X
602B: 85 01             62          STA  SCRNLO
602D: BD 00 61          63          LDA  YVALHI,X
6030: 85 02             64          STA  SCRNHI
6032: A4 24             65          LDY  CH     ;X-coordinate
6034: A5 03             66 DRAW     LDA  COLOR
6036: 91 01             67          STA  (SCRNLO),Y ;Plot shape
6038: E6 04             68          INC  YTEMP
603A: C6 00             69          DEC  COUNT
603C: D0 E8             70          BNE  YFIND
                        71 *
603E: E6 24             72 NEXTX    INC  CH
6040: A9 04             73          LDA  #$04
6042: 85 00             74          STA  COUNT ;Re-set counter
6044: 38                75          SEC
6045: A5 04             76          LDA  YTEMP
6047: E9 04             77          SBC  #$04
6049: 85 04             78          STA  YTEMP ;Reset Y-coordinate
604B: A5 24             79          LDA  CH
604D: C9 28             80          CMP  #$28   ;Done yet?
604F: D0 10             81          BNE  RETURN ;NO, continue line
6051: A9 00             82 NEXTLINE LDA  #$00
6053: 85 24             83          STA  CH     ;X-coord.=0
6055: E6 25             84          INC  CV
6057: A5 25             85          LDA  CV
6059: 0A                86          ASL
605A: 0A                87          ASL
605B: 85 04             88 STA      YTEMP
605D: C9 A0             89          CMP  #$A0   ;Done with screen?
605F: F0 07             90          BEQ  EXIT   ;YES, exit program
6061: A4 24             91 RETURN   LDY  CH
6063: A5 25             92          LDA  CV
6065: 4C 11 60          93          JMP  LOOP
                        94 ************************
                        95 *    Return to BASIC     *
                        96 ************************
6068: 60                97 EXIT     RTS
                        98 *
                        99 ************************
                       100 *      SHAPES TABLE      *
                       101 ************************
                       102 *
6069: 00 55 D5          103 SHEVEN  HEX  00,55,D5,55,25
606C: 55 25
606E: FF D5 D5          104         HEX  FF,D5,D5,00,AA
6071: 00 AA
6073: FF D5 2A          105         HEX  FF,D5,2A,AA,D5,FF
6076: AA D5 FF
6079: 00 2A AA          106 SHODD   HEX  00,2A,AA,2A,55
607C: 2A 55
607E: FF AA AA          107         HEX  FF,AA,AA,00,D5
6081: 00 D5
6083: FF 2A 55          108         HEX  FF,2A,55,D5,AA,FF
6086: D5 AA FF
                       109 ************************
                       110 *      BLACK=$00         *
                       111 *      WHITE=$FF         *
                       112 *      GREEN=$2A,$55     *
                       113 *       BLUE=$55,$2A     *
                       114 *     ORANGE=$AA,$D5     *
                       115 *  DARK BLUE=$D5,$AA     *
                       116 *                        *
                       117 * The above values are the  *
                       118 * byte values for the HIRES *
                       119 * colors.If there are 2 values *
                       120 * for a color,  the 1st value  *
                       121 * corresponds to the color   *
                       122 * when it's used on an even  *
                       123 * byte, the 2nd for odd byte *
                       124 ************************
```

-End assembly, 137 bytes, Errors: 0

The Musical Apple

by Raymond Hobbs

This edition of the Musical Apple looks at five products for music synthesis, and takes a sneak preview of 1986 in computer music. Although much of this column is in the way of a review, readers should note that some of these products have been around since I was wearing three-cornered pants, and some are no longer being manufactured (although all can be obtained either new or on the third party market). The descriptions of these products are intended primarily to give the reader an idea of what has been and what is today being used for music synthesis on Apple and Mac computers.

ALF APPLE MUSIC II: The ALF system was made available for the Apple][about 6 years ago. Somewhat bare-boned yet inexpensive, it offered an affordable and easy-to-use entry into music synthesis for Apple owners. The ALF system is contained on one card which has a stereo output to go to your hi-fi, and a handful of programs on disk. To give you an idea of how old this system really is, the software was also commonly available on cassette tape as well. In any event, the heart of the system is contained in the **ENTRY** program. Within ENTRY, you write music text and create instruments. The other program modules, **PLAY, DISCO** and **PERFORM**, allow the user to play individual songs, put whole albums together and interface ALF's music into his or her own programs. This latter is a rather nice touch by ALF.

ENTER puts a musical staff on your screen, along with a palette of musical event choices and a status line, which contains information on the music file in memory (measure, key, part and number of notes remaining possible to enter). The user has two cursors to manipulate - one with either paddle. Cursor 0 selects from the palette, while cursor 1 moves up and down the staff. As events are entered, cursor 1 will scroll to the right, or the staff will scroll to the left, as appropriate. Basic information about the composition may be entered first, such as number of parts, currently selected part, tempo, title of composition, key and time signatures and such. Instrument definition may also be done here, by declaring values for the envelope parameters ATTACK, VOLUME, DECAY, SUSTAIN, RELEASE and GAP. This is all done from the keyboard. Waveform creation is pre-empted in the ALF system - square waves are used throughout (although a white-noise wave, FUZZ, can be invoked as well). The instrument definition procedure is necessarily crude, but sufficient for most single-envelope instruments to be created (as long as a square wave doesn't distort the sound too much). Note entry itself is accomplished by selecting the event type from the palette (paddle 0) and placing it on the staff (paddle 1). Rests are invoked by selecting REST from the palette, then entering it as if it were a note.

In summary, the ALF system is a low-cost, bottom-end approach to Apple music synthesis. It is functional, but lacks the breadth and depth of the larger systems.

MOUNTAIN MUSIC SYSTEM: This was the first of the "large-scale" systems, introduced about 5 1/2 years ago by Mountain Computer. It was the first Apple synthesizer to boast 16 oscillators (to ALF's 9), which can be rather freely spread among instruments. Software provided is a MUSIC PLAYER, MUSIC EDITOR, MUSIC MERGER and INSTRUMENT DEFINER. The functions of each part of the system are described below. Overall, the system is designed to allow the user to describe waveforms and envelopes for each instrument, using the INSTRUMENT DEFINER, enter musical notation on a staff through the MUSIC EDITOR, merge sections of written music too long to fit together in memory through the MUSIC MERGER, and play the composition using the MUSIC PLAYER. The package includes two cards which do the synthesis, a light pen for entering music text, and two audio outputs which connect to the user's own stereo.

The Instrument Definer. Within the Instrument Definer, the user may assign oscillators to the instrument and define the waveform and envelope parameters for each oscillator. In this way, up to eight waveforms and envelopes can be created for an instrument (only eight, because audio output is split at eight oscillators per channel). In practice from one to three oscillators are sufficient. This free-form method of instrument definition actually allows the user greater control over instrument sounds than do most of the later synthesis packages. Each oscillator is created separately, and may be assigned a weight (amplitude) relative to the other oscillators used. Linear or exponential decay may be selected, and waveforms (up to 20 harmonics) may be created and assigned to each oscillator. In addition, the envelope can be created both in the frequency and the amplitude domains, with up to 15 plotted points! During the instrument definition process, you receive audio feedback, which keeps you abreast of how the instrument sounds (you may adjust the volume of this feedback to be louder or softer). All envelope parameters, by the way, are created in relative terms - that is, the attack, decay, sustain and release occur in a time domain governed by the duration of the note being played (eighth, quarter, half, whole, etc.).

The Music Editor. Music text is entered through the Music Editor, which displays a palette of musical event options, a musical staff and a status line (part, measure, octave being displayed on staff, mode of entry - note or chord, duration of currently selected musical event. Other messages may appear on the status line from time to time, such as "Out of space"). Music text may be entered by using the light pen (supplied), or paddles (your own), or by direct keyboard command, then transferring it to the proper place on the staff. You may also select the Signature Commands option to get to another palette which contains time and key signatures and clefs, or the Note Modifier option to add diacriticals and dynamic remarks to individual notes, or the Sound Control option to set overall dynamics and tempo.

contd.

The Music Merger. Since the Music Editor will not hold a very long composition, the user must resort frequently to the Music Merger, to concatenate music text files created in the Music Editor. Once this is done, however, the resulting file is too long to be loaded back into the Music Editor, so the wise user will save the parts of the merged file as well as the merged file itself.

The Music Player. After all the work, the Music Player can be used to play back the completed music text file. At the same time, instruments can be assigned temporarily or permanently to the composition.

In summary, the Mountain Music System was a first in many respects, and still represents a powerful synthesizer for the Apple. It had several drawbacks, however, which Mountain Computer never fixed. It could not process triplets or repeats (a feature within the capability of the ALF), it lacked the ability to store long music files, and it did not support keyboard entry of music text (these latter two drawbacks are shared with the ALF).

ALPHA SYNTAURI: The Alpha Syntauri system was created largely to fill in the holes left by the Mountain Music System. The Syntauri uses the Mountain Music System cards, in fact, plus one of its own to support keyboard entry of musical events. It also features live performance mode, and will accept the Synetics Flashcard Ramdisk to store massive music files on-line (about 20 minutes of music). The system also allows triplets and repeats. It is quite versatile, and any number of software products have been introduced to facilitate entry and editing of music, learning to play a keyboard instrument, music theory education, and instrument design and creation. The "basic" system, however, consists of the Mountain Music System boards, the Syntauri keyboard and interface board, and the two software products, METATRAK and ALPHA PLUS.

Metatrak. The Metatrak program has undergone a number of revisions, and many things have changed, but the fundamental operation of the program has remained the same - to assemble a group of ten instruments distributed to sixteen "tracks", and to allow the user both to record and to perform using those instruments and tracks. Each group of 10 instruments is called a "preset master", and preset masters can be freely moved between the synthesizer and disk as the user wishes. As each preset master consists of 10 instruments, each instrument consists of 2 waveforms and 2 envelopes (called "presets" by Syntauri). Once loaded, the preset master can be modified by the user, by replacing either the envelopes or waveforms for any instrument, or by modifying global parameters such as vibrato rate and depth or oscillator offset, or by modifying the envelopes themselves. In Metatrak, this capability is somewhat limited, but in Alpha Plus, considerable modification possibilities are supported. Metatrak permits keyboard splits (assigning different instruments to different areas on the keyboard), ensemble and sequenced ensemble performance, portamento and sustain pedaling, drum machine interfacing and on-the-fly pitch changes. However, the real heart of the program is its track- y-track recording of up to 16 music tracks. After the first instrument is recorded, you can listen to your recording as you lay down succeeding tracks in a sound-on-sound mode. The results can be quite stunning, or abysmal, depending on how well the recording is laid down. Mistakes on one or more recorded tracks can, however, be corrected by either re-recording the entire track, or by "punching in/out" over the mistake. It is also possible, with optional software, to edit the music file itself.

Alpha Plus. Alpha Plus is the other major program that Syntauri uses. It consists of full-featured instrument definition tools which create 2 waveforms and 2 envelopes per instrument. The envelopes consist of 3 and 2 coordinate pairs, respectively. These coordinate pairs differ from those used in the Mountain Music System in that the amplitude coordinate is stated in absolute terms while the time coordinate represents the slope of the line relative to a 256-unit scale. You don't need to know any of this to use the system, so don't worry if it sounds obscure. The waveforms are created in much the same way as they are in the Mountain system, but there is an auxillary program called WAVE, which allows you more precise control over wave building (but is built in a similar fashion). Also included is a waveform analyzer, which will "disassemble" a waveform into its component harmonics.

In summary, the Alpha Syntauri system fills in those gaps mentioned above for the Mountain Music system. It is an active system, which favors the performer over the composer, and some of the Mountain system's precision in envelope control was sacrificed in the Syntauri. In terms of ease of use and length of music files, Syntauri is several strides ahead of ALF and Mountain. The system is intuitive insofar as performance is concerned, and a generous amount of aftermarket support software is available to augment and enhance the system.

APPLIED ENGINEERING SUPER MUSIC SYNTHESIZER: The AE update to the ALF system has added some power to that system, while keeping virtually every other thing unchanged (particularly low-end cost). The system is best described in terms of what is different from the ALF, since the bulk of the system has, in fact, been reviewed in the ALF description, above. The AE system is menu-driven, so that the music editor, album creator and player are invoked from the main menu rather than separately. In lieu of a palette in the music editor, a single picture of a musical event is displayed, which changes as paddle 0 is turned. In the matter of added power, the AE system has 12 voices to ALF's 9, but on the other hand, there is a world of difference in the manuals - the ALF manual is clear and descriptive, while the AE manual is, to say the least, cryptic (unless you are already familiar with ALF's manual, or have an incredible amount of intuitive ability). It would probably be difficult for the novice to grasp what AE fails to tell him or her about the system.

CONCERTWARE +: This music system for the Macintosh contains software only, since the synthesizer is already buried in the bowels of the Mac when you pop the machine out of the box. It allows the user to define instrument waveforms and envelopes, enter music text and play the music on the Mac. The system consists of 3 parts - the Music Writer, the Instrument Definer and the Music Player.

The Music Writer presents the usual staff and palette of musical events. Music insertion is accomplished by select-

contd.

ing an insertion point on the staff, then selecting the event duration and event to be placed in the music file at that point. The currently selected duration remains in effect until a new duration is selected, but the insertion point moves along as you enter events (unless chord mode has been selected, whereupon the insertion point will remain stationary until all notes have been entered or another entry mode (notes or chords) is selected, or the insertion point physically moved. Note pitch itself is also a palette selection, as are accidentals, triplets and dynamics. Key changes, time signatures and tempo changes are selected from a pull-down menu. Repeats are easily accomplished by moving the insertion point to the repeat start, selecting LEFT REPEAT from a menu, then repeating the process at the end of the repeat (RIGHT REPEAT). Editing music text is similar in operation to that of MacWrite text editing. Although facilities for keyboard entry of musical events are provided, using the ubiquitous mouse for this purpose appears to make more sense.

Instrument creating is done in the **Instrument Maker**, which contains facilities for waveform and envelope definition on the same screen. Only one envelope and one waveform per instrument is supported, but defining those is quite simple in Concertware +. Waveforms are made by selecting the harmonics, one at a time, and entering values for them. The resulting waveform can be displayed to the right of the screen. Essentially, envelopes are defined by drawing them. No values are displayed, but a great number of X,Y coordinate pairs can be designated in the drawing process.

The **Music Player** performs the composition, using instruments you have made in the Instrument Maker. Instruments may be switched around in a composition for all four voices, but the Mac pumps out only four voices at a time. The Music Player can also make albums, almost on-the-fly, and can adjust both overall volume and tempo.

In summary, Concertware + enjoys remarkable ease of use and flexibility in defining instruments and entering music text, but lacks some of the punch of the bigger systems. This latter is due, of course, to the constraints of the Mac - not those of Concertware +.

THE FUTURE: The future of music synthesis lies in two areas - more flexibility and power, especially on the Mac, and in the MIDI interface. In brief, MIDI is to music and keyboards as the Christiansen protocol is to data and modems. It allows synthesizers to read music data without regard to which system it was written on. On the former front, computer music will be brought into the lives of the average computer user without the necessity of an outlay of a thousand or more dollars, and with greater punch than ever. On the latter, MIDI will spread the use of computer-assisted music, particularly through professional musicians.

I have recently seen and heard both MIDI and new conventional products, principally implemented on the Mac, and I expect to see a lot of them being offered for sale by the 2nd quarter of calendar 1986. I am anxiously awaiting the latest releases by companies such as McNifty, which will make music come more readily to everyone. Even more importantly, I am waiting to see next year's computer musicians and afficionados create a good part of that music. I've been waiting a long time to see computer music come into its own. To be right in the middle of it is just where I want to be in 1986!

A FINAL NOTE: I have offered to act as a "clearinghouse" to help organize a **MUSIC SIG** and to get it started. Those interested in getting to know tomorrow's computer musicians (and those who are already into computer music) are invited to call me at 490-7484 evenings. That is a Laurel, Maryland number. Daytime calls will be recorded on my little machine, unless I happen not to be on the computer at the time the call comes in. In any event, calls will be returned that evening (if local) or during the day as soon as I can (if long distance).

MUSICWORKS: A Mini-Review
by Tom Warrick

MusicWorks, by Hayden Software, allows you to compose and play simple music on your Macintosh. Although the tunes it can play are pleasing to the ear, severe memory limitations make it unsuitable for the serious musician.

When you enter music, MusicWorks allows two options: composing on a traditional staff by selecting a duration (whole note, half note, and so on down to sixteenth notes) and using the mouse to position the note on the staff, or playing on a piano keyboard by clicking the mouse when the cursor is over the appropriate key so that your notes are "recorded" on a player-piano roll. Unfortunately, the piano keys are arranged vertically, not horizontally, so that writing music in this way is not easy for an amateur piano player. MusicWorks' editing commands are fairly straightforward: you select a note or range of notes by dragging, much like you select a character or range of characters in a word processor, then you select a menu option like "Move up 1" or "Move Down Octave." You can tie notes together and flip a range of notes horizontally or vertically. You can also repeat a selected note or notes.

The worst failing of MusicWorks is its limited memory. You can have no more than 64 measures of 4/4 music, and you can copy, cut or paste no more than 16 measures of 4/4 music at a time. It would be marginally acceptable if you could link files together, but you cannot. Considering the power of the Macintosh, these limitations are almost inexcusable.

When playing music, MusicWorks offers an "Overview" window with a line that moves along on a small player-piano roll simulacrum as the music plays. The Overview window is one of the few things that MusicWorks does better than Concertware+: in MusicWorks you can see the relationship of a greater number of notes to each other than you can in Concertware+. MusicWorks also has a window with control buttons for play, stop, repeat, volume and tempo. Unfortunately, the tempo control is purely analog--it is not possible

contd.

to specify, for example, exactly 60 beats per minute.

MusicWorks' instrument selection is quite limited: kazoo, flute, organ, trumpet, chime, piano, and two synthesizers, one a sine wave and the other a square wave. You can redraw the synthesizer wave forms using freehand, which is not as accurate as having them calculated mathematically the way Concertware+ can. Many of MusicWorks' instruments sound better to the ear than those in Concertware+, and for this reason many pieces will actually sound better on MusicWorks than on Concertware+.

Many people use their music programs not to compose music but to play pre-recorded selections. For this reason, the number of available pre-recorded selections is important when choosing a music program. MusicWorks comes with 45 pre-recorded pieces, some of which are just demos (Three Blind Mice), but others of which are quite good. In particular, listen to the Russian Dance from Tchaikovsky's "Nutcracker Suite" and the exerpt from Vivaldi's "Four Seasons." Some of the music has been entered from corrupted scores, such as the excerpt from Mozart's 40th Symphony. When you have played all of those selections, try out SigMac Disk 18, which contains a great number of MusicWorks selections, including the MusicWorks virtuoso piece "Bumble Boogie," a "Hooked on Classics" variation of Rimsky-Korsakov's "Flight of the Bumblebee."

If you are going to buy only one music program, you must decide whether MusicWorks' limitations are outweighed by its slightly better sound. My recommendation is that you don't buy MusicWorks but rather get Concertware+ version 3.0. and learn to live with its unique set of limitations, such as unauthentic-sounding strings. On the other hand, if you can't get enough computer music, MusicWorks is not very expensive (less than $45 from discount mail order houses) and may be worth adding to your music collection.

NOTE ON PEARCE'S MODIFICATION TO FORTH FP

by Chester H. Page

I was pleased to read Steve Pearce's excellent article (September 1985 WAP Journal), improving my routine for using Applesoft to supply floating-point arithmetic, but would like to make his routine more elegant.

Disassembling the NEXT routine at $848 shows that it loads the Y-register, then the A-register, then a pointer at $F1/F2, so that none of these needs to be saved. Only the X-register needs to be saved before calling the $ED2E subroutine. The corresponding assembly code is:

```
STX   $0
LDA   #1
STA   $F1
JSR   $ED2E
LDX   $0
JMP   $848
```

giving the minimum forth definition:

```
CREATE FAC. 0086 , 01A9 , F185 , 2E20 , A6ED ,
                  4C00 , 0848 , SMUDGE.
```

For some reason, this change, in conjunction with the substitution of FINTERPRET for INTERPRET (screen #5), causes the text interpreter to become confused when the loading of screens 1-8 is finished. The computer hops into Applesoft and reports ?ILLEGAL QUANTITY ERROR. RESET gives a warm restart in Forth. This annoyance can be avoided by replacing DECIMAL on screen #8 with 805 CALL, so that a warm start is made automatically at the end of loading the screens.

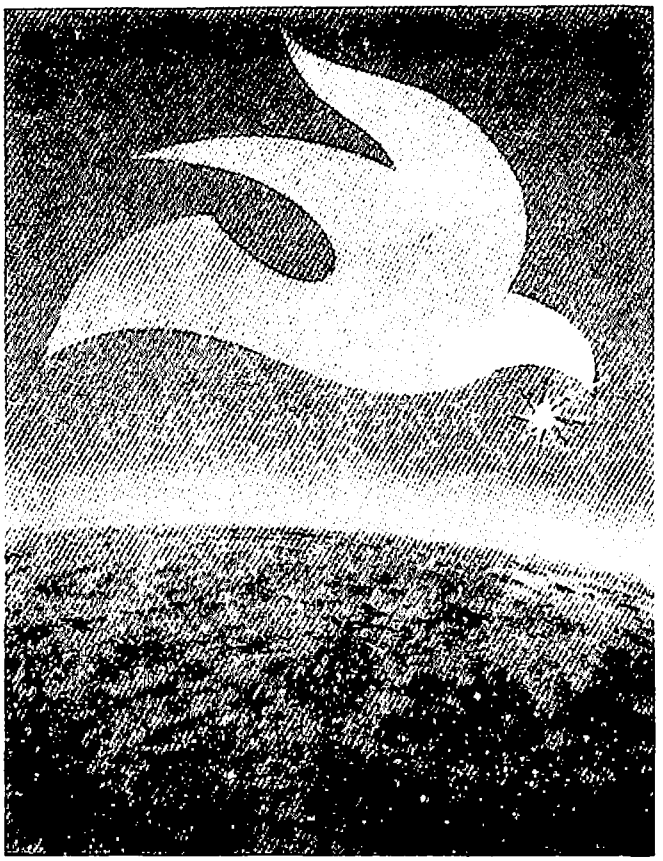
Double Precision Forth contd. from pg 41

```
089D: 95 09      93      STA  9,X
089F: B5 06      94      LDA  6,X
08A1: 95 0A      95      STA  10,X
08A3: B5 07      96      LDA  7,X
08A5: 95 0B      97      STA  11,X
08A7: A5 00      98      LDA  B
08A9: 95 02      99      STA  2,X
08AB:A5 01       100     LDA  B+1
08AD:95 03       101     STA  3,X
08AF: A5 02      102     LDA  B+2
08B1: 95 00      103     STA  0,X
08B3: A5 03      104     LDA  B+3
08B5: 95 01      105     STA  1,X
08B7: A5 04      106     LDA  B+4
08B9: 95 06      107     STA  6,X
08BB:A5 05       108     LDA  B+5
08BD:95 07       109     STA  7,X
08BF: A5 06      110     LDA  B+6
08C1: 95 04      111     STA  4,X
08C3: A5 07      112     LDA  B+7
08C5: 95 05      113     STA  5,X
08C7: 4C 48 08   114     JMP  NEXT
```

Views & Reviews contd. from pg 32

In addition to the above, there are numerous other useful TOOLBOX routines in this package, including several ways of selectively clearing the screen, controlling the mouse, text case conversions, screen dump, keyboard control, screen border control, memory dump, memory disassembly and speaker tone control. As usual, the VIDEO TOOLBOX manual reflects RW Publishing's concern with thorough explanation, both in theory and in application, coupled with a "hands-on" approach to learning to use the product. This is an appropriate style for this type of package, with its application to your own BASIC programs. A Quick-Reference section contains page references to each routine description, in addition to a brief summary of the routine. Like other TOOLBOX products, the VIDEO TOOLBOX is not copy-protected. At $39.95, anyone who would steal this program would have to be a creep.

SUMMARY: A value-packed product which is bound to find increasing usage by anyone who wants to write his or her own BASIC programs. Another winner.



Peace on Earth

FREDERICK APPLE CORE

A SLICE OF THE WASHINGTON APPLE PI

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Vice President	- Tony Svajlenka
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Newsletter Chairman	- Lynn R. Trusal
Newsletter Editor	- Kathy Kenyon
SIG MAC Chairman	- Lynn R. Trusal

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

Upcoming Programs

January 9, 1986 - Program to be announced

HOTLINE MEMBERS

Lynn R. Trusal	- (301) 845-2651
Randy Pasley	- (301) 695-9416
Kurt Holter	- (301) 663-4199
Bruce Taylor	- (301) 371-8181

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

The SIG MAC of the Frederick Apple Core meets on the fourth Tuesday of each month in the same location and at the same time. MAC owners in the local area are welcome. Call Lynn R. Trusal at (301) 845-2681 for details.

SIG MAC Upcoming Programs

January 28 - Demo of MacDraft

February 25 - Demo of Plotter Drivers

MACDRAFT FOR THE MACINTOSH

by Lynn R. Trusal (Frederick Apple Core)

For those of you who are frustrated artists or architects, you have probably tried your hand at MacPaint and, although you marveled at its capabilities, you wished for more. Then you may have purchased MacDraw and discovered the wonderful capabilities of this Apple program but still longed for additional capabilities. Wait no longer. "Son of MacDraw" has arrived and it's called MacDraft.

MacDraft is produced by IDD, Inc. (Innovative Data Design) of Concord, CA (415) 680-6818, and retails for $239 ($195 wholesale). The program comes with one disk and requires a 512K Macintosh. I received a second free update of the program once I returned the warranty card. The instruction manual is 280 pages, large by Macintosh standards, but very well done. If you didn't know who made the program, from its layout, you might think that it was Apple. All in all, it is one of the best user-manuals that I've seen.

If you already know how to use MacDraw, then learning MacDraft will be a snap. I think one of the best aspects of the Macintosh is the ability to learn a software program without reading the manual. It almost becomes a challenge and you can learn most of the features of both MacDraw or MacDraft with only occasional references to the user manual. Since MacDraft is very similar to MacDraw, I will emphasize those unique features of MacDraft that set it apart.

Once you open MacDraft from the desktop, you are presented with a layout very similar to MacDraw. Tools are located along the left edge of the screen but include three additional icons not present with MacDraw. The menu bars across the top are also similar, except MacDraft includes a "view" menu and deletes the "pen" menu found in MacDraw. Most menus are the same in both programs, with some differences in the commands that can be accessed from the keyboard.

One major difference between the two programs is the way MacDraft handles layout and magnification of images. While MacDraw has "normal size", "reduce to fit", "reduce", and "enlarge" menu selections, MacDraft uses a "zoom" technique to zoom in and out up to 8 times in both directions. Once selected, this zoom feature allows you to position a rectangle over that portion of the screen you want to zoom in or out. Clicking the mouse button then activates the zoom feature. After using this option, I preferred it to MacDraw's method. It is also easier to "fine tune" your drawing with the zoom-in option.

Another MacDraft option, not found in MacDraw, is the ability to add automatic dimension lines. With this feature, dimension lines are drawn between user-defined starting and stopping points, and size measurements are automatically added based on the scale of the drawing. The scaling options of MacDraft are also extensive. The program offers 16 different "feet" and "inch" scales and 12 metric scales. Once a drawing has been created at one scale, it can be automatically

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rescaled by selection of one of these options. In this same regard, up to four individual drawings can be displayed on the screen at the same time, with each one at a different scale. If you "cut and paste" from one window into another window at a different scale, the pasted object is rescaled to fit the new window.

Another unique feature of MacDraft is it's ability to rotate individual or grouped objects in increments as little as one degree. Individual objects may be rotated about their own centers or grouped objects about the center of the group. This is particularly useful if you use MacDraft to make floor plans where furniture does not always fit in a room at 90-degree angles. Text may also be rotated, but only in 90-degree increments.

Other features not present in MacDraw include a continuous drawing mode, more line and fill patterns, an ability to position objects along a line, an abiltiy to draw arcs by radius or 3 point, and an ability to draw circles by radius or diameter.

Other minor differences exist but these are the most important ones. Since I was already familar with MacDraw, I found MacDraft very easy to use. If you have a need for an object-oriented drawing program, you will be suitably impressed by MacDraft. If you do not already have MacDraw, I would recommend getting MacDraft instead. Not only does it give you all the MacDraw features, but offers many addtional ones.

ADDITIONAL INFORMATION ON MACINTOSH PLOTTING PROGRAMS

MacDraft is largely compatible with both MacPlots II (Computer Shoppe Inc., Greensboro, N.C., November WAP Newsletter, p. 64) and MacPlot (Microspot, Kent, England). In the November Newsletter, I discussed the fact that MacPlots II caused "open" circles or squares, marking data points, to become "filled" when pasted into MacPlots II. This was a major problem with line graphs originally created in Chart.

I then tested MacDraft to see if this also occurred . When I pasted a Chart graph into MacDraft, the "open" circles stayed "open" on the Macintosh screen but when the graph was actually plotted by MacPlots II, "open" circles were plotted as "closed" circles. This is evidently a problem with the MacPlots II (Computer Shoppe) program.

One of the spokespersons for MacDraft told me that this was not a problem with the MacPlot program (Microspot) but other minor features of the program did not behave properly when plotted with MacPlot. This is also true with MacPlots II. I hope I have not confused you with two similar sounding programs.

The literature for MacPlot says that it has two plotting modes. In the "transparent" mode, all parts of objects are plotted, even if they are obscured by objects in front. In the "opaque" mode, which requires at least a 512K Macintosh, only the top object is plotted in an overlapping area. This was one feature not supported by MacPlots II. I don't know if this feature will solve the "closed circle" problem, but I hope to be able to test out Microspot's MacPlot program in the future and will make it the subject of a future review.

ADDITIONAL INFORMATION ON THE ADC 300/1200 BAUD MODEM

I have received the ADC 300/1200 baud modem from DAK, Industries, that I discussed in the December issue of the WAP Journal. I have used it about 1 week and, although I do not have extensive hands-on experience, I wanted to report some additional information since I don't know how long the offer will be available.

The modem comes in an ADC-manufactured carton and includes the modem, 1 telephone cable with modular jacks, a warranty card, and a 43-page manual. I plugged it in and used an existing cable that I had prepared previously for the RS-232C/DB-9 connection. The back of the modem has a speaker volume control, an "on/off" switch, an RS-232C female connector, and two modular phone plug connectors. One connector is used for the phone line connection to the modem and the other is for connecting a separate telephone.

There are instructions for internally testing out the modem and notes on configurations with various telecommnication programs for Apple or IBM. The front of the modem has the same 8 status lights that the Hayes modem has. These include, HS, AA, CD, OH, RD, TD, TR, and MR. In addition, there is an internal "help directory" that includes a "directory, major commands, extended commands, and secondary commands".

Although I have never used a Hayes-type modem, I found dialing a local bulletin board to be very easy. You type "AT" to get the "attention" of the modem followed by "D" for "dial". The modem first tries to dial by touch-tone but automatically switches to "pulse (rotary)-tone" if you do not have "touch-tone" service. This is followed by the phone number and a "CR". After the BBS answered, the "HS" light was lit indicating 1200 baud. At this point you are in "terminal communication" mode and you may begin to log on to the BBS or other service. If the phone number is busy, the modem will redial every 30 seconds unless you override this feature by dip-switch or internal ROM commands. Can you imagine hundreds of modems automatically redialing CompuServe every 30 seconds trying to get a connection?

Another nice feature is the ability to automatically switch the baud rate. The ADC modem will automatically adjust the baud rate to match the incoming call or it will make calls and send data at the speed (300/1200) you selected with your telecommunication program. You may also use "buffered communications" so that the modem works with your computer at 1200 baud while working at 300 baud over the phone line. The modem will also automatically answer the phone after a specified number of rings if instructed to do so.

The ADC Modem also features a built-in clock and date function that can easily be set in the telecommunications program. This remains current as long as the modem is not turned off.

There are 10 dip switches on the bottom of the modem which allow hardware configurations of such features as automatic answering, auto re-dial, etc. All of these swithces may be re-configured by software commands while in the telecommunications program.

Appendix D in the manual discusses Hayes compatibility. The manual explains that the ADC modem has been designed to be compatible with the Hayes SmartModem but that

contd.

compatibility is not 100%, since the ADC modem offers features not found on the Hayes modem. Basically, the modem has been designed to look the same as the Hayes to the many terminal communications programs on the market. The manual says, "As long as you or a terminal program control the modem only through the commands and registers documented in the Hayes manual, then the ADC modem should work the same way." All of the ways the ADC modem appears to differ from the Hayes modem seem to favor the ADC modem. I cannot attest to its use in all situations or with all telecommunications progams. I have only used it with Red Ryder and it functioned flawlessly.

For those of you who are technically oriented, I will end by listing the technical specifications of the ADC 300/1200 baud modem. Communications specifications - 300/1200 baud, serial asynchronous binary, 7/8 data bts, 1/2 stop bits, off/even/no parity, full/half duplex, and rotary/touch-tone dialing. Control - 40 character command buffer, D.C. Hayes SmartModem 1200 compatible, audio monitor, numeric or english result codes, check and set 16 operating parameters, help menu and command list, clock set, display date and time. Hardware - multiple microprocessors, Bell 103/212A compatible, 2" speaker with volume control, internal power supply with 3-prong grounded cable, and 9.9 x 5.5 x 1.8".

Although this is not a thorough review, I wanted to give you some additional information that I was not able to discuss in the last article. As I concluded in that article, with a price of $175 and a 30-day free trial, what do you have to lose?

MAKING SENSE OF MACINTOSH RAM UPGRADES

by Lynn R. Trusal (Frederick Apple Core)

There are so many companies out there just dying to increase the RAM memory of your Macintosh that it is hard to sort things out. The newest issue of the Macintosh Buyers Guide (Fall 1985, Redgate Publications) lists nine companies that provide from 128K up to 4 Megabytes RAM upgrades. This and information from MacWorld, InfoWorld, A+ and other sources are listed below with list prices. The prices may not be current due to rapid changes in such upgrades, so contact the company for the latest upgrades, prices and local dealers.

	Upgraded To:	Upgraded From: 128 K	512 K
MACohm Projects	512 K	$349	
129 N. Randolph	512 K (kits avail.)	?	
Macomb, IL 61455			
800-851-2753			
Micah	1 Megabyte	$849	$549
15 Princess St.	ROM enhancement	$149	
Sausalito, CA 94965			
415-331-6422			
MacMemory Inc.	512 K	$249	
473Macara Ave, #701	1.5 Megabytes	$795	$645
Sunnyvale, CA 94086	1.5 Megabytes (kit)	$595	$525
415-964-4176	ROM upgrade	$99	
MicroGraphic Images	1 Megabyte kit	$995	
7334 Topanga Cyn., #115			
Canoga Park, CA 91303			
818-992-1190			
Centa Systems	512 K	$350	
5308 Derry Ave, Suite C	1 Megabyte	?	
Agoura, CA 91301	1.5 Megabytes	?	
818-889-6246	2 Megabytes	$1095	
MicroConversions	512 K	$299	
3606 Crest Drive	1 Megabyte	$898	$599
Arlington, TX 76014	2 Megabytes	$999	?
800-237-8622	4 Megabytes	$2099?	?
Masstech Dev. Labs, Inc.	512 K	$349	
773 Boston Rd.	1 Megabyte	$799	$699
Groton, MA 01450	1.5 Megabyte	$949	$849
800-447-1215	2 Megabytes	$1099	$999
Future Vest	512 K	$369	
542 W. 112th St., Suite 6F			
New York, N.Y. 10025			
212-222-1607			
Beck Tech	1 Megabyte	$849	$549
41 Tunnel Road	2 Megabytes	?	
Berkeley, CA 94705	4 Megabytes	?	
415-548-4054	ROM enhancement	$149	
VOAD Systems	512 K	$275	
3304 Pico Blvd.	1 Megabyte	$829	
Santa Monica, CA 90405	1.5 Megabytes	$904	
213-450-2929	2 Megabytes	$974	
Mac Doctor Electronics	512 K	$173	
401 Lytton Ave	512 K (kit)	$91	
Palto Alto, CA 94301			
415-321-3358			
Levco	2 Megabytes	$1100	$900
6160 Lusk Blvd., Suite C-203			
San Diego, CA			
619-457-2011			

I have shown suggested retail prices for each company as listed in various publications or from my recent phone conversations with the companies. These prices are changing

contd.

(going down) daily so they will not be current when this is published. In general, upgrades from 128K to 512K cost approximately $200 to $300; one megabyte upgrades range from $600 to $800; 1.5 megabytes from $800 to $1000; 2 megabytes from $900 to $1100; and 4 megabytes from $1100 to $2100.

Because not all RAM upgrades are created equal, it is important to be sure that you are comparing "apples to apples" when dealing with so many companies. Some include ROM upgrades in the price and others charge extra. Most have included increased power supplies on the "sister" boards when they are required, but some (VOAD) do not and say that they are not needed. I would be leery of this claim, and someone more knowledgeable than I needs to answer that question.

Most 512K upgrades involve swapping the motherboard for a new motherboard that has the 64K chips removed and 256K chips either soldered into the old sockets or unsoldered and mounted in new sockets. There are still companies selling do-it-yourself kits complete with tools, instructions, and memory chips. This method should only be tried by those willing to take the risk. Since Apple has just decreased the cost of an Apple 512K upgrade to $495 list price and wholesale dealers are offering it for about $336, is it worth the chance on a do-it-yourself kit from third party dealers to save $100?

The larger memory upgrades usually consist of so called "sister", "piggy-back" or "mother-in-law" board that clip to the "mother" board and electrically attach by means of a ribbon cable. Some of these "clip-on" boards remove the 68000 CPU from the original motherboard and put in on the new "sister" board and others use it in place. Some upgrades do not use the original resident memory on the 128 K motherboard and others require that it be upgraded to 512 K first before it can be used.

In addition, some upgrades include fans mounted inside the case and others say that they use so little wattage that fans are not needed (Stephen Jobs, "Is that you talking"?). At least one manufacturer (MacMemory, Inc.) is tentatively claiming that their memory expansion board "is pin-compatible with soon-to-be-released megabyte chips and address-decoded for 4 megabytes of memory." The company will not warrant this but is currently testing the compatibility. If possible, this would enable increasing the Macintosh RAM to the maximum 4 megabytes without adding board on top of board.

The lesson in all of this is to be sure of what you are buying and to do some comparison shopping before you leap with your hard-earned dollars. Remember that, with the advent of Switcher and programs that require a 512K MAC, that 512K of memory is not that much memory any more. If you have not already made the128K to 512K leap, you may want to go to 1, 1.5, or 2 megabytes. The cost of a 2-megabyte upgrade is now less than Apple was originally charging for the 512K upgrade alone.

Many of the companies offering such upgrades sound like "mom and pop" operations and are currently in the process of setting up dealer networks across the country. Even with clip-on boards, such upgrades are not for the average person to attempt himself. The cost of these upgrades is rapidly coming down due to decreased cost of 256K chips and good old free enterprise and competition. It may pay to wait just a little longer to see what shakeout occurs in the Macintosh RAM upgrade market.

Did you happen to notice how many of these companies are located in California. There must be a lot of "loose chips" floating around out there. Make sure that you don't get sold an upgrade consisting of 256K DCC Chips ("Dynamic Cow Chips").

Softviews
David Morganstein

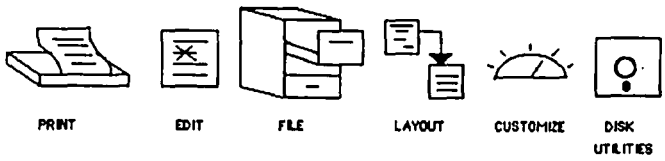
Before launching into a review of Homeword on the Apple // and Statfast for the Macintosh, let me provide an update on the use of the Hewlett Packard Laserprinter with the Mac. The LaserStart print utility by Softstyle has one severe limitation. You can not use the Choose Printer desk accessory to select between Imagewriter and Laserprinter output. You need two sets of disks, ones with regular System files and Imagewriter printer resources and a second set with the modified System and LaserStart printer resource. Another point to keep in mind is that the HP with 60K of RAM can not always handle the quantity of data being sent by the Mac and frequently prints a partial image. I have not had this "partial print" problem when using the newer HP plus which contains 500K of RAM.

In upcoming reviews, you will read about: Helix, a new version of NWA Statpak which uses pull-down menus, NCSS (formerly known as Number Cruncher), Homeword Filer and Systat (an exceptionally powerful statistical package).

Homeword (Sierra On-Line). While this was the first word processor for the Apple // to use icons, it does not allow the use of the Mouse for text entry and selection. It carries a low price tag and offers many valuable features. The program is both easy to learn and to use. It works with standard DOS 3.3 text files allowing you to use spelling checker programs.

The program presents two types of screens to the user. The first contains icons along the bottom displayed as a graphical menu. You choose an option by hitting the left or right arrow key which moves a box surrounding an icon. The return key tells Homeword to act on your selection. The second screen is for editing text and has a format similar to Screenwriter II, another Sierra product. Text appears at the top and useful command information at the bottom. The text area allows 15 lines of 40 characters. The bottom left indicates the physical page number containing the text, the amount of computer memory space remaining (Homeword only handles documents which fit entirely in memory) and the amount of space remaining on the disk. I was limited to a maximum of twenty pages per document in a 128K machine; although, larger documents can be printed by chaining them together at print time. At the bottom right of this screen is a novel and useful display: a small high resolution image (about 2 inches square) of the physical page containing the text shown above it. It is the closest thing I have seen to a full sixty line display on a microcomputer. The image contains only dots, not letters, but gives you a good idea of the final appearance of that page.

The main menu selections are icons indicating functions like text printing, entry to the edit mode, storage and retrieval of a document, or the layout menu for changing the text format. The layout options include setting margins and line spacing, forcing page breaks and setting text justification.



HOMEWORD MAIN MENU ICONS

Customize provides access to information about the number of disk drives you have, the type of printer card you use and the setting of pre-set margins. The disk utilities icon is selected when you want to initialize a disk, erase a document, see a catalog of a disk or go to other Sierra programs which link to the word processor files.

Documentation. It comes with a cassette and tutorial which will help you get started. The manual is brief, 65-pages, but adequate. Most of what you need to know you can figure out from the screens, aided by the manual.

Limitations. A few features which Homeword does not provide: form letters, 80-column display (it does allow for a 70 column hires display prior to printing but this is for previewing only and is not available for edit operations), macros for ease of multi-keystroke entries, footnotes or index construction. Unfortunately, the diskette is copy-protected and no back-up disk is included. A back-up can be purchased for $10.00. Sierra does not provide an 800 telephone number to answer questions.

For owners of earlier versions, Homeword has added a number of new features. A typewriter mode allows you to print directly what you type on the keyboard without having to save a file and run the print routine. Specific pages can be printed allowing you to obtain a hardcopy of only those pages that you have changed since your last printing. In previous versions, files could be "included" at print time, only if they were on your data disk. If you have a two drive system, you can use the D1 or D2 symbols with filenames to indicate on which drives the included files are found.

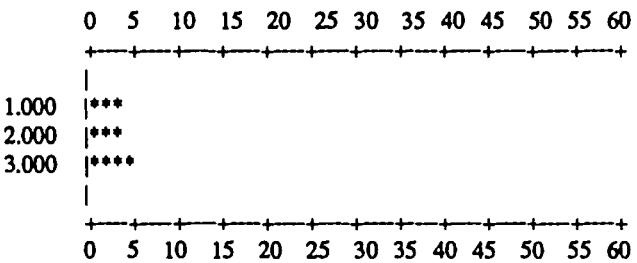
Homeword's greatest virtues are that it is easy to learn and use. The small high resolution display of the entire page is novel and very useful. The program provides most of what you would expect in a low-cost word processor. Sierra On-Line, Coursegold, CA. 93614. Price $69.95

Statfast, Version 1.0. The advertisement for Statfast, a statistical package for the Macintosh, implies it has great speed. Written in compiled Fortran, Statfast does run fairly quickly. It provides the most commonly needed analyses, such as descriptive statistics, multiple regression, up to a 3-way analysis of variance and two-way contingency tables.

contd.

Although the manual includes a one-page description of "Non-parametrics", these are limited to a Chi-square analyses of a 2X2 contingency table and a goodness-of-fit test. There are at least six other procedures, found in competing products, which should be part of any non-parametrics module. The descriptive statistics routines require that the data fit in memory and are limited to 3,000 data points (the number of variables times the number of cases). On the other hand, the regression and ANOVA modules read the data from the disk and are limited only by disk space.

Disappointingly, Statfast is not very "Mac-like". It has no pull-down menus and no data window with editing capabilities. It does not support the clipboard or scrapbook. As you can see below, its graphics are of the text variety. They are composed of printed characters, such as "-" and "+" rather than high resolution graphics. Statfast provides for two-variable scatterplots and univariate bargraphs. As you can see from the graph, Statfast variables are identified only by number; no descriptive alphanumeric labels are permitted.



Statfast Bar Graph

The program does allow you to direct program output into a text file. Subsequently, this file can be edited, using any standard text editor, and portions merged with other docu- ments. The Statfast developers thoughtfully provided this option to permit the user to merge the results of their analysis with a report or other text document. Statfast allows you to supply a title and missing data codes for each analysis. In addition, when running analyses which hold the entire data set in memory you can select cases meeting certain conditions. Unfortunately, every time you run these analyses, you must answer the same three questions regarding these options. It would be easier on the user if the options could be turned on and off from the main menu rather than be a part of every use of the procedures.

I found the manual to be exceedingly brief and not complete. While it does explain how to use the program, it did not document the Statfast file format. Lack of this information made it difficult to convert an existing data file into the Statfast format, an especially important omission since Statfast does not support the clipboard for importing data. (Using a separate Edit program, I was able to examine the example data set on the Statfast disk, and thereby obtain the necessary formatting information.) The manual appears to have been assembled hastily since it contained a number of spelling errors, such as "scattergarm", "scattergam" (on page 52) and "regession" (on page 57). While it does contain a table of contents, it lacks an index. Although it contains 79 pages, many of the pages consist of only one or two sentences and a lot of white space.

I was distressed by Statfast's error handling. When I asked to read a file that wasn't there, I was kicked out of the program and thrown rudely back to the Finder. I received the same treatment when I ran a test data set through the multiple regression option. The data set I was trying to read was on a volume other than the start-up disk. I used the correct name, "Hard disk:LongleyData", but Statfast was unable to find it. It simply kicked me out of the program.

I have recently seen advertisements for a version 2.0 which appears to use pull-down menus. While I have not received notice from them of an up-date, I will try to get a look at the new version and report on the changes. Statsoft, 2831 East 10th St., Suite 3, Tulsa, OK 74104. (918) 583-4149. Price $99.00.

Plot-It. Interested in using a plotter to obtain higher quality graphics on your Mac? If you have read two reviews by Lynn Trusal (Plot-It, July and MacPlots II, November 1985) you have come to realize that a special program is needed to do this. In this note, I wanted to add to Lynn's July review of Plot-It. This program only works on MacPaint images. If you have created a MacDrawing, a MacProject display, an MS Chart image or any other graphic, you must use the clipboard to paste it into MacPaint first. During this process, you will lose valuable resolution and have relatively smooth lines turn into ugly stairsteps! Second, although Plot-It permits the selection of various pen colors, the system is extremely difficult to use. You are restricted to selecting a rectangular area of your MacPainting to be plotted in a specific color. Since the entire image appears as a fairly small "Show Page"-like display, it is virtually impossible to accurately surround an area with a rectangle to select it for printing in a specific color. I tried to print each bar of a histogram in a different color. When I was done with the bars, I couldn't figure out how to draw the axes in black since I could not select the axes and labels using a rectangle without selecting areas that had already been drawn! Each color must be plotted one at a time, so you have to sit patiently with the plotter as it moves through its traces. I am waiting for my order of MacPlots II, wishing I had read Lynn's review of it before I invested in Plot-It...

SIGMAC NEWS
by Brooks Leffler

Mac Section

The December meeting was mostly about change. Change of leadership, change of venue and meeting schedule, changes coming from Apple, the latter as seen through the eyes of Cary Lu, covered in a separate article.

Steve Hunt has resigned as SIG Chairman due to a business reassignment which will take him to Dayton, Ohio, at least half time. Vice Chairman Don Landing was elected by acclamation to replace him.

To make more economical use of member time and meeting facilities, as well as to foster warm feelings of togetherness with the rest of WAP, SigMac will return to meeting the same day as the mother club, but with a schedule staggered so as to provide the best of all worlds for everybody. More on that elsewhere in this issue.

Not counting a possible surprise visit from someone at Apple sometime soon, upcoming meeting topics should include:

- January: Desktop publishing
- February: Tax preparation on the Mac
- March: The Dvorak keyboard with Virginia Russell
- April: The hierarchical file system (hfs) for hard disks

Programmers meetings upcoming at Our Lady of Lourdes:

- January: C for the Mac.
- February: Jay Heller will talk on the 68020 chip

MacWorld Expo to be held in San Francisco January 16-18 is now called Appleworld Expo and will include the whole family (wonder what that implies about the show's sponsorship?) Contact Tom Warrick if you want to go; group arrangements may be possible.

THE MACINTOSH: How's It Doing; Where's It Going
From a Presentation to WAP SigMac by Cary Lu, December 7, 1985
Reported by Brooks Leffler

Cary Lu is microcomputer editor for *High Technology Magazine* and author of *The Apple Macintosh Book*, now out in 2nd edition. Cary has several IBMs as well as a Mac for his personal use, and professes allegiance to no one computer, preferring to pursue interesting and useful technology wherever it may be found.

Big companies will never buy Apple. IBM has too much inertia.

Excel may be the last major product for the Macintosh for some time.

The upgrade to be announced in January will make every Mac hard disk drive now available obsolete.

These are some of the provocative/intriguing/depressing statements (depending on your point of view) made by one of the Mac's outstanding biographers in a presentation to SigMac at the December meeting.

His presentation focused on three main topics: trends in micro performance and cost thereof, micro business trends & specifically Mac, and Apple's January product announcements

This report will cover only the last two parts due to the limits of space. What follows is an edited version of my notes of Cary Lu's remarks.

The microcomputer business reached its zenith in 1983-84. At that time, venture capital was widely available, and software development was booming: there were, for example, more than 200 different word processing packages for the IBM-PC.

That environment is no more. Equipment sales have been soft for months, and there are just too many software products now for the big hit that everybody's shooting for, the *1-2-3* of today.

And with only 350 thousand Macs in use, vs 4 million IBM-PCs, software companies are reluctant to spend their time developing products for the Macintosh. Software development for the Mac has slowed to a crawl except for a few accounting and statistics packages. Improvements of existing software will come slowly. ***Excel*** may be the last major product for some time.

Software producers have been hurt by software piracy, with small companies hurt worst. Their sales volume is simply not large enough to absorb the loss in unrealized sales and still meet costs of expanding staff and advertising. Mac software has suffered more from piracy than that for the PC, primarily because a popular misconception is that any beta software may be freely shared, thanks in part to Apple's policy of distributing trial versions of such things as ***MacWrite*** and ***Switcher.***

Shareware has not paid its creators nearly as well as it should have: don't expect much more to be offered.

As to the future market potential for the Mac, most large agencies and organizations won't buy Apple products, says Cary; they'll continue to buy IBM because of its solid, safe, conservative history. Further, several software products which started on the Mac and made it unique will be adapted for the PC. For example, software is coming next year which will read MacPaint files and Mac fonts, and will drive a Laserwriter. Running Mac-like software on a PC, said Cary, is like driving a 1950 Buick with Powerglide: "It works, but it's a bit slushy".

Conversely, IBM has one major design advantage over the Mac: the hard disk drive in the AT is truly fast. In Cary's opinion, the most important single mistake Apple made in Mac design is its inability to run a hard disk satisfactorily. ("Anyone who uses more than one program should have his

contd. on pg 65

MacNovice Column

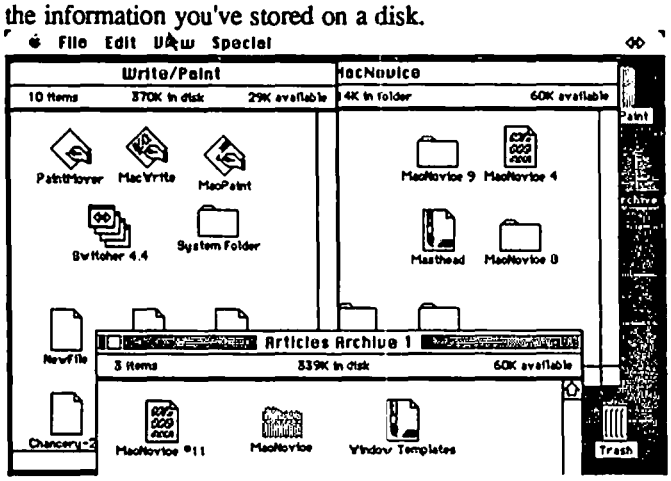
by Ralph J. Begleiter

Manage Your Desk Mess!

One of the unusual features of your Macintosh is its attempt to make the computer screen resemble your desktop. That's what the Apple people refer to as the "desktop metaphor" they created for the Lisa and Mac computers. The theory is: the desktop metaphor will make new computer users feel "comfortable" in front of their screens...comfortable with familiar ways of organizing desktop tools such as documents, erasers, trash containers and file folders.

Well, if you've had your Mac awhile, you're already becoming "comfortable" with your electronic desktop. In fact, it's probably about as "comfortable" (read that "as messy") as your real desk! You may already be having a hard time finding the documents you need quickly, and finding the tools (computer programs) you need to work with.

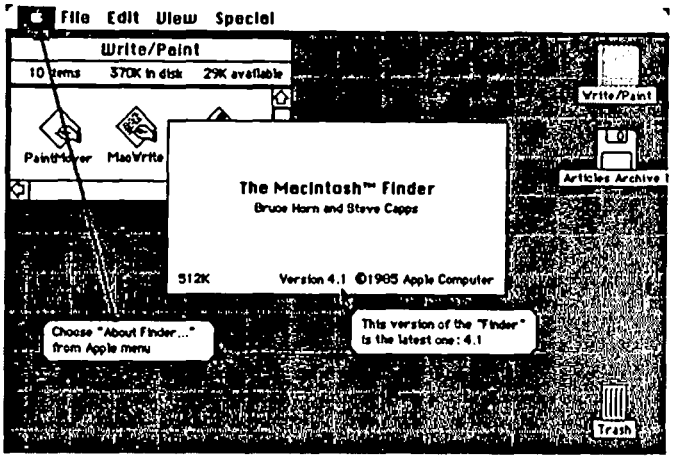
It's worth taking some time to familiarize yourself with the Mac's desktop and how to use it to your own advantage. The Macintosh "tool" (or "application" program) which makes the desktop appear is called the "Finder." That's because it allows the computer to quickly find, identify and call into use the information you've stored on a disk.



The "Finder" is a program you can usually find inside the "System Folder" on a disk. If you've tried to "open" the "Finder," you've already discovered that you can't. It is openable, but only with special electronic tools. Anyway, you don't need to open it...just to know it's there.

Apple has released several versions of the "Finder," but the one you're working with is either version 1.1 or 4.1. As you'll see in a minute, it makes a difference which "Finder" you're using. You can tell which "Finder" you have by checking the "About Finder" command under the Apple menu when you're looking at the desktop:

"Finder" 4.1 was released for free last Spring by Apple. (If you bought your Mac before then, there's been no official notification from Apple about the new "Finder"...nor has Apple made any effort to help users discover its availability or its usefulness. There are no written instructions available for the new "Finder", for instance.)



By now, "Finder" 4.1 has become the standard. If you're still using "Finder" 1.1g, you should see your Apple dealer for a free "upgrade", or contact a friend or member of WAP who can copy it for you legally for free. It's worth the trouble because it'll help you work more efficiently with your Mac... and even has some "speed" features which make the Mac itself work faster. (For instance, the new "Finder" contains a com mand called "Shut Down" which automatically and quickly ejects all disks and restarts the Mac with one mouseclick ...eliminating the need to separately eject disks and restart.)

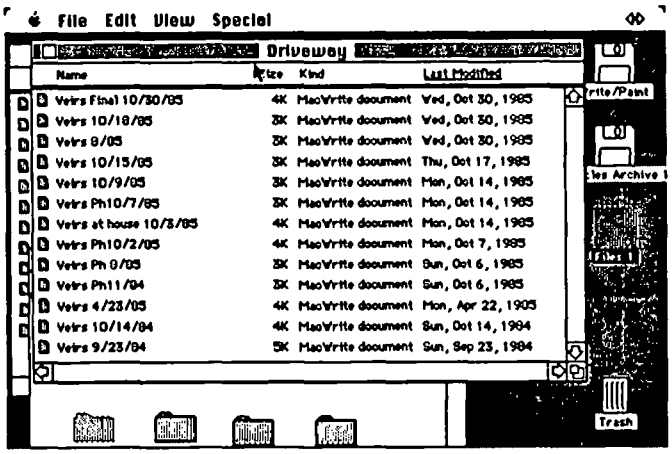
But back to your messy desk.

The fact that the Macintosh system uses icons instead of words to symbolize documents and programs made it unique among computers. The icons make a desktop easy to arrange, because you can move items around to suit your organizational style. You can keep MacWrite documents together in one place, and MacPaint pictures in another. Or, you can group together MacWrite and MacPaint documents which are related, placing them into a single file folder.

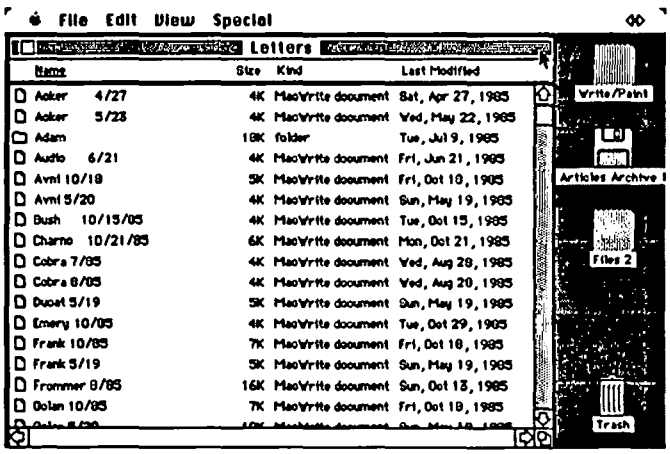
But icons can occasionally get in the way of quick identification of your documents. For example, suppose you have a file folder full of letters to one individual or corporation. You know they're all "letters." You know they're all letters to the same person. In fact, the only really useful way to distinguish among them (and find the one you want quickly) is to check the date on which you wrote the document.

Here's where the "Finder" comes in handy. Instead of displaying all those letters on your screen as icons of MacWrite documents...try displaying them by date in their file folder window! Go to the "View" menu and select "by date". Your letter icons will be instantly replaced by miniature document icons in a vertical list arranged in order of the date they were created! Now it's easy to find the letter you're looking for...just as you would in a "real" file folder.•

contd.

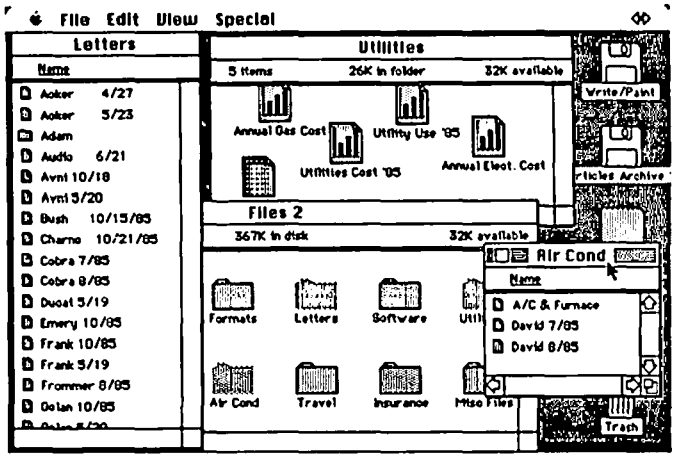


Take another common situation. You have a subject folder. Let's say it's a folder containing all your "personal" correspondence - letters to friends. In this case, filing the letters by date isn't nearly as helpful. The best way to find the one you're looking for is by the name you gave the document when you wrote it. For this folder, choose "by name" from the "View" menu, and the "Finder" will automatically give you an alphabetical list of the names of the documents in that folder.

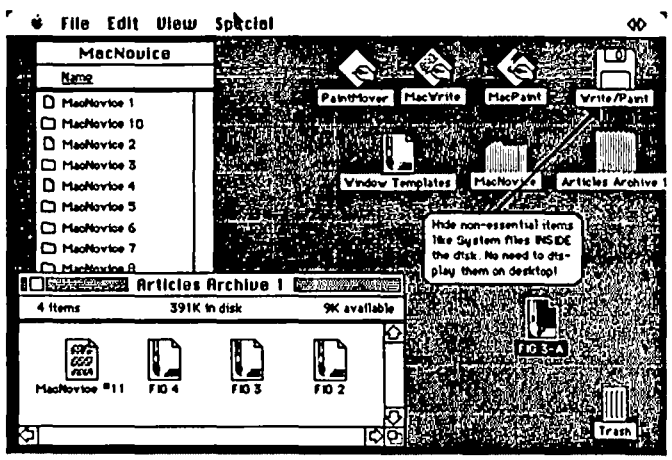


Experiment with the other ways to display your documents to see if the "Finder" helps you organize and find your materials more easily. Some folders might be better left as icon displays. Others might be more useful displayed by the "size" of the document. Don't hesitate to mix and match. You may choose any combination of "views" from the "View" menu...a different one for each window on your desktop. And they're just as easy to change back.

And here's another tip. The Mac automatically selects a "size" for the windows it creates when you "open" file folders and disks on your desktop. Don't hesitate to change those sizes, or even the shapes of the windows. (Use the "size box" in the lower right-hand corner of the window.) The Mac will "remember" how you like them for each individual window and will open them that way when you next use them! Here's how convenient that can be:



Notice I mentioned opening disks on your desktop, too. The "Finder" can help you keep toolbox clutter from slowing you down. Keep the tools you need to "see" out on the desktop. Leave those you don't need to see hidden inside the disks. (For instance, leave the "application" icons sitting on your desktop. But leave icons for the "System Folder" and other utilities stored "inside" the disk icons. You can always "open" the disk window when you need to see something inside (by double clicking on the disk icon). Again, the Macintosh will "remember" where you put things, so they'll always be in their familiar places when you start up the disk.



As you can see, there's more to the "desktop metaphor" than simply pretty icons to distinguish the Mac from other computers. Really using the desktop can make your work more efficient and your files easier to manage!

REVIEW CORNER

by James M. Burger

Fall Comdex, MonsterMac & AppleLink

FALL COMDEX

Finally, I went to the Behemoth of the microcomputer shows: Fall Comdex in Las Vegas. My first impressions are tired feet, sore legs and longing for a MacWorld Expo.

The show itself is huge. It filled the North, South, East, West Halls and Rotunda of the not very small Las Vegas Convention Center, as well as the Exhibition Rooms at the Las Vegas Hilton, Caesar's Palace, Rivera and MGM Grand Hotels. There were hundreds of booths with every conceivable kind of hardware and software product. Just trying to walk around and see most of the exhibits is a major job.

Other than at the Apple booth, the Apple offerings were scattered throughout the hall. Unfortunately, most of the microcomputer products were IBM, or IBM clones, and peripherals or software devoted to those machines. Apple's booth, however, was well-done and crowded. Apple set up stations for software and hardware vendors to demonstrate their wares. Thus, you could spend almost an entire day going from station to station to see the latest Mac and // goodies.

The two Apple products that most impressed me (and I did not have time to see everything) were Tempo by **Affinity Microsystems** (1050 Walnut St., Boulder, CO 80302) and AppleLink by **Apple and General Electric Informations Services** (GEISCO). Unfortunately, neither product is available now.

Tempo is a macro generating program. Rick Barron, Affinity's genial President, demonstrated this new product. Tempo permits you to define a control and/or option character as any series of keystrokes and/or mouse moves. It works like the macro building tool in Excel. An entire RAM disk can be built with one keystroke: Start Tempo recording; step through the process once (i.e. click on the RAM disk icon, define the size, quit, transfer the system, finder, applications and files into the RAM disk, etc.), stop the recorder, define the key (e.g. "option/control r") for the macro and name the macro (macros can be activated from a dialogue box). That RAM disk can be built any time by merely pressing option/control r. Tempo builds the disk for you. Tempo appears to be a very powerful program. It permits stopping the macro for text entry, calling on other macros, loops, if/or statements, and other Boolean steps. Rick said that Affinity will be shipping in January/February.

AppleLink is the best communications system available. It has been used between Apple officials, and between Apple and dealers. It is very, very slick and so simple to use that it gives telecommunications a turbocharge. Unfortunately, at first AppleLink will only be offered to the Fortune 1200. More on AppleLink later.

The Apple Booth should have been twice the size. But then, MacWorld Expo San Francisco is coming this January. I hate to be so parochial; the IBM world just does not excite me. Of interest, however, are the prices for IBM add-ons: 10 megabyte internal hard drives for $345, add-on four megabyte memory boards for $600.

Could you image a higher speed 68000 or 6502 compatible processor; plus more memory – both RAM and a hard drive connected directly to the data bus, on both the Mac and the //; new ROMs and a math coprocessor (like the 8087 chip on the IBM) on the Mac? All at a reasonable price. (There are 68000's twice as fast as the 68000 in the Mac. At least one compatible chip runs at twice the speed of the 6502 CPU.) Both machines would run circles around IBM and MS-DOS machines. The Mac would be a turbo-Porsche running a road race against Mom's Omni (except the Porsche would be far easier to drive)!

Corvus Systems had their new OmniNet up and running. Dan Torres of Corvus demonstrated the system's power. Corvus had three Macs, an IBM, two hard disks (one file server and one utility server), a LaserWriter and an HP Laserjet all linked together. Coruvs says that //e's can also run on the network. Dan showed file transfers between Lotus 1-2-3 on the IBM and Excel on the Mac. It worked very smoothly. He also demonstrated spooling to the Laser. This quickly frees up the Mac. The Mac sends abbreviated PostScript files to the server. Then, the server sends full PostScript information to the Laser. Documents are queued from each station with the first job in printed first.

The local area network (LAN) runs at a one megabit data rate. The connection is inexpensive twisted pair wire. The utility server has one parallel and two serial ports for connecting printers. The OmniDrive file server comes in 11, 21, 45 or 126 Megabyte sizes. The drive can be partitioned to allow users to have public, private or shared volumes on the LAN. The network manager software appeared easy to use. Finally, Mac volumes on the drive can be backed up using Corvus' removable tape cartridge device; but, that requires a IBM PC or //e.

LEVCO TWO MEG UPGRADE - MONSTERMAC

As I write this I have Switcher running Word, MacProject, FileMaker, Paint and the Finder occupying 1006K of memory; Extras (a neat little desk accessory) show 961K of free memory. With some nervousness, I sent my 512K Mac off to San Diego to have Levco upgrade it to two megabytes. I talked to a lot of knowledgeable folks before I did it. With all the talk about the new ROMs, I questioned the Levco folks extensively. They made very strong promises to support the new ROMs when they came out ("Levco will support all Levco products. Whatever that takes. Period."). The lure of

contd.

having two megabytes now was too strong. I will keep you informed about Levco's support of the ROMs as I have information.

The Upgrade. My Mac returned with no noticeable external difference. The first inkling of something different occurs when the machine is powered up: below the blinking disk icon are three little blocks. On the two meg. machine all three are blackened (two on the 1.5 and one block on the one meg. machine). Once you insert a disk the friendly little smiling Mac icon seems to have grown two little fangs. (MonsterMac, get it?)

Inside, over Apple's mother board, Levco has installed a "MonsterMac" daughter board (which has its own 68000 CPU chip). The daughter board is mounted onto a socket Levco has installed on the motherboard in place of the original 68000 chip. (This, according to some insiders at Apple, is the right way to do it). In addition, the MonsterMac board has three PROM (programmable read only memory) chips. Two of which Levco has programmed to permit the Mac to address the entire contiguous two megs of RAM. The third PROM, with 128K of memory, is available to venturesome developers that want to burn in their own programs. Finally, there is a 68000 expansion connector "for future add-on products" (e.g. a direct memory access hard disk drive).

The HyperDrive cannot be mounted in a MonsterMac. Therefore, one should think long and hard about which you want. It is an either or proposition. Even before choosing two megs, I had decided that I preferred an external disk drive (see December 1985 *Byte* at page 329).

One other change inside the MonsterMac is a "Mac-Breeze." This is a "piezoelectric quadrature" fan. What a mouthful. But, mounted properly, the fan is virtually noiseless. In effect, when voltage is applied, the piezoelectric material changes shape. Attached to the material are two mylar strips. When the Mac is on, the strips vibrate back and forth 60 times a second. Air is drawn from the sides and blow out the top. (This is unlike most fans which have blades turned by an electric motor and are noisy). My only problem was that during shipping the velcro strip holding the fan came loose. The fan made quite a racket. It sounded like the Mac was coming apart.

I took the Mac to a local dealer (who made me swear that I wouldn't hold him responsible for anything). After he cracked the case and remounted the fan (without instructions from Levco, since they did the upgrade they didn't ship me the assembly instructions), it performed as claimed. Unfortunately, the fix didn't last. Finally, I had a friend with much case cracking experience open the case. This time we taped the fan down firmly. That seemed to do the trick.

Performance. Apart from the glitch in the fan mounting, the MonsterMac has worked famously. All of my software has run flawlessly (or, at least any bombs were not the fault of the upgrade). Switcher works well, as does the RAM disk. A RAM disk with the System, Finder and Word on it makes the Mac fly. Word launched in under 3.5 seconds! Even version 1.10 of my favorite, ThinkTank 512 works. (ThinkTank, a very early Mac product, does not follow the "Mac Operating System" 100%. It has bombed out the RAM disks that I've tried. But help is on the way. Peter Winer of LIving Video Text let me see version 1.2 that does work with RAM disks. Hopefully, I can report in more detail next month).

The MonsterMac can also run as a plain vanilla 512K if you have some nonstandard software that you cannot live without. To do this press the front half of the programmer's switch (the "RESET"). When Mac "bongs," quickly press the rear half (the "INTERRUPT"). On the screen is a simple flashing Mac disk icon without the little boxes. Several game programs "cheat" (i.e. don't follow the standard Mac Operating System). MacVegas, for example, will continue to reset after the startup screen in an endless loop. Resetting and interrupting, as above, permits MacVegas to run just fine.

I am afraid that I have become a memory hog. I won't give up my two meg. Hopefully, Levco will live up to its promise to support the new ROMs. I have no reason to doubt it. This may mean shipping my Mac back out to San Diego. I will keep you informed.

Prices and Warranty. Levco offers a variety of configurations and prices. For the full two meg. installed upgrade, the price is $899.95. The MonsterMac board without RAM chips is $499.95, each additional 512K RAM is $100. Levco offers a discount for quantity buys. Also, they will sell a 512K upgrade kit for $154.95; the total installed is $264.95. Finally, they will take a 128K machine and return it as a two meg. machine for $1100. Not bad for some of us that paid almost that much to get our 128K up to 512K. Levco's warranty is 90 for days parts and labor.

Levco Enterprises, 6160 Lusk Blvd., #C-203, San Diego, CA 92121. (619) 457-2011.

BUSINESSTALK (AKA APPLELINK)

Recently, General Electric Information Services Company (GEISCO) and Apple announced that they would be comarketing the AppleLink information service to the Fortune 1200. A retail version, for sale to small and medium businesses, is apparently still in the developmental stages. AppleLink is currently used inside Apple, and between Apple and its dealers. It is one of the best communications programs I have used or seen. GIESCO and Apple demonstrated the program at Comdex. They have been kind enough to allow me to review the GIESCO product before its release.

BusinessTalk takes maximum advantage of the Macintosh interface. It will allow a company to have a complete internal electronic mail system, with controlled access for its dealers, distributors, representatives, clients, etc. GIESCO operates the mainframe computer through which the electronic mail system communicates.

Operation. Setting up the program is a snap. The organization has already filled in the individual's E-Mail address and system number. The individual merely enters the local telephone number, selects the modem, dial-type and connection (see Screen Shot 1 below). All of the rest of the communications parameters are preset.

Opening the AppleLink icon takes you to the connection screen. It reminds the individual of their address and the local network number. To connect to the network type in the passwork and click "Connect to Network" (or press Enter).

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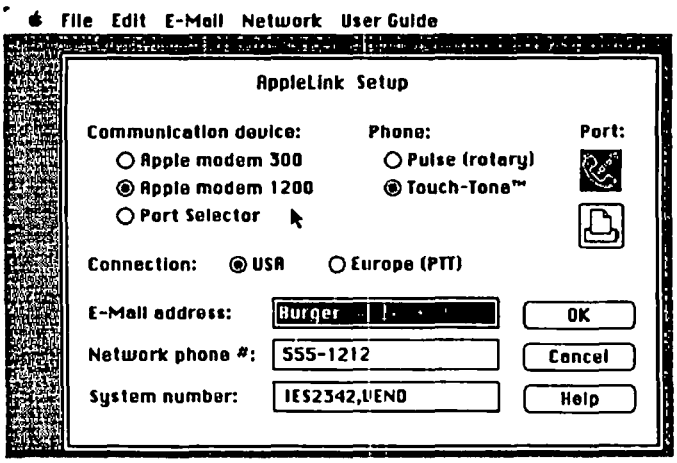
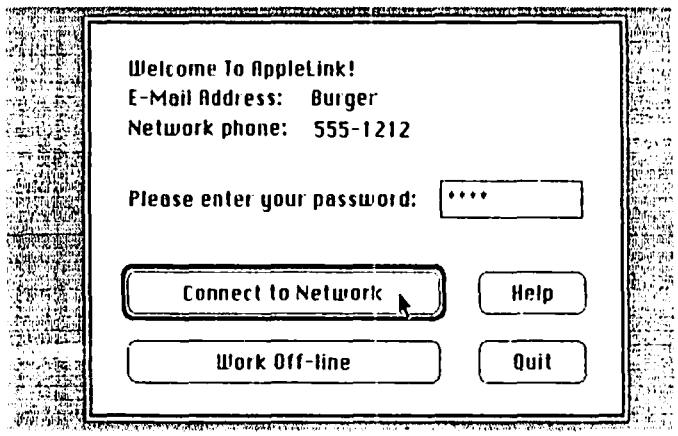
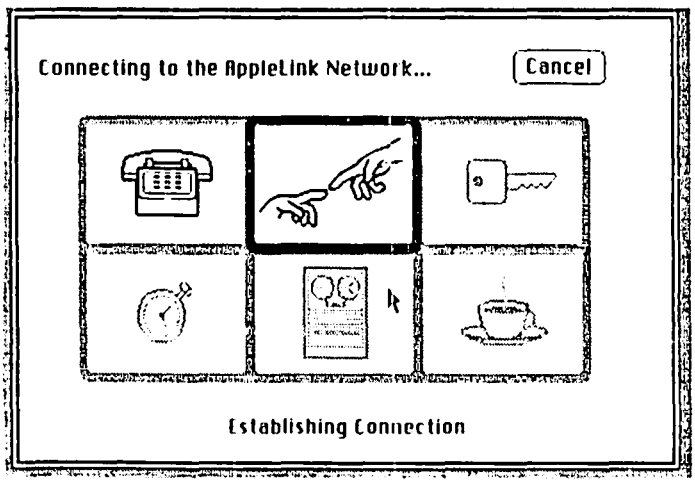


Screen Shot 1



Screen Shot 2

Next, lean back and relax as the program highlights icons and tells you where you are:

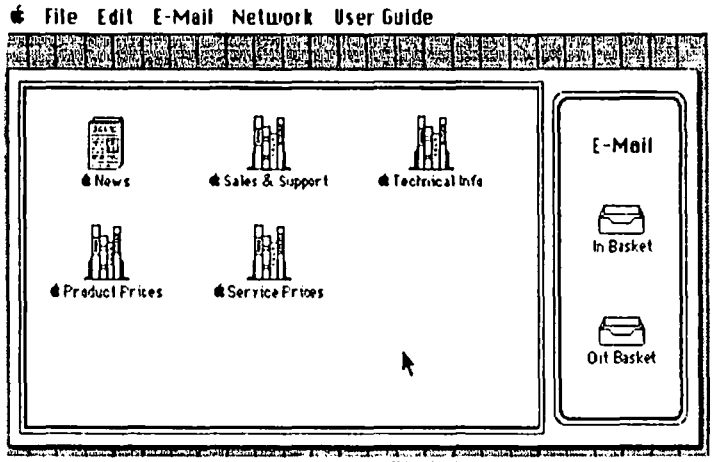


Screen Shot 3

Once connected, there are no individual lines of text and requests for obscure codes required to wander through the bulletin board or electronic mail service. Instead, the screen is graced with the AppleLink desktop.

A large arrow in the In Basket indicates mail waiting to be read. Click on the In Basket to see what messages have been sent. Mail can take the form of either a memorandum written with the AppleLink program (or converted from MacWrite) or a file from any application or even an application itself.

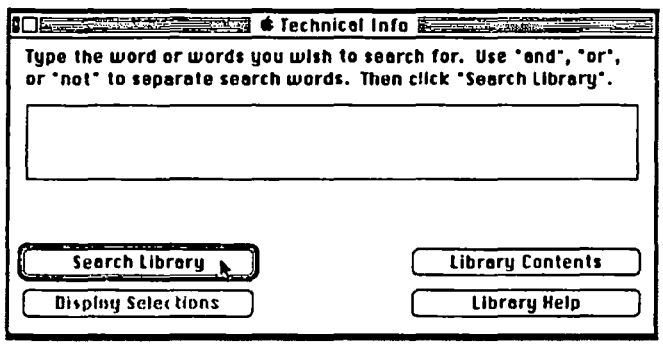
Sending a file is very simple. Pull down the E-Mail



Screen Shot 4

menu (see Screen Shot 6 below). Select "Transfer a Disk File." A screen form appears where there is a space to fill in the E-Mail address, any CC's, and the subject. Then click "Send Memo." A MacTerminal like ruler appears on the screen, counting up to 100% sent. Also a note appears on the menu bar letting you know that the memo was sent okay. Also, later on, you can check to see if your memo has been read and who has read it. (See Screen Shot 6 below).

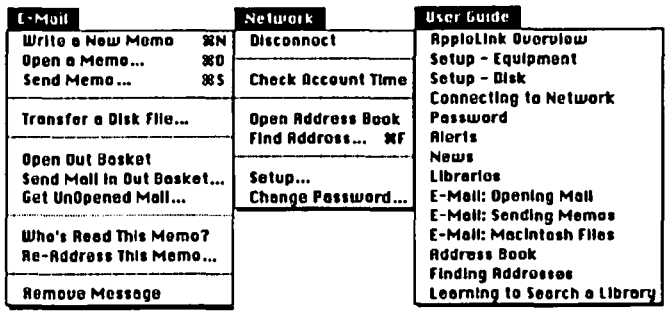
News can be anything the host corporation believes of general interest to those on the E-Mail service. Also, GEISCO offers on-line *U.S.A. Today.* Corporate (or other news) that needs immediate attention is represented by an "Alert" icon; an icon with a large ! in it. Sales & Support, Technical Info, Product Prices and Service Prices are particularly useful to any corporation manufacturing/ distributing products. Up to the minute product and service information can be made available worldwide to a corporation's offices, distributors, salespeople, retailers, etc. Moreover, the extent of access can be controlled for different individuals. Searching through the Technical Info database or other databases is similar to using one of the word search databases such as Lexis/Nexis.



Screen Shot 5

Lots of on disk help is available through the User Guide menu (see Screen Shot 6, below). Given the extensive use of icons and dialogue boxes, I have not had to resort to the help. But it's nice to know its there. Changing the password is also simple, and menu driven. Also, the user can establish a personalized Address Book through the menu. AppleLink will search its database looking for the name requested. Once found, the user can paste it into an "Address Book."

contd.



Screen Shot 6

Documentation. The documentation is well written. Because the program is so well icon- and menu-driven, written documentation is superfluous. The on-disk help is very good.

Performance. AppleLink performs flawlessly. Except for mistyping my password, I never have had any trouble using the system. It is a very powerful program but simple to use. Would that all communications systems were this easy to use. AppleLink exploits the power of the Macintosh user interface to the fullest extent possible. This is Mac as it should be. Apple and GEISCO have a winner!

Conclusion. All this raving and you ask what is the down side? The down side is that it won't be available for awhile even to corporate users. Starting in 1986 Business-Link will be made available to the Fortune 1200. The proposed price is $9,900 including 100 hours on the network and a site license for the software. Even if the product is not made available to the rest of us immediately, it sets a new standard for communications software (MCI should take this hint).

BusinessLink from Apple and General Electric Information Services Company, 401 N. Washington St., Rockville, Maryland 20850. (800) 638-9636 (ext. 8017).

SILICON BEACH SOFTWARE - ACCESSORY PAK 1.

Silicon Beach has introduced a handy collection of programs including Paint Cutter, three desk accessories, Screen Saver and a new font.

Paint Cutter is an easy to use MacPaint utility. This program permits cutting and pasting an entire MacPaint document. This is unlike MacPaint which limits you to only what you see on the limited MacPaint window. Paint Cutter will work with a 128K Mac. But, it is more flexible on a 512K Mac where you can open four MacPaint files at once. The entire (or portion of) the document selected can be pasted into the clipboard or the scrapbook. The screen shots in this month's column were cut and pasted using Paint Cutter. It made assembly of the various menus in Screen Shot 6 above fairly simple. (Ah the two meg. machine—I had Switcher running Word at 512K, Paint Cutter at 512K and MacPaint at 128K). Paint Cutter has a Coordinates option. It shows two pairs of numbers. The first gives the cursor position and the second the position on the 8"x 10" document. Paint Cutter can Invert, Flip Horizontal or Vertical and Rotate. Paint Cutter is a handy tool to get around the limitations of cutting and pasting from MacPaint.

The Desk Accessories. Have you ever wished for rulers on MacPaint. They are very handy in MacDraw. The Rulers Desk Accessory allows you to select inches, centimeters or pixels as the scale. You can actually draw images to size since 2" x 3" on the ruler equals 2" x 3" on the printed copy. There are drawbacks on the 128K Mac and the XL. On the 128K machine a dialogue box that covers part of the rulers will erase that part. But simply select the DA again. The MacXL generates the cursor differently than the Mac. Therefore, when using Rulers sometimes the cursor will be left behind on the screen. The QuickEject DA will eject all the disks and restart the Mac. The Coordinates DA gives you the location of the cursor in inches, centimeters or pixels.

Screen Saver and Silicon Beach Font. Screen Saver is one program I have not tested. It is similar to Idle, which is a desk accessory that I do use. The program installs a routine in the System file that blanks the screen and sends a little Mac chasing around the screen. Screen Saver permits you to select an interval between one and thirty minutes after which the screen blanks out. Idle is similar, except that Screen Saver does not take up a desk accessory slot and works automatically. I have not used it, because, the manual warns that it may not be compatible with altered System files used with a hard disk. While I have everything backed up, it would take a while to restore everything. If you use this, I would follow Silicon Beach's advice and backup everything first. Also on the disk is Silicon Beach Font. Does this look familiar: Ÿ ? If the urge strikes to pepper your writing with helicopters, this is the font for you.

The manual, although brief, is adequate. Desk accessories shouldn't require extensive instructions. Accessory Pak 1, at $49.95 is a good bargain; the Paint Cutter program alone is worth it.

Silicon Beach Software, PO Box 261430, San Diego, CA 92126.

PRODUCTS RECEIVED:

Unless otherwise indicated, the products are for the Mac and the price, if indicated is the suggested retail price.

SOFTWARE -

Hayden Book Company, 10 Mulholland Drive, Hasbrouck Heights, NJ 07604. The Financial Advisor. $39.95. Series of Multiplan templates to track income and expenses, manage investments, etc.

INFORMATION RECEIVED:

HARDWARE -

Cauzin Systems, Inc., 835 S. Main St., Waterbury, CT 0670. **Softstrip System Reader.** $200. New system to read printed software code in periodicals.

Corvus Systems, Inc., 2100 Corvus Drive, San Jose, CA 95124. **OmniNet.** $395 per station and $395 for the network software. A high-performance local area network which permits 512K Macs as well as IBM PC's, AT's, their clones and //e's to connect to the network, share files with common data structure, support the LaserWriter and spool and print files from the Mac.

Dayna Communications, Inc., 50 South Main Street, Salt Lake City, UT 84144. **Dayna Expansion Chassis.** MacCharlie box with six full length IBM PC compatible slots.

MicroTRENDS, Inc., 650 Woodfield Dr., Schaumburg, IL 60195. **The 68000 Card.** $2495. For Apple //e and //+, contd.

CD-ROM capability, 68000 co-processor, 512K RAM, 10 MHz Clock Speed, 6502 Software runs unmodified, with mouse support on-board.

Tangent Technologies Ltd., 5720 Peachtree Parkway, Norcross, GA 30092. **PC MacKey.** $299. "Ergonomically advanced" keyboard for the Mac, with programmable function keys and numeric keypad.

Z.A.P Logic Corp., 290 Larkin St., Buffalo, NY 14210. **The Granny Smith Connection.** Hardware parallel expansion interface for connecting parallel printers to the Mac. Also available for the //c as for //+ and //e as a full featured graphics parallel interface card and cable.

SOFTWARE -

ALSoft, Inc., P.O. Box 927, Spring, TX 77383. **MacExpress.** A generic application for Mac software developers that creates a "complete and consistent" user interface providing flow control for events, menu handling, application desktop and management and creation of windows, panels and displays.

Applied Micro Solutions, PO Box 860, Ft. Collins, CO 80522. $295. **AMS General Ledger.** $295. Financial accounting program providing customized balance sheet and income statements; account balances and budgets may be transferred to Jazz or Excel.

First Byte, 2845 Temple Avenue, Long Beach, CA 90806. **Speller Bee.** $79.95. For preschool through high school, games to improve spelling abilities; it speaks the words. **KidTalk.** $79.95. Learning tool for better reading and writing skills, also pre-K through 12. Both use SmoothTalker software.

Haba, 6711 Valjean Avenue, Van Nuys, CA 91406. **Habadex 2.0.** A "desktop manager" with directory, appointment, calendar, to do list and automatic dialer.

Kyra Corp., 3864 Bayberry Lane, Seaford, NY 11783. **Artware Folio.** $59.95. Scaled drawings with over 400 images of people engaged in a variety of actions and backgrounds that can be combined for personalized presentation.

Neuron Data, 444 High Street, Palo Alto, CA 94301. **Nexpert.** "AI-based desktop productivity tool for knowledge workers."

Paladin Software Corporation, 2895 Zanker Rd., San Jose, CA 95134. **Super Crunch.** $295. Souped up version of Crunch - 250 levels of worksheet space, 250 columns by 9,999 rows, "smart" recalculations (only recalc cells changed or affected by change), macros, design your own icons for the icon bar and more.

Satori Software, 5507 Woodlawn Ave. N., Seattle, WA 98103. **Legal Billing.** $595. A time billing package for lawyers (or for anyone that bills on an hourly basis), will track time, print bills, time reports, receivable aging reports, and more.

South Pacific Engineering Corporation, PO Box 25157, Honolulu, HI 96825. **Spec Bid Contracting System.** $2995 (contact me for 30% member discount). A complete contract bid software and/or hardware system for the //e or //c; recommended for use with at least a 10 Megabyte disk.

The Model Office Company, 49 Wellington St. East, Toronto, Canada M5E 1C9. **Document Mailer.** $199, with **Template** $299. Works with MacWrite to make "semi-custom" documents. **Date Calculator.** $39. A desk accessory which computes the number of days between two dates or after a given date. **Document Compare.** $99. Will take two MacWrite documents and compare them, highlighting changes in inverse video.

Videx, Inc., 1105 N.E. Circle Blvd., Corvallis, OR 97330. **Mail Center.** $299 (for two Macs), $499 (for six Macs). Electronic mail for Macs linked by AppleTalk, documents created or used by Mac can be sent to any other Mac on the network with the information being received by the other Mac without interrupting work in progress on the receiving Mac.

MAC PROGRAMMERS GROUP NOTES

by Tim Buehrer

The Macintosh Programmers Group is a collection of twenty or more people who meet the first Thursday of each month to discuss the intricacies of programming the Macintosh. Each meeting has a scheduled topic, though that has never precluded long digressions on any topic of interest. Moreover, there is always a question and answer period where rumors are aired and individual programming problems discussed.

The following topics are currently scheduled for the next two months:

January 2 - Rex Jaeschke, a local consultant who is the editor of C Journal and a member of the ANSI C committee, will speak on the uses for C on the Macintosh, as well as the future of standards in the development of C.

February 6: Jay Heller will lead a discussion of the new Motorola 68020 microprocessor. This faster and more powerful successor to the 68000 chip in the Macintosh will possibly be the basis for any new machine in the Macintosh line, and anyone developing programs for the Mac should be aware of what to do and what not to do to cope with this new chip.

While the **March** meeting is not yet set, a number of us have recently bought the new TML Pascal, a LISA- Pascal-compatible compiled Pascal for the Mac, and we may have a presentation in March on the use of that system.

We have also begun a new Mac Programmers bulletin board on SYSTEM 1 of the WAP BBS that will permit persons interested in programming the Mac to ask questions and get answers between meetings. We also hope to use the board's library to distribute materials of interest to programmers, for example, Macintosh Tech Notes.

If you have any questions about the group or any suggestions on topics for future meetings, please leave them on the bulletin board or call me.

Book Reviews
by Robert C. Platt

Greetings from the book review corner, which is overflowing as the variety of books related to using Apples continues to grow.

Pascal Books for the Mac

The ranks of Mac-specific introductory Pascal texts is increasing. Most of these books are based on Think Technology's MacPascal. However, any UCSD Pascal Book can be used to master the MacAdvantage or "Designer Series" implementation of Pascal (available from Pecan Software Systems.) One of the most popular books on UCSD Pascal is Apple Pascal: A Hands On Approach. Unfortunately, it relies upon the button and note procedures to illustrate programming concepts. Thus, Hands On Approach is not directly transferable to the Mac. If translation of a few built-in functions will be too distracting, the manuals packaged with the UCSD system are probably sufficient for even the novice programmer.

As for MacPascal, I recommend Paul A. Sand's The First Book of Macintosh Pascal [Osborne/McGraw-Hill 1985, $13.46]. It has an interesting mix of introductory topics and advanced techniques for using the toolbox and graphics. Paul Sand, an early WAP member, is also the author of Advanced Pascal Programming. I am also impressed with Ledgard & Singer's Pascal for the Macintosh [Addison Wesley, 390 p. 1985, $18.95]. This book is aimed at computerphobes who are afraid of programming. It places a heavier emphasis on introductory concepts such as variables and loops. This team produced Elementary Pascal, which was geared to the Apple //. Both books use a Sherlock Holmes detective theme to present each chapter as a separate mystery. My main criticism of Ledgard & Singer's book is that it skimps on Mac-specific topics such as graphics. (The fact that it is adapted from the Apple // book shows a bit.)

Assembly Language Programing on the Mac.

The best source is **MacTutor**, a monthly magazine with heavy assembler coverage. [For subscriptions: MacTutor, P.O. Box 846, Placentia, CA 92670, $24 per year].

With regard to books, the best text is 68000 Assembly Language Programming by Kane, Hawkins & Leventhal. [Osborne/McGraw Hill, 1981 300 pp. $18.95]. One book to avoid is Jack Commander's Macintosh Assembly Language Programming [TAB Books, 198 p. $16.95] Commander has undertaken far too ambitious a project for so short a book. He covers all materials that Inside Macintosh takes two volumes to cover by a single sample program for a calculator desk accessory. I suspect that a novice to the 68000 instruction set would be better served by a more detailed text, such as the Kane book. Commander's books is also no substitute for the MDS Assembler's manual and Inside Macintosh or Macintosh Revealed.

Happy hunting in the computer shelves of your favorite book stores!

Cary Lu contd. from pg 56

own hard disk drive.")

Cary thinks that for Apple to survive, they should speed up development of a Macintosh which will run four times as fast, thereby becoming competitive. He thinks they should consider PC compatiblity.

What's Coming in January

New product announcements will be made at the San Francisco Expo January 16-18 rather than at the stockholders meeting, due to a change in advertising approach by the new regime.

Probables:

- 1 mb RAM upgrade
- 128K ROM upgrade, with system folder in ROM, hierarchical finder elements, 50-60% increase in speed.
- double-sided floppy drives, made by Sony, 32 mm high instead of 50 mm, allowing room for two drives inside the case. Apple, however, does not intend to provide for such an installation, for some reason. Electronic differences too, which should speed things up considerably.

and the blockbuster:

- SCSI hard disk interface built in, which will make Apple's own Hard Disk 20 and all other current Mac hard disks obsolete. This will allow use of standard hard disk drives, which are cheaper and faster.

Entire upgrade--RAM, ROM, DS drive, and SCSI--will cost $1,000 - $1,300. Some software may have problems with the hierarchical filing system, but manufacturers are aware and working on upgrades.

Possible developments to be announced in fall of 1986: ("...nothing official, but Apple is a very leaky company...")

- a bigger, more powerful machine
- 68020 chip
- card cage
- color
- increased screen size

And in ten years, will Apple still be in business? "Can't say," said Cary Lu. "In 3 years, yes."

Best of Mac BBS contd. from pg 68

MAC Programming

SS Update

FROM MICHAEL HARTMAN ON 11/20 TO ALL

I haven't gotten my mailing this month yet, but I'm told that there will be another update to the Software Supplement available soon for $25. If you've been pondering whether to download ResEdit 0.8 from CompuServe, you might want to wait for this. The update will include both software and documentation, including a chapter on HFS. I wholeheartedly recommend subscribing to the Macintosh Technical Notes series from Apple. For $20 per year, you get a package of 5-10 notes every two months filled with interesting information. If you are serious about programming the Mac, these will help you to do it right. Past topics include Apple-application file formats, how "foreign" drives talk to the Finder, and HFS compatibility issues. To subscribe, send $20 to: Macintosh Technical Notes, Apple Computer, Inc., 20525 Mariani Avenue; MS 4-T, Cupertino, CA 95014. Now let's see some serious programming discussion on this board!

BEST OF THE MAC ITEMS FROM UBBS
by Regina Litman

MAC Hardware

Mouse Wear
FROM BOB MASSO ON 10/10 TO ALL

OK, I remember people discussing the plastic knobs on the mouse bottom wearing out, but what about the innards? Specifically, the rubber-like coating or sheath on the X Y rollers. I just noticed mine are not all there, as if pieces have broken off. Anyone else noticed this? Or had it fixed?

FROM JIM GRAHAM ON 11/24 TO BOB MASSO

Bob, I had the same opinion when I first looked inside my mouse--that there were pieces of rubber or something missing. After some checking, I realized...no rubber; that's dirt and residue from use. Take alcohol on a Q-Tip and clean well, moving it side to side. It comes off easily, eventually... no kidding.

Hierarchical Files
FROM GREG MAPLES ON 11/04 TO JON HARDIS

When I said FULLY support a hierarchical file system, I meant to imply a basic level of functionality that corresponds roughly to what we have come to expect of minicomputer directory structures. The UNIX system is a good example of what I mean. Directories nest, files are 'pathname' addressable, privacy and security are enforced, etc. This all ties in to my theory about Apple's direction on the Mac. If you noticed the articles in MacTutor and in the Apple University guide on Switcher, you will notice that the Switcher allows programs to call each other, go to sleep, set wake-ups, etc. These are all things to be expected of a multi-processing system. A hierarchical file system is needed to move this idea into the realm of usability and functionality. That is what I meant by FULLY.

Hardware Upgrades
FROM GREG MAPLES ON 11/04 TO ALL

For those of you who have not seen today's Infoworld, Dvorak has some info on the forthcoming Mac upgrade. First, the drives. The price will be about $300 and will involve a drive swap as I understand his comments. It seems that Apple put the driver ROM in the drive itself, thus ruining those folks like Haba who used the Mac ROM already in existence. This would mean that the floppy ROM would support the new file system; otherwise, what would the compatibility problem be? Second, the system ROM upgrade involves a main logic swap, as well as getting a new case, to give you a new drive port to support the hard disk. Price is estimated at about $550. He says not to expect the open architecture anytime real soon. This is an approximation of his comments, as I do not have the issue in front of me right now. Corrections anyone?

FROM CHARLES SICARD ON 11/06 TO PUBLIC

11/4 issue of Infoworld has two articles on Mac upgrades, pg 58 and pg 60 (Dvorak). The article on pg 58 is about Masstech Dev. Fastmac upgrade ("clip-on memory and performance upgrade with ROM enhancement"), $799 to $1,099 depending on which Mac (128 or 512) and which upgrade.

FROM JON HARDIS ON 11/24 TO GREG MAPLES

The upcoming Apple 800K drives have the variable speed control on the drive itself (unlike the Habas). Dvorak is speaking of the ROM/Disk upgrade package we have discussed on this board before. I still don't believe the $300 price tag. While the new ROM software expects the Apple-style disks, and while the Haba drives do not work with the HFS software in the field now, one can install special software to make the Habas usable. How well Haba will support their product is anybody's guess.

FROM GREG MAPLES ON 11/25 TO JON HARDIS

Jon...Merely as a note of interest, I thought it interesting to point out my experiences with the Haba drives. I'm working part time at Comp. Crafters in Wheaton, and we have seen most of the Haba drives we sold come back in with catastrophic failures in the mechanisms. I'd guess about 75% so far.

New Mac Drive
FROM DOUGLAS E CANTON JR ON 11/09TO ALL

In the special (business) edition of Macworld, there is an advertisement for an 800K capacity drive (Mirror Magnum). The ad claims that the drive will recognize single- and double-sided disks and write to them accordingly. Whether it treats single-siders as double-siders or can detect the difference is not clear. The ad also claims that the Magnum is 50% faster than the Apple drive. What that means is also not clear. If twice as much info (800K) must be handled, the relative speed increase would make the drive no faster in fact than Apple's drive. In other words, a larger desktop by virtue of a larger capacity drive would take longer to build without the 50% increase. A local dealer plans to have these drives in stock (next week?) and is initially quoting a price of $499. With the Apple upgrades just around the corner, this seems too high a price and an attempt to take advantage of impatient and/or frustrated owners of Mac single-sided external drives. The ad in Mac- world gives no substantive performance specs - just hype and including mentioning that Mirror is a certified Apple develop- er and that the Magnum is based on the Sony drive. If anyone out there has some firsthand feedback on this product, please pass it on/ leave a message here for all. In any event, caveat emptor.

FROM TOM VIER ON 11/09 TO DOUGLAS E CANTON

Indeed, if the drive's access time is twice as fast, it will handle the same file I/O twice as fast. Because it is double-sided DOES NOT mean that the same size file has "twice as much info". It just means the capacity is twice as big. So you get

contd.

2X the "info" capacity, accessed in half the time. What's wrong with that?

External Drive Problems
FROM GREG MAPLES ON 11/09 TO ALL

As I am employed part-time at a local computer store doing consulting, I come across Apple service notes. One dated August 9, 1985, is particularly interesting. Apple says that the Mac power supply is located on the left side of the Mac as you look at it and that the PS emits large enough amounts of RFI (radio frequency interference) to degrade the reliability of an external drive located in close proximity to it. It seems to affect the read mechanism only. The word from Apple is: Do not put your drive on the left side of your Mac or on top of it. The only reliable location is on the right. Straight from Apple, and I have been fighting this issue with them for almost a year! Previously, they had denied any problem whatsoever and left people with intermittent drive errors scratching their heads.

Tecmar Troubles
FROM BOB MASSO ON 11/26 TO ALL

Well, I knew it finally had to happen, but I had my Tecmar hard disk go gaga on me the other day, losing several non-backed-up files in the process. Symptoms: I would boot it, and it would get to the point where the desktop minus the mounted "The System" volume would appear (i.e. - top menu-bar but otherwise blank) and go into an endless loop. I could boot the Tecmar 3 1/2" disk itself (by not giving the HD time to get up to speed) and then invoke the Volume Manager. Sure enough, the volume "The System" was there. But if I mounted it and then quit, I ended up with the desktop loop again. My guess is that somehow the volume directory was corrupted and that the software was unable to handle the problem (or even see that there was a problem). I eventually re-initialized the cartridge and re-created the volumes on it. After several days, appears to work fine. One possible clue is that prior to the "crash", the print-buffering several times would start printing garbage instead of whatever. Anyone else with a Tecmar run across this? I am using version 2.0 Tecmar bootdisk.

MAC Software

TML Pascal
FROM LEON MOORE ON 11/02 TO ALL

Well boys and girls (sorry Regina) if you want a compiled Pascal for the Mac, Tom Leonard is shipping a 0.9 version of his MacLanguage Series Pascal compiler (TML Systems, PO Box 361626, Melbourne, FL 32936). I am not enough of a Pascal programmer to tell you if this product is great, but I can tell you it is good. I received my copy a week ago, and it works. I think it works well and is very Mac-like. You get the MDS editor, RMaker, the Apple Linker, TML's associated Pascal files, and a bunch of Software Supplement programs modified to work with the TML system. Modifications include changing the QD and Toolbox traps from USES to compiler directives ($I <filename.ipas>). In the last week I have found 2 or 3 bugs in the compiler. I spoke with Leonard yesterday (11/1). He believes he will have a number of bugs squashed and a (I guess) release version (1.0) out to current owners with documentation in a week or two. I only have one real reservation about the system. One of the 'bugs' I found was the lack of support of PAGE. I think anything that calls itself Pascal should support standard Pascal. Then the extensions are great for the rest of us. Leonard wasn't sure that PAGE was in standard (???). I have no connection with TML systems except that I sent him money for the compiler. TML Pascal lists at $99.95. Leonard has told Don Landing (and repeated to me) that a group pruchase of 20 copies would go for $60 per copy. Anyone care to count noses for a WAP group buy?

Excel to 1-2-3 Trans
FROM JOSEPH T. KELLEY ON 11/02 TO JON HARDIS

Jon: With the able assistance of Tom (Programs) Piwowar I found the answer. You must disable Binary Transfer because when it is enabled, the first 128 bytes are interpreted as info about the file but not part of the file. In effect Red Ryder has two Xmodem protocols, one for Mac files and one for all other. Unfortunately, the documentation is not as clear as it should be. Thanks.

MacLabeler
FROM SCOTT CALVERT ON 11/08 TO ALL

The 2.0 version of MacLabeler "should be available in the next two weeks" (love that vaporware) if you believe the folks at Ideaform. They claim that they will send out an announcement to all registered owners. Upgrade policy: $15.00 for the 2.0.

MAC Misc & Gossip

Printer Echo
FROM RICHARD GALIK ON 11/01 TO ALL

Can someone tell me how to make the Mac printer echo? I feel very dumb to keep having to read the menu or print screen to get the menu commands. Thanks.

FROM REGINA LITMAN ON 11/05 TO RICHARD GALIK

If you are using Red Ryder 6.2, there is an item in the Options Menu entitled "Echo to Printer". If you select that, it will put what it's putting on your screen onto your printer, too. Others have said this is not recommended at 1200 baud or higher, but I have not had problems with this. If you have an earlier version of Red Ryder, this feature is not available. You can get a new version of Red Ryder by writing to the author (address found in "About Red Ryder" in the Apple menu). If you don't have Red Ryder, you can start with version 5.0 on WAP SigMac disk #17 (use order form found near back of WAP Journal or come to next SigMac or main meeting or go to the office), then upgrade by writing to the author. Note - if you use Red Ryder more than 45 days, you are supposed to send $40 to the author. If you are using MacTerminal, I can't help you, since I have never used that program. My hunch is that this feature is not available in the current version (a new version has been due "real soon now" for some time). If you are using a public domain MS-BASIC program called MacTep (found on an early SigMac disk), I remember there is a way to do this, but I haven't used that program in about 7 months. If that's the program you're using, let me know, and I will dig it out and let you know how to handle this.

contd.

MidiMac & Jonathan
FROM JOHN MASSEY ON 11/20 TO ALL

The 18 Nov EE Times has a lead article on the opening up of the Mac. The following is a summary: MidiMac - this is a 68020 Mac system featuring VME bus slots and SCSI interfaces and large enough to contain entire peripherals. All new Mac systems in development use multiple processors for CPU, screen graphics refresh, and system bus control. Availability - early or mid-86. Announcement in January. Enhanced Mac with new 128K ROM and half height 800K drives - expect may also have two mini-slots. Also some developers indicate Apple has asked for interest in developing coprocessor cards for IBM-PC (and possibility IBM-AT) compatibility. 550 Mbyte CD-ROM drives will also be ready for both Mac and Apple][. Constellation - an out board expansion for the new Macs for connection of 4 to 6 peripherals and option cards. Both the VME bus and SCSI interface would be available for system expansion. The use of color graphics cards will immediately give the Mac high res color capability. Lots of third party growth.

Numeric Turbo
FROM SCOTT CALVERT ON 11/22 TO ALL

After many false starts and non-stop advertising, Assimilation is finally shipping the track ball/numeric key pad accessory. Not all of the mail order houses have it; Conroy La Point is where I found mine at $117.27 including the smiling Federal Express person. It was worth the wait, but it really is frustrating to live with the advertising, not to mention exhibits (they had dummies on display at Boston) when there are no products. HELLLOOO vaporhardware.

Telecommunications

Mac Printer Drivers
FROM RICHARD GALIK ON 11/01 TO ALL

Can anyone help me find a printer driver from the Mac to a Digital LA50 dot matrix, serial interface printer? The main problem seems to be that the LA50 can only receive as fast as 4800 baud while the Mac puts out at 9600 baud - but I know nothing about printer drivers so am a bit afraid to spend mucho dollars without being fairly certain it will work.

FROM RICHARD GALIK ON 11/02 TO KEN DE VITO

Ken, thanks for the info - but what serial card? In the Mac or in the printer? The printer can't accept faster than 4800, and I have no idea how to change the Mac specs. I will try Printers Plus. On a related subject, I bought Jet Start to use the Mac with an H-P Think Jet (I have the DEC and H-P at work) and found I couldn't use it because we have the "B" models, and Jet Start only works with the "D" models. The difference is that "D" models have an RS-232 interface while the "B" models have a unique H-P 2-lead connection. I called Softstyle and explained the problem; they weren't aware of the different models. They will try to create a connection (new type of cable), but no news yet. Meanwhile I have 2 printers at work I can't use.

FROM JON HARDIS ON 11/24 TO RICHARD GALIK

The LA50 and the Imagewriter are almost the same printer. The LA50 works fine at 9600 baud. The problem is that the LA50 and the Imagewriter have different ROMs and control codes. I dunno about the printer driver, but I'd like to find one, too.

Xmodem
FROM BOB MASSO ON 11/07 TO RICHARD ROWELL

Richard, Xmodem is just a published protocol to use for file-transfers. Many different communication progs support the protocol; you just have to get one for your machine. Assuming you are using a Mac, both MacTerminal and RedRyder support it.

TIE
FROM JOE ENGLAND ON 11/08 TO ALL

All are welcome to call The Information Exchange (TIE), an RBBS for Mac, Apple //, CP/M, and IBM microcomputer users. The number is 301-258-9534, and hours are 6 pm to 8 am weekdays and all weekend. TIE has public domain software for each of the 4 types of micro mentioned, but Mac is very light. (Uploads always welcome.) Give it a try--you might like it...

Games & Gamesig

Reviews
FROM RONALD WARTOW ON 11/02 TO COLIN GRAY

Colin, games which we receive from the companies are reviewed by those who participate in GAMESIG, which meets the first Thursday of every month. There is no set rule as to whom I give the software to review except that attendance at the meetings or helping out with SIG "business" is usually the guideline. Our next meeting is this Thurs., beginning at 7:30 at the club office. Stop by and say hello. One further thought. Since we're getting lots of Mac stuff in these days, and we have only a few GAMESIG'ers with Macs or XL's, if you have one of those machines, you have a better shot, as opposed to the 30-35 people who usually show up with an Apple // series computer.

Balance of Power
FROM RICHARD BOLLAR ON 11/05 TO TOM WARRICK

Tom, thanks for the kudos! Let me try to answer your questions about BoP. Chris Crawford, the author of BoP, definitely says that he thinks a bi-polar game is necessary because his playtesters (third graders?) couldn't figure out the rational of a country not being aligned with one of the superpowers. I think that the bi-polar-ness is a major flaw. It bothered me that every country made a white/black decision on alliance. Conflict resolution was another problem area. The resolution is indeed consistent with Crawford's view of the world, not at all like Risk. There was many a time when I trashed the world because I felt that the Soviets ought not to be giving military aid to Mexico. Apparently, the computer goes through some algorithm weighing the importance of the issue for both sides and then playing out the decision for itself. Meaning, if it thinks it should win, it will allow the world to blow up. I was not pleased that this happened to me eight out of every ten games played. I should say that the game is still interesting, and yes, even entertaining, but you should be aware of the problems going in.

contd. on pg 65

DISKETERIA DISPATCH
by Jim Little

Holiday special sale on Disketeria disks. Buy 4 or more disks and save a buck per disk on the 5.25" disks, and two bucks on the 3.5"! And "What to buy", you ask. More new disks. There are two new ones for MacIntosh owners. And for Apple][owners, there are twelve new Eamon disks, a utility package for the programmers, another graphic display disk and a CP/M Adventure for your holiday enjoyment.

WAP DISK 170: Love's Follies (Utilities)

Disk 170 contains the neatest Applesoft lister I've seen yet. While the Beagle Bros.™ lister will break down multiple statement lines in readable form, this one puts the line number at the end of the line. At the same time, all decisions are indented and deeper levels are indented further. At the close of the decision level the next line loses the indentation. Slick trick! Another program makes the entire keyboard into a set of function keys. Control m and control @ switch the functions and regular keys. Another program allows the control of assembly programs, editing etc., particularly the listings you see in this form: 10 DATA 123,22,48,60...., where the decimal codes are POKEd into memory. With the editor the codes can be edited, amended, moved or modified as needed and then saved as binary or whatever for future use. Thanks to John A. Love III for this work.

WAP DISK 171: CAT-GRAPHIX

Cat-graphix is an editor contol system for fast high resolution display. It includes about twenty displays of fast moving shapes on your monitor. In my review, I did not find a screen print routine in this disk. Probably the dump would require one of the screen dump programs. Lots of fun to look at, and with a bit of study of the supplied text files, a chance to control your own displays.

WAP DISKS 209 - 221: New Eamon Disks

Eamon has ten new adventures! And two utilities to boot.

Disk #209 is the **CAVERNS OF LANGST.** You are approached by Dr. Andrew Whitehead in the Main Hall. He explains that he needs a seasoned adventurer to find and explore the caves of Langst to find artifacts and perhaps a lost people...

Disk #210 is **FUTURE QUEST.** While riding a horse cross-country you suddenly become aware of a flying saucer overhead. A beam causes you to blackout. You awaken to the synthesised voice of the on-board computer telling you that it is year 3791 AD and you are needed to fight an invader force. Examination of the computer console reveals that it's an Apple CLVII-r with the 650002-p processor.

DISK #211 is **HOUSE OF SECRETS.** While taking a short cut back to the Main Hall you stumble over the dead bodies of several fellow adventurers. They have been stripped of their armor and weapons. You look around and find a map and an attached note. The note alludes to a treasure shown on the map. Since your purse is light you decide to follow up on the clues shown on the map....

Disk #212 is **SEWERS OF CHICAGO.** A reward of 20 golds for each dead rat turned in brings out the hunters. You are informed that the rats are ruining the city and drastic means are needed to rid the city of the menace. Twenty two have preceded you and none have returned. Ah well, give it a try. Standing on the Madison St. Bridge you look down on murky green waters swirling by. A path leads to the water's edge....

Disk #213 is **SLAVE PITS OF KZORLAND.** A series of treasures are hidden in the pits, with guards of several levels of power. Some can defeat even the strongest adventurer. No one can carry all the treasure to be found there. It will be necessary to be selective in fighting and finding. Finding the remaining pitfalls is up to you.

Disk #214 is an **Alternate Beginners Cave.** Disk 181 is still necessary for the Main Hall. This disk is substituted at the C prompt for the adventure. I won't spoil the cave by clues. It's different. Try it - you may like it.

Disk #215 is **Lifequest.** At the bar in the Main Hall a Centurion buys you a drink. He says that His Lordship needs your experience for a quest. It seems that the other adventurers are too greedy, or not well qualified for the tasks at hand. As you go to get the horses he briefs you on your quest. The Lord's middle daughter (called "The Fox") has come down with a rare and possibly fatal malady. The cure is found in the bark of a tree in Paradise. This is why he needs you....

Disk #216 is **Swordquest.** As you are riding through Camelot on a fine day, your horse loses a shoe. Leaving the beast with the smithy for repairs, you decide to visit your old friend Arthur. Alas the Kingdom is in trouble. Morgan le Fay has taken the fabled sword, Excalibur, and is raising an army to defeat the King. You are enlisted to help recover the weapon.

Disk #217 is **Priests of Xim!** As you travel through the tomb you will find many treasures, and many battles. It's a long trek with many dangers.

Disk #218 is **Heros Castle.** After a long walk on a dusty road you stop at a well for a drink. You become aware of a maiden crying next to the well. She relates that her lover was abducted by a big businessman who lives up in the Castle. You promise to investigate and return him to freedom.

Disk #219 is reserved for a **Utility I** disk.

Disk #220 is **Utility II.** Easy editing and some useful scenes for the game composer.

Disk #221 is **Utility III.** More aids to the designer-builder.

WAP DISK 415:Original 350 Point Adventure!

This adventure, in the CP/M operating system, takes you into the forest at the entrance of a small building. A small stream issues out of one wall... It's a classic.

contd.

The following description of the two new SigMac disks are taken from Tony Anderson's notes.

SigMac 31: Dungeon of Doom/Eliza Talks

The Mac adventure continues. **Dungeon of Doom** is an incredible adventure game. It combines elements of Dungeons and Dragons with a scrolling map on which you encounter all sorts of creatures intent on squelching your quest. After an exciting round of Dungeon of Doom, relax on the psychiatrist's couch and discuss your problems with **Talking Eliza** (alias Mac). Finally Mac breaks his silence with a few well-chosen words.

In the Dungeon of Doom folder:

D of D Manual V2.0 (by John Raymonds) This document will get you started with D of D. Be sure to read and follow the instructions on setting up your disk. If you don't, you won't have room to make it to the fortieth level. The system file on this disk has already been set up with the required fonts and desk accessories.

Dungeon of Doom (by John Raymonds) This is one of the best adventure games available at any price. It has characters with different levels of experience like Dungeons and Dragons and a large multilevel map that you scroll through like a fast action arcade game.

StartupScreen (by John Raymonds) This is the StartupScreen that you have already seen if you have used this disk as the startup.

In the Talking Eliza folder:

Eliza documentation (by Charles Hayden) Read this file for important information on programming Eliza's responses.

Eliza 1.3 (by Charles Hayden) Eliza 1.3 is the best Eliza program I have ever seen. Not only does it talk, but it's programmable. Yes, you can make the rules. Eliza uses a script file that tells it the rules to use in creating a response. Eliza will use the font New York 14 for display. For best results place it on a disk with that font on it.

Eliza.script This is the file that Eliza reads at startup to get its rules for creating responses.

Eliza.classic By telling Eliza to read this file, you can re-run this classic example of an Eliza dialog. Note that you can stop the reading of a file by clicking on one of Eliza's scroll boxes.

Eliza.test When read by Eliza, this file will run the program through a test of all its responses.

MacinTalk Move this file with Eliza. It contains the resources that allow the Macintosh to talk.

In the System folder:

System Use this file on the working disk that the Dungeon of Doom documentation instructs you to set up. It contains only the Control Panel desk accessory and the font files Geneva 9, Geneva 12, Chicago 12, and Monaco 9.

SpeakFile is a very small application that reads a file called TextToSpeak and pronounces it using the MacinTalk System. It is used as the start up application on this disk.

TextToSpeak This is a text file created with MacWrite and saved in text only mode. Words are spelled somewhat differently to make them sound better. Experiment with your own text. End the file with two # symbols.

SigMac Disk 32: Fun & Games II

Games, games, games. Who does not on occasion take a break from **EXCEL**, or **Jazz**, or **Overview**, etc., to play a game? Ever since the day man stored the first bit in the first vacuum tube on the first computer he has been creating games to play on his new device. It seems to be part of the way humans work; we need to play. So don't fight it. With all of these games to choose from you're sure to find one to your liking.

On the Desktop:

Orion V1.0 (by Robert P. Munafo) In case you don't recognize it, this program's icon bears a striking resemblance to the constellation Orion. **Orion** is a space flight simulator. You can travel at several million times the speed of light throughout the solar system and nearby stars.

Space Bubbles (by Bill Sammons) If you liked Galaxian, you'll love Space Bubbles. A menacing armada of alien space ships is attacking the earth. Only you can stop them. So man (or person) your gun and zap a few.

Think Ahead+ 1.2 (by Keith Lambert) A thinking game. Challenge the Mac or a friend. But don't just think of immediate gains--you must think ahead to win this one.

MacBugs! (by Michael Ouye) They're everywhere! They're everywhere! Use the mouse to exterminate the little critters. An arcade game loosely based on centipede.

Pattern Blocks (by Dan Weston) A much more contemplative pastime is to be found in this application. Use simple building blocks to design patterns you can print and save on your disk.

Office Attack (by Ron Vaccaro) Loosen up your mouse arm and cover your head. Your office has taken on a mind of its own and thinks you're no longer necessary. Everything from Mac XLs to pictures on the wall are being tossed at you. Your task is to click on the office equipment as it goes by. The more clicks the more points.

Hang-Man (by Ken Arnold and Dan Winkler) The "Classic," as they say. How else can you play Hang-Man solitaire?

Spline Demo (by Steve Splonskowski) A demonstration of two methods of curve fitting.

CORRECTION TO DECEMBER "BEST OF UBBS"

On Page 53 of the December 1985 issue, in the article, "Best of the Apple Items From UBBS", under the section 'Wisdom", the message from Lee Raesly should have read:

I finally figured out what BIOS means. B)ack I)t O)p, S)tupid.

We regret the error.

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( ) January 7 - WELCOME TO THE WORLD OF APPLE - ( ) February 3
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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 ( ) Monday, February 17 and 24

The following "non-regular" tutorials are being offered at the office on Saturday mornings at 9:00 AM for the Apple // family. Attendees should bring their computer, monitor (if one has not been reserved for you) and other special equipment noted below.

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