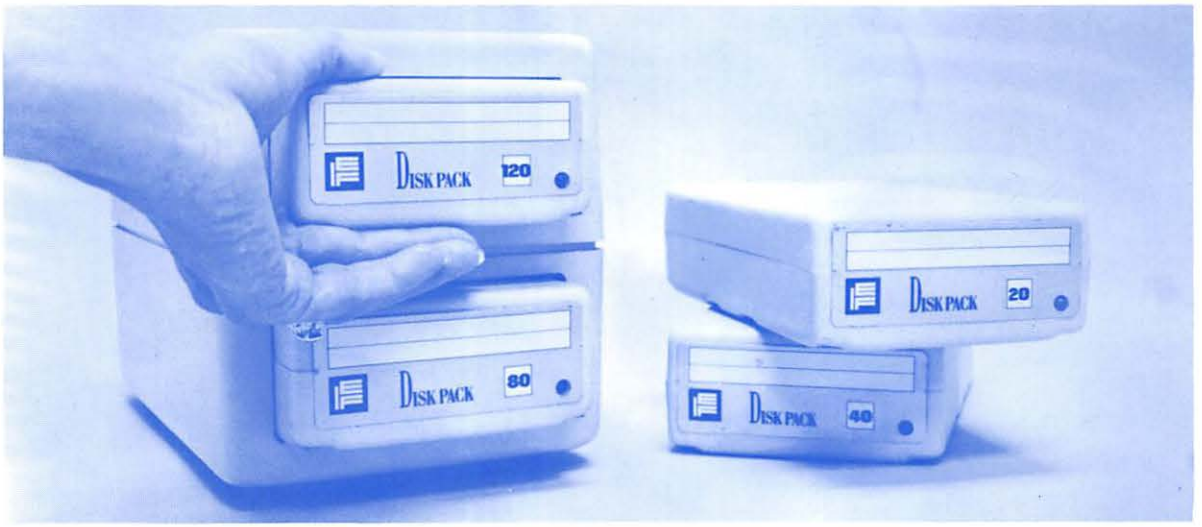
$2.50

Washington Apple Pi

Volume 10 December 1988 Number 12

Computer Programs and Cognitive Learning Styles: Part 2 17
Foxbase+/Mac 31
Taylor Pohlman and GS Basic: Part 2 68
Exploring Fractals and Chaos: Six Programs Reviewed 72
WAP News 9
WAP Hotline 6
WAP Calendar 8
Software Reviews
GEOS 27
GAP/Publish It Revisited 28
AppleWorks GS: Part 1 30
In Search of a Little Number Crunching: Mathview Professional 55
HardWare Reviews
Cirrus 60 Megabyte Hard Disk 27
PC Transporter 22
Games
Sargon 4 25
GS Games: Hardball 26
Wizardry 5 29
Balance of Power—1990 edition 38
Comment
FirST, LaST, or GliTZ 24
How to Think of a Catchy Title 24
Macinations: What's NeXT Apple? 58
Tutorial
HyperCard Scripting Error Correction 34
Apple Q&A 48
On HyperCard Part 5: HyperCard and CASE Tools 50
Writing XCMDs in Lightspeed C 52
MacNovice 62
Mac Q&A 64
Regulars
The Musical Apple: Symphony Orchestra in a Box 19
Best of the TCS 40
II GS Stuff 41
Bits & Bytes 47
Best of the Mac TCS 60
On the Trail of Apple III 66
Classified, Job Mart 78
Disketeria 80

The Disk Pack®



TOTAL SECURITY FOR "PRIVATE," "SENSITIVE," "PROPRIETARY," "EYES ONLY" DATA FILES.

PORTABLE: Each Pack is a light 2 lb. module slightly larger than a paperback book.

MODULAR: To each user or application their own fully dedicated standard-sized Pack from 20 MBytes to a whopping 120 MBytes (and more soon!)

REMOVABLE: Slide a Pack out and take it home, mail it out or lock it up. It's easy!

RELIABLE: Patented fan system keeps the drives cool. Shock mounted drive mechanism, rugged casing, carefully engineered shock absorbers and a built-in controller in each Pack make it a standard in reliability.

SAFE: Airtight design encloses the read/write heads, controller and media in one case, making it four to five times safer than other removable cartridges.

FAST: Access times as low as 13ms makes the Disk Pack the fastest drive on the market in its category bar none. And it offers lightning fast backups.

COMPATIBLE: Dual-ported SCSI connection enables you to daisy chain several Packs on your Macintosh®, IBM™ or PS/2™. No matter what computer you use now, or plan to use in the future, the Disk Pack remains at the heart of your system.

IBM and PS/2 are registered trademarks of the International Business Machine Corporation.
Macintosh is a registered trademark of Apple Computer Inc.

Authorized dealer, for additional information contact:

TEMPEST **Products Incorporated** (703) 450 9090 FAX (703) 450 5223

1439 Shepard Drive, Sterling, VA 22170

Clinton Computer

- 1905 K Street, NW, Washington, DC (202)223-0900
- 8032 Leesburg Pike, Vienna, VA (703)442-3800
- 277 S. Washington St, Alexandria, VA (703)838-9700
- 12204 Rockville Pike, Rockville, MD (301)881-2810

Authorized Dealer

- 6443 Old Alex. Ferry Rd, Clinton, MD (301)856-2500
- 9636 Ft. Meade Rd, Laurel, MD (301)953-1110 or (301)792-0600
- Educational Sales (301)868-0002
- Government and Corporate Sales (301)599-9555

Congratulations On Your Tenth Anniversary!

Washington Apple Pi

The Best Apple Users Group in the Country!

The Owners and Staff of Clinton Computer

DISCOUNT POLICY FOR WASHINGTON APPLE PI MEMBERS

CLINTON COMPUTER offers Washington Apple Pi members a 25% DISCOUNT OFF THE LIST PRICE on all Apple-brand peripherals and AppleCare. For upgrades, the 25% discount applies to both the parts and normal labor rate. Discount is available to persons who have been Pi members for at least 3 months. Discount cannot be applied retroactively. Pi members need to present their cards up-front. Discount cannot be used in combination with other promotions. Products on allocation from Apple are excluded from this offer. Clinton Computer reserves the right to change this policy at any time. Apple, the Apple logo, Macintosh, AppleShare and LaserWriter are registered trademarks of Apple Computer, Inc. Apple products are available only from authorized Apple dealers. They are not available by telephone or mail order.

JOY

MICROTECH INTERNATIONAL INC.

Hard Disks
Nova 30..... $629
Nova 50..... $849

Aox And Radius Accelerators
for Plus, SE
Starting at.....**$349**

Internal Hard Disks
for Mac II and SE
40 meg, 80 meg
12 ms Access
Starting at **$719**

2400 Baud Modem
With Cable
5 Year Warranty
Only **$199**

Full Support for Lisa/Macintosh XL
Get **MacWorks Plus** for Macintosh Performance!
Internal **800K Drive** and **20 Meg Drives** Available

radius

Large Screens
for Plus, SE, II
Full Page Display.....**$1490**
Two Page Display.....**$1990**

We Buy and Sell Used Macs
We Service Every Product We Sell

MID-ATLANTIC TELESIS
4930A EISENHOWER AVE.
ALEXANDRIA, VA. 22304
823-4788
Mon.-Fri. 9-6 and Sat. 10-5

Memory Upgrades for all Macs
Simms in Stock
Installed While You Wait!

Olympia NP 30 Printer
100% Compatible
Only **$299**

GCC TECHNOLOGIES

Laser Printers
P L P
B L P
Call about Specials

Laser Toner Cartridges
Only $59
100% Guaranteed
Quantity Discounts
Free Delivery

is Macintosh

Officers and Board of Directors

President	-Bob Platt	(703) 486-1466
Vice President-Apple Mtg	-Ray Hakim	(301) 649-1891
Vice President-Mac Mtg.	-Eric Rall	(301) 596-0004
Treasurer	-Edward Myerson	(703) 759-5479
Secretary	-Peter Combes	(301) 251-6369
Directors	-Harvey Kaye	(301) 493-6875
	-Priscilla Myerson	(703) 759-5479
	-Leon Raesly	(301) 439-1799
	-Nancy Seferian	(202) 333-5817
	-Bob Shaffer	(301) 552-9214
	-Lynn R. Trusal	(301) 845-2651
	-Cynthia Yockey	(301) 565-3951
Past President	-Tom Warrick	(301) 654-8060

Office Managers

	-Elaine Halleck	(301) 654-8060
	-Kim Knutson	(301) 654-8060

Journal Staff

Managing Editor	-Tom Piwowar	(202) 223-6813
Editorial Review Board	*(more volunteers needed)*	
Reviews	-Raymond Hobbs	(301) 490-7485
Apple	-Leon Raesly	(301) 439-1799
Mac	-*open*	
Advertising Manager	-*open*	(301) 654-8060
Head Software Librarian	-Jim Little	(301) 762-3215
Store Distribution	-Andy Wallo	(703) 525-8060

Columnists

Apple ///	-Dave Ottalini	(301) 681-5792
Developer's View	-Jim Lanford	(301) 589-6300
GameSIG	-Steven Payne	(202) 832-6622
Mac Bits & Bytes	-Lynn R. Trusal	(301) 845-2651
MacNovice	-Ralph Begleiter	(301) 340-3296
Meeting Reporters	-Karen Rall	(301) 596-0004
	-Joe Wagovich	(703) 569-3665
Musical Apple	-Raymond Hobbs	(301) 490-7485
Pascal and Q & A	-Bob Platt	(703) 468-1416
Softviews & Excel	-David Morganstein	(301) 972-4263
StockSIG	-Andrew Thompson	(301) 270-6790
Reviewer	-James Buger (day)	(703) 264-5112
Reviewer	-Raymond Hobbs	(301) 490-7484
Reviewer	-David Morganstein	(301) 972-4263
Reviewer	-Leon Raesly	(301) 439-1799
TCS - Apple	-Lou Pastura	(703) 560-1477
TCS - Apple	-Paul Schlosser	(301) 831-9166
TCS - Mac	-Bill Baldridge	(301) 779-8271
Telecom. SIG	-David Harvey	(703) 578-4621

Volunteers

	**Call only evenings 7:00-9:30, M-F*	
Group Purchases	*Rich Wasserstrom	(202) 544-8327
Head Reading Lib.	-Walt Francis	(202) 966-5742
Apple Tea Coord.	-Amy Billingsley	(301) 622-2203
Arrangements	-Leom Moore	(301) 946-2642
Dealer Rel. Comm.	-John Alden	(202) 686-1656
	-Harvey Kaye	(301) 493-6875
	-Bob Platt	(703) 486-1466
	-Bernie Urban	(301) 229-3465
	-Rich Wasserstrom	
Legal Counsel	-Charles Calkins	
	-Dan Dwyer	(301) 445-2895
Membership	-Dana Schwarts	(301) 654-8060
Public Relations	-Cynthia Yockey	(301) 565-3951
SIGs & Slices Coord.	-Bob Shaffer	(301) 552-9214
Hotline Coordinator	-Larry Feldman	(202) 546-9556

Volunteers (continued)

Telecom SYSOP	-Leon Raesly	(301) 439-1799
Tutorials	-Lynn R. Trusal	(301) 845-2651
Volunteer Coordinator	-David Morganstein	(301) 972-4263

Disketeria Volunteers

DOS 3.3 Librarian	-Jim Little	(301)762-3251
Macintosh Librarian	-David Weikert	(301)963-0063
	-Martin Milrod	(301) 464-5981
Pascal Librarian	-Mike Hartman	(301) 445-1583
ProDOS-CP/M Libr.	-John T. Bell	(301) 441-9069
IIgs Librarian	-Sam Knutson	(301) 498-8411
	-Richard Sanders	(703) 450-4371
Apple II Disks	-Jim & Nancy Little	(301) 762-3215
John Bell	Bob Johnson	
Bob Platt	John Ruffatto	
Mac Library		
Dave Benbennick	Rick Capman	
David Condit	Hampton DeJarnette	
John DeMarco	Garry Elliott	
Ben Frank	Andy Gallant	
Gary Grey	Mary Hockmeyer	
William Jones	Ralph Mullendore	
Fred Rodgers	Tony Salerno	
Charles Sicard	Bob Soule	
Joe Swick	Bob Vandegrift	

SIG Chairs

Annapolis Slice	-Craig Contardi	(301) 674-2344
AppleWorks	-Ken DeVito	(703) 960-0787
Apple IIgs	-Ted Meyer	(703) 893-6845
Apple ///	-David Ottalini	(301) 681-5792
	-Tom Bartkiewicz	(703) 435-3295
AVSIG	-Nancy Seferian	(202) 333-5817
Columbia Slice	-Ann MacKay	(301) 740-4482
	-Paul Retz	(301) 596-2185
CP/M	-Charles Franklin	(301) 997-9138
DisabledSIG	-Jay Thal	(202) 244-3649
Desktop Publishing SIG	-Tom Piwowar	(202) 223-6813
EDSIG	-Peter Combes	(301) 251-6369
Federal SIG	-Lyle Eesley	(301) 740-8472
	-John Nelson	(703) 425-1832
Frederick Slice	-Oscar Fisher Jr.	(301) 694-9237
GameSIG	-Charles Don Hall	(301) 864-2751
Emeritus Chair	-Ron Wartow	(607) 257-4873
HyperCard	-Bob Platt	(703) 486-1166
LawSIG	-*open*	
Mac Programmers	-Bob Shaffer	(301) 552-9214
	-Bruce Jacobs	(301) 439-7812
Music SIG	-Bill Bittle	(301) 236-9898
Pascal (PIG)	-Vincent Zenger	(301) 593-3985
PI-SIG	-Bob Golden	(301) 593-6165
StockSIG	-Peter Kasper	(703) 620-4071
Telecomm. SIG	-Allan Levy	(301) 340-7839

Washington Apple Pi, Ltd.
8227 Woodmont Avenue, Suite 201
Bethesda, MD 20814

Business Office (301) 654-8060

Telecommunications System (301) 986-8085

©1988, Washington Apple Pi, Ltd.

WAP OFFICERS STAFF & VOLUNTEERS

THE OTHER CORNER

Hello!

This is member #5249 taking the editorial helm from member #0007. The transition period has been rather short and we've had to do a bit of scrambling to put this issue together before the printers left for a long Thanksgiving holiday. I hope that you will enjoy the the fruits of our labor.

As you've no doubt noticed this issue looks a bit different than last month's. While the Journal has been changing its appearance gradually over recent months we've taken the opportunity of this change in editorship to accelerate the change. Over the last few months a Journal Improvement Committee has been considering the appearance of the Journal. This new format is my attempt to address the committee's concerns.

Last month the Journal incorporated three column format for some of its pages. This month it is almost all in three columns (to better accommodate screen shots and program listings in a double width column). We've also changed the typeface from Times to Palatino. The faces are similar but Palatino has relatively taller lower case letters that we hope you will find easier to read.

We've also beefed up the type used for article headings and added tag lines to help you spot what you want to read. But most important of all, we have not changed the content of the Journal one iota. While I hope that you will find the new format easier to read, I trust that you will be reading exactly the same uniquely informative mix of news and reviews that have made the WAP Journal must reading for so many.

Please let us know what you think of this issue of the Journal. What you see here is not set in stone but is merely charged magnetic domains on a piece of rusty plastic. The Journal will continue to evolve. Your input is essential to making sure it evolves in the best way possible.

Finally I want to thank all of the people who have put in long and intense hours over the last week to get the Journal into your hands right on its usual schedule. It is truly gratifying to see such a diverse group of volunteers rising to the occasion to keep the Pi running smoothly. Perhaps, dear readers, you may be inspired to give in kind. Please volunteer to write or help manage the Journal, to keep the Disketeria stocked with the latest programs, to organize meetings, keep the Pi Telecommunications System running smoothly, teach others what you know about computers, run a SIG, bail out others via the Hotline, or to do any of the countless other tasks that are necessary to keep the Washington Apple Pi the best computer user group in the country.

Your new editor, Tom Piwowar, is also chairman of WAP's Desktop Publishing SIG and President of Thomas J. Piwowar and Associates, Inc., a consulting firm specializing in desktop publishing.

Please address comments to him at 1500 Massachusetts Ave. NW, Suite 34, Washington DC 20005.

First Virus Conviction!

Donald Gene Burleson was convicted on Sept 19, 1988 of criminal charges for creating a worm type virus which deleted tens of thousands of personnel records at his former insurance company employer. He is awaiting sentencing. I previously reported that Mr. Burleson was responsible for the so called "Scores" virus that permeated the federal government but this was apparently incorrect. The "Scores" virus case has apparently not been solved and is still under investigation. — Lynn Trusal

NeXT SIG Forming

An organizational meeting for WAP's NeXT SIG will be held on Tuesday, December 13 at 7:30 p.m. Ron Weissman, who works in the President's Office of the University of Maryland, and serves on the advisory boards of Apple, NeXT, Sun and Microsoft will present a talk on "The Future of DeskTop Technology." The meeting will be at the Thomas Pyle Intermediate School, 6311 Wilson Lane, Bethesda MD— Hugh ONeill

Authors

Bach, Stephen E. 22
Begleiter, Ralph 62
Cave, Katherine 10
Childers, Tom 10
Feldman, Larry 11
Goldsamt, Dan 26
Granite, David 29
Gursky, David 60
Harris, Leo 34
Hayman, Gary 28
Hobbs, Raymond 19
Hoffman, A.E. 30
Jacobs, Bruce 25
Knight, Kenneth 50
Kowalski, Jamie 38
Lomartire, John 68
Meyer, Ted 41
Nelson, John 11
Oringel, Bob 27
Ottalini, David 66, 68, 80
Payne, Steven 13
Pecora, Lou 55
Piwowar, Tom 4
Platt, Robert C. 5, 13, 48
Potts, Paul 52
Raesly, Leon K. 14
Seelig, Fred 72
Shapiro, Phil 24
Tarantino, Paul 12
Trusal, Lynn R. 47
Van Beekum, John R. 27
Van Zee, Linda 9, 17
Weikert, David 80
Wolov, Robb 58
Yourshaw, Michael 31

Advertisers

Award Publications 21
Carver Publishing 46
Clinton Computer 1
Computer Age 36, 37
Computer Ware 21
Desktop Perfect 67
DiscoTech 18
Hagerstown Bookbinding 59
Imprints 35
Landmark Computer 71
Laser's Resource 39
Mac Heaven 71
Mac Source 15
MacCorner 44, 45, 90
MacInOffice 43
MacTemps 16
MacTography/P.M. Graphics 73
Mid Atlantic Telesis 2
Multisoft Resources 18
NEXO 88
PC Resources 18, 65
PLS 39
Satellite Scientific 23
Tempest 0, 89
Thinking Tools 59

Tenth Anniversary

WAP's Tenth Anniversary Celebration is almost here. If you have not yet made your dinner reservations for our banquet on Friday, December 16, there is still time for some last minute additions.

Our banquet site is the Crystal Gateway Marriott Hotel, 1700 Jeff Davis Highway in Arlington. It is connected by a tunnel to the Crystal City Metro stop. There is reduced rate parking available at the hotel for our banquet guests. To reach the hotel, take Route 1 to the 15th Street exit. Go west one block to Eads Street and turn left. The hotel is on Eads between 15th and 18th Street.

We will have cocktails (cash bar) from 7 to 8 p.m. followed by a dinner and speeches. To reserve a spot, send $25 per person to the WAP Office.

On Saturday, we will return to USUHS for our main presentations. Larry Tessler, Vice President for Advanced Technology at Apple, will give the keynote address. Other speakers are: Andy Hertzfeld, a member of the original Mac team and the designer of many radius products, and Don Williams, who was instrumental in the launch of the Apple /// and is president of Productivity Software. Steve Brecher, of Suitcase fame, Kurt Schmucker, of MacApp fame, and Tom Woteki, of Dr. Wo Pascal fame, will deliver technical sessions.

Rich Williams, who joined Apple in May 1979, will be a featured speaker on Saturday, December 17. Rich worked on the Apple II+, //c, //e and IIgs, various Apple disk drives, and is best know as the compiler of the DOS Programmer's Toolkit.

Walt Mossburg of the Wall Street Journal has assembled an excellent panel of Computer Journalists: Jerry Burrell, Editor of MacWorld; Tom Weishaar, Editor of Open-Apple; Fred Davis, Editor of MacUser; and Bob Lindstrom, Editor of A+. We are working with USUHS to offer lunch in the cafeteria. This will help make Saturday an all-day event. We are grateful to Clinton Computer for generously sponsoring our event.

Garage Sale. The semiannual Garage Sale will be held on December 3 in the cafeteria of the Charles Woodward High School, 12111 Old Georgetown Road in North Bethesda. From the Beltway, take the Old Georgetown Road exit and go north past Democracy Blvd and Tuckerman Lane. The school is on your right.

Don't miss this chance to pick up last minute Christmas and Hanukkah presents.

Shows and Membership. Our Membership Committee, chaired by Ray Hobbs, has developed an exciting program for recruiting new members. His plans for a membership contest are described in a separate article in this issue.

Nancy Seferian, a member of the Committee has produced a "thermometer" chart to help us plot our progress toward our 7,000 member goal. The new chart is on display at our monthly meetings and at the WAP Office. Nancy also coordinated our booth at the Federal Computer Conference in October. Special thanks to Harry Bacas, Barry Bedrick, Dave Benbennick, Hampton De Jarnette, John DeMarco, Larry Feldman, David Harris, Bob Golden, Debbie Lashbrook, and Bill Logan for staffing the booth. Thanks are also due John DeMarco, Tom Piwowar and Bob Shaffer for representing the Pi at a recent writer's convention.

Columbia Slice. WAP's Board of Directors approved a charter for a new Slice in Columbia, MD on November 9. The new Slice meets on the first Thursday of each month at the Miller Branch Library in Ellicott City MD. This group will provide our members who live in the Baltimore-Columbia area with an opportunity to attend monthly meetings at a convenient nearby location.

New Projectors. When visiting the Boston MacWorld Expo last August, Marty Milrod and I were very impressed with the new Viewframe II +2 projectors. These LCD units are an improvement on our present projectors because they represent colors with various grey scales and can handle output from a Mac II. nView, which manufactures these units, has generously agreed to upgrade both of our projectors to these new units. They arrived last week and will debut at our November main meeting.

Changes in the Journal. This issue has a new design, which is the product of Tom Piwowar, who many of you know as the Chairman of our Desktop Publishing SIG. Tom has agreed to serve as the new Editor of the WAP Journal.

As you know, the Journal was edited from its inception by Bernie Urban, who deserves credit for its present national reputation. Bernie and his wife Gena have devoted innumerable hours to serving the Pi, first as volunteers and later as our paid staff. I have enjoyed working closely with them on a number of projects over the years including editing our Member Reference Books, compiling Perfect Pascal Programs, and serving on various WAP Committees together. Bernie and Gena have probably had more contact with our members than any other single individuals, and as Office Managers, have shouldered the burden of the administrative tasks of keeping the Pi running smoothly.

On November 1, Gena and Bernie decided to pursue other opportunities, and I accepted their resignations with great regret. I am sure that all members of the Pi join me in thanking them for their devoted service and wish them and their Urban Enterprises venture success in the future.

Although the Urbans left a void which is difficult to fill, I am pleased to announced that we have hired Elaine Halleck and Kim Knutson to work in our Office on an interim basis. Elaine has a degree in Graphic Design and is an avid Mac user, while Kim has extensive experience on the Apple II. Please stop by our Office and say hello to Elaine and Kim.

Tax-exempt Status. Special thanks to our legal counsel Charles Calkins and our Treasurers Priscilla and Ed Myerson for their work on our application for a Section 501(c)(3) tax exemption. We still hope to file the application by the end of 1988.

— Robert C. Platt

WAP HOTLINE

Have a computer problem? The following club members have volunteered to help other club members.

Guidelines for Hotline Use

- Hotline is for club members only.
- Remember that the people listed are volunteers: be courteous; ask for help, not for a job to be done for you.
- Respect all telephone restrictions where listed—no calls after 10:00 PM except where indicated.
- Calls regarding commercial software packages should be limited to those you have purchased. Do not call about software for which you have no documentation.
- All telephone numbers are home numbers unless otherwise specified.
- When requests are made to return calls, long distance calls will be collect.

Apple II

General
Dave Harvey (703) 578-4621
John Wiegley after 2:15 (703) 437-1808

Accounting Packages
BPI Programs
Jaxon Brown (301) 350-3283
BPI & Howardsoft(Tax)
Otis Greever (615) 638-1525
Dollars & $ense
Barry Fox (717) 652-2899
Home Accountant
Leon Raesly (301) 431-0853

APPLE SSC
Bernie Benson (301) 951-5294

AppleWorks
Ken DeVito (703) 960-0787
Bob Martz (301) 795-5689
Ray Settle (301) 647-9192
Harry Erwin (703) 391-0295
Michael Osborn (301) 505-1637

AppleWorks Data Base
Morgan Jopling (301) 261-3886

Communications Packages
ASCII Express
Dave Harvey (703) 578-4621
ProTerm
Allan Levy (703) 578-4621
Talk is Cheap/Pt.toPt.
Barry Fox (717) 652-2899

Data Bases
dBase II
John Staples (703) 255-6955
dBase II&III, Data Perfect
Leon Raesly (301) 431-0853
Profiler 3.0
Barry Fox (717) 652-2899

Dvorak Keyboard
Ginny Spevak (202) 362-3887

Hard Disk
CMC (not CMS)
Barry Fox (717) 652-2899
Corvus Omninet
Tom Vier (BBS) (301) 986-8085
Corvus
Leon Raesly (301) 431-0853
Sider
Jaxon Brown (301) 350-3283
Otis Greever (615) 638-1525

Hardware - //c
Michael Osborn (301) 505-1637

Languages
Applesoft
Louis Biggie (301) 967-3977
Peter Combes (301) 251-6369
Leon Raesly (301) 431-0853
John Wiegley after 2:15 (703) 437-1808
John Love (703) 569-2294
Integer Basic
John Wiegley after 2:15 (703) 437-1808
John Love (703) 569-2294
Machine
Ray Hobbs (BBS) (301) 490-7484
John Love (703) 569-2294
Pascal
Michael Hartman (301) 445-1583
C and TML Pascal
Harry Ewin (703) 391-0295

Operating Systems
Apple DOS
John Wiegley after 2:15 (703) 437-1808
CP/M
Art Wilson (301) 774-8043
ProDOS
John Love (703) 569-2294
John Wiegley after 2:15 (703) 437-1808
ProDOS 8 and 16
Barry Fox (717) 652-2899
RWTS, Disk structure
John Wiegley (703) 437-1808

Print Shop
Thomas O'Hagan (301) 593-9683

Spreadsheets
General
Walt Francis (202) 966-5742
MagicCalc*SuperCalc2.0
Leon Raesly (301) 431-0853
Terry Prudden (301) 933-3065

Telecommunications
Alan Levy (301) 340-7839

TimeOut Series
Morgan Jopling (301) 261-3886

Utilities:ProSel
Barry Fox (717) 652-2899

Word Processors
General
Walt Francis (202) 966-5742
Apple Writer II
Dianne Lorenz (301) 530-7881
Leon Raesly (301) 431-0853
Letter & Simply Perfect
Leon Raesly (301) 431-0853
Mouse Write
Barry Fox (717) 652-2899
ScreenWriter II
Peter Combes (301) 251-6269
Gene Carter (202) 363-2342
Word Handler
Jon Vaupel (301) 593-3316
Word Perfect
James Edwards (301) 585-3002
Henry Donahoe (202) 298-9107
Word Star
Art Wilson (301) 774-8043
Michael Osborne (301) 505-1637

Apple IIgs

General
Barry Fox (717) 652-2899

General/Monitor
Neil Walter (301) 946-4526

General/PaintWorks+
Paul Tarantino (703) 455-7670

//e Upgrade
Morgan Jopling (301) 261-3886

APW
Andy Gavin (703) 734-3049
Jim Frison (703) 525-9395

Deluxe Paint II
Rich Sanders (703) 450-4371

GS BASIC
Barry Fox (717) 652-2899

Multiscribe GS
Ray Settle (301) 647-9192

Newsroom/Pinpoint
Chuck Ward before 9pm (703) 830-3720

Telecommunications
Dale Smith (301) 762-5158
Alan Levy (301) 340-7839

TimeOut Series & Utilities: ProSel
Chuck Ward before 9pm (703) 830-3720
Barry Fox (717) 652-2899

VIP-Pro/Multiscribe
Jim Frison (703) 525-9395

816 Paint/Writr's Ch.El
Andy Gavin (703) 734-3049

Macintosh

General
Jeff Alpher to midnight (301) 630-2036
Bob Wilbur (703) 379-2960
Donald Schmitt (717) 334-3265

Art & Video
Nancy Seferian (202) 333-5817

Borland Products
Doug Ferris day only (800) 826-4768

Data Bases
Fourth Dimension
Bob Pulgino (202) 474-0634
FileMaker+
Tom Parrish (301) 654-8784
Helix
Jim Barry to midnight (703) 662-0640
Harvey Levine (301) 288-9380
MS-File
John Love (703) 569-2294
John Spencer (301) 730-1084
Omnis 3 & 3+
Paul Tabler (703) 278-8657
Jeff Alpher to midnight (301) 630-2036
OverVue
J.T.Tom DeMay, Jr. (301) 461-1798
Tom Parrish (301) 654-8784

Desktop Publishing
General
Jay Rohr (301) 655-0875
PageMaker
Kate Burton (301) 621-6351
Eleanor Sontag (301) 251-0695
ReadySetGo
Jim Graham (703) 370-5737
Marty Milrod (301) 464-5981

Graphics
General
Bill Baldridge (301) 779-8271
Jay Rohr (301) 655-0875
Adobe Illustrator
Ling Wong (703) 378-5102
Canvas
Bill Baldridge (301) 779-8271
Tom Parrish (301) 654-8784
MacDraft
Bob Wilbur (703) 379-2960
MacDraw
Tom Berilla (301) 434-3256
Tom Parrish (301) 654-8784
John Spencer (301) 730-1084

HyperCard
John Love (703) 569-2294
Holger Sommer (301) 474-3467
Rick Chapman (301) 989-9708

Inside Mac
Jon Hardis (301) 330-1422

Languages
Pascal
Michael Hartman (301) 445-1583
Machine
Ray Hobbs (BBS) (301) 490-7484
MS BASIC
John Love (703) 569-2294

MacMoney
Chuck Sicard (301) 963-2879

MacProject
Jay Lucas (703) 751-3332

Spreadsheets & Graphics
General
David Morganstein (301) 972-4263
Bob Pulgino (202) 797-0879
Excel
David Morganstein (301) 972-4263
Mark Pankin (703) 524-0937
Jim Graham (703) 370-5737
Dick & Nancy Byrd (703) 978-3440
MultiPlan
John Boblitz (301) 356-9384
John Love (703) 569-2294

Sidekick
Ray Hobbs (BBS) (301) 490-7484

Telecommunications
Alan Levy (301) 340-7839

Thinktank-More
Jim Graham (703) 370-5737
Tom Parrish (301) 654-8784

Word Processors
Word
Marty Milrod (301) 464-5981
Harris Silverstone (301) 435-3582
WriteNow
Bill Baldridge (301) 779-8271
WordPerfect—Mac
Curt Harpold (202) 547-8272

General

Franklin & Laser 128
Bob Martz (301) 795-5689

Games-Apple II
Charles Don Hall (301) 864-2715
John Wiegley after 2:15 (703) 437-1808

Games-Mac
Perri Mongan (301) 572-5459

IBM
Ray Hobbs (BBS) (301) 490-7484
Leon Raesley (301) 431-0853

Math-OR Applns
Mark Pankin (703) 524-0937

Modems-General
Alan Levy (301) 340-7839
Hayes Smartmodem
Bernie Benson (301) 951-5294
Practical Peripherals
Alan Levy (301) 340-7839

Music Systems
Ray Hobbs (BBS) (301) 490-7484

Printers-General
Walt Francis (202) 966-5742
Leon Raesley (301) 431-0853

MX-80
Jeff Dillon (301) 662-2070

Stat Packages
David Morganstein (301) 972-4263

Stock Market
Robert Wood (703) 893-9591

Time-Sharing
Dave Harvey (703) 578-5621

WAP HOTLINE

Put It Back!

As you read this Journal, get help from the Hotline, and attend the general and SIG meetings remember that This is the work of volunteers.

You too can be a volunteer!

Call the Pi office , the Journal editors, the disketeria coordinators, or the Special Interest Group chairs and tell them what you can do.

Pi Office...(301) 654-8060 **Volunteer coordinator, David Morganstein...(301) 972-4263**

CALENDAR AND SIG NEWS

December

1 Thursday
7:30p ..... Games SIG ..... office
7:00p ..... Columbia Slice ..... Ellicot City

3 Saturday
9:00a ..... Garage Sale ..... Woodward HS
9:30a ..... dPub Seminar: Color Presentations ..... Vienna

5 Monday
Journal editorial deadline
7:15p ..... Tutorial: Intro. to Mac ..... Office

6 Tuesday
7:30p ..... Tutorial: Welcome to the World of Apple ..... office

7 Wednesday
Journal advertising deadline
7:30p ..... Mac Programmers ..... office
7:30p ..... Desktop Pub. SIG ..... PEPCO
7:30p ..... dPub Seminar: Color Output ..... D.C.

8 Thursday
8:00p ..... Stock SIG ..... office

10 Saturday
9:00a ..... Tutorial: Telecomm. Apple // ..... office
9:30a ..... dPub Seminar: Color Output ..... D.C.
9:30a ..... Annapolis Slice ..... Anne Arundel co.
1:00p ..... Tutorial: Telecomm. Mac ..... office
1:30p ..... dPub Seminar: Design & Production ..... D.C.
2:00p ..... Music SIG ..... McLean

12 Monday
7:15p ..... Tutorial: Intermediate Mac Skills ..... office

13 Tuesday
7:30p ..... Tutorial: How to Use Your Apple Software ..... office
7:30p ..... NeXT ..... Thomas Pyle Intermediate School

14 Wednesday
7:30p ..... Board meeting ..... office
7:30p ..... dPub Seminar: Design & Production ..... D.C.

15 Thursday
8:00p ..... Pascal SIG ..... office
..... Annapolis Mac SIG ..... West St. Branch Library

16 Friday
7:00p ..... 10th Anniversary Banquet ..... Crystal Gateway
..... Marriot Hotel, 1700 Jef. Davis Hwy., Crystal City, Va.

17 Saturday
9:00a ..... 10th Anniversary Meeting ..... USUHS
9:30a ..... dPub Seminar: Using Scanners ..... McLean

19 Monday
7:30p ..... Tutorial: Productivity on Mac ..... office
7:00p ..... Apple //gs SIG ..... McLean

20 Tuesday
7:30p ..... Tutorial: Popular Applications ..... office

21 Wednesday
7:30p ..... Excel SIG ..... office
6:30p ..... AV SIG ..... BCC
7:30p ..... Hypertalk SIG ..... Arlington

22 Thursday
7:30p ..... Telecomm SIG ..... office

26 Monday
Holiday: office closed

27 Tuesday
8:00p ..... Mutual Fund SIG ..... office

28 Wednesday
7:30p ..... Apple /// SIG ..... office

Apple IIGS SIG the Monday after the regular WAP meeting. Note: In December, it meets at Dolley Madison Library, McLean, VA; in January at Thomas Pyle Intermediate School, Bethesda, MD.
Apple /// SIG 4thWednesday; in the office, 7:30 PM.
AV SIG (arts and video) 3rd Wednesday at Bethesda-Chevy Chase HS.

January

2 Monday
Holiday: office closed

3 Tuesday
7:30p ..... Tutorial: Welcome to Apple ..... office

4 Wednesday
7:30p ..... Mac Programmers ..... office
7:30p ..... Desktop Pub. SIG ..... PEPCO

5 Thursday
7:30p ..... Games SIG ..... office
7:00p ..... Columbia Slice ..... Ellicot City

9 Monday
7:15p ..... Tutorial: Intro. to Mac ..... office

10 Tuesday
7:30p ..... Tutorial: How to Apple Software ..... office

11 Wednesday
7:30p ..... Board meeting ..... office

12 Thursday
7:30p ..... Tutorial: Intro. to Mac ..... Fairlington
8:00p ..... Stock SIG ..... office

14 Saturday
9:30a ..... Annapolis Slice ..... Anne Arundel co.
2:00p ..... Music SIG ..... Laurel

16 Monday
7:15p ..... Tutorial: Intermediate Mac ..... office

17 Tuesday
7:30p ..... Tutorial: Popular Apple Applications ..... office

18 Wednesday
7:30p ..... Excel SIG ..... office
6:30p ..... AV SIG ..... BCC
7:30p ..... Hypertalk SIG ..... Arlington

19 Thursday
7:30p ..... Tutorial: Intermediate Mac ..... Fairlington
8:00p ..... Pascal SIG ..... office

23 Monday
7:15p ..... Tutorial: Productivity on the Mac ..... office

24 Tuesday
8:00p ..... Mutual Fund SIG ..... office

25 Wednesday
7:30p ..... Apple /// SIG ..... office

26 Thursday
7:30p ..... Tutorial: Productivity on the Mac ..... Fairlington

28 Saturday
9:00a ..... WAP Meeting ..... USUHS
noon ..... HyperCard SIG ..... USUHS

30 Monday
7:00p ..... Apple //gs SIG ..... Bethesda

DisabledSIG - Call Jay Thal at 344-3649 for info.
dPub SIG (Desktop Publishing) 1st Wednesday; in the PEPCO Auditorium at 1900 Penn. Ave., NW., 7:30 PM
Excel SIG 3rd Wednesday; in the office, 7:00 PM .
EDSIG for information call Peter Combes.
Fed (Federal) SIG No Dec. meeting; meets Jan. 18 7:30PM at Apple Fed. Sys. Office, 1892 Preston White Drive, Reston,VA.
GameSIG the 1st Thursday; in the office, 7:30 PM.
HyperCard SIG meets after the WAP monthly meeting.
HyperTalk SubSIG 3rd Wednesday; at the Fairlington Community Center in Arlington, 7:30 PM.
Mac Programmers 1st Wednesday; at the office, 7:30PM.
MusicSIG 2nd Saturday. On Dec. 10 at Chris Ehemann's residence, 1725 Susquehannock Drive, McLean, VA. On Jan. 14 at Ray Hobbs residence, 8405 Snowden Loop, Laurel, MD.
PIG, the Pascal Interest Group, 3rd Thursday; at the office, 8:00 PM.
PI-SIG (Program Interface) 1st Monday; at the office, 7:30 PM.
Stock SIG 2nd Thursday; at the office, 8 PM.
Telecom SIG meets after the regular WAP meeting.

MEETING REPORT

COMPUTER LEARNING MONTH

by Linda Van Zee

In celebration of Computer Learning Month, the general meeting for October was a combined Apple II and Mac meeting featuring seven speakers and a short film on the various aspects and uses of computers in education.

The first speaker, Ray Settle, gave a talk on "Using the Microcomputer as a Classroom Tool." Ray demonstrated how one computer can be successfully used in a class of 25 - 30 kids. By using an overhead projection device to display a large representation of the computer screen, the computer can be used as a tool for the teacher in presenting information, ideas, and question. Ray wrote a very good article on this subject for the November WAP Journal.

Dan Lampert, co-founder of Techware, demonstrated Tutor-Tech, which is a HyperCard-like program for the Apple II line. The ease of use and capabilities of this program were impressive. With Tutor-Tech, sophisticated interactive lessons can be created by a person with no programming experience. Dan demonstrated how a short lesson in music could be put together in a little over five minutes. For a review of Tutor-Tech, see Ray Settle's article in the August WAP Journal.

Next, Guy Carbonneau, president of Scientific Capital Corporation in Reston, demonstrated Course of Action by Authorware. Course of Action is an icon-based authoring system for the Mac in which a course is designed by laying out and connecting icons with specific functions on the screen. The program has very good animation facilities where the pathways of objects can be drawn or computed.

After a short break, the film "Apple Classroom of Tomorrow" was shown. This film was about Apple's project of providing a computer for each child in five classrooms around the United States in order to gather information on the effects on students, teachers, and learning in a computer-saturated environment. Besides the computers in the classrooms, each student in the project was loaned a computer to have at home. The film depicted a great deal of enthusiasm by teachers and students.

Robert Ware of Clinton Computer then spoke on "The Importance of Equal Access to Computers in Education." It is a well-known problem that there is an uneven distribution of computers among the schools in the United States. This is creating a widening gap between the "haves" and the "have nots" as far as knowledge and use of the computer. Robert discussed how we, as individuals, can help alleviate this problem by first being aware that the problem exists, becoming involved in service organizations to promote the use of computers in schools, and by encouraging companies to support and contribute to computers in schools.

A demonstration on Course Builder was given by David Wyatt, who heads the program for Computers in Education and Training at Trinity College. Course Builder, like Course of Action, is an icon-based authoring system for the Mac. The demonstration included a very nice frog disection exercise. The program has some good music creating and handling features. David also talked about how to set up a low cost interactive video system using an Apple IIe and a compact disk video player.

Reubin Morningstar talk about the Potomac Edison community service project to stimulate use of computers in schools. One outcome of this project was a college level course on cell biology developed with HyperCard and a Mac II, which Reubin demonstrated. This program was most impressive. The simulated book complete with table of contents and glossary, had small animated sequences along with text on each "page", and full-screen animated sequences that could be referenced by clicking on an icon in the "margin". The color, speech, detail, animation, and ease of access to any part of the "book" made this courseware remarkable.

The representative from NeXT showed a slide show on Steve Job's new workstation. Although not as exciting as actually seeing the workstation itself, the slides depicted fairly well the architecture and capabilities of the machine. The NeXT workstation combines enormous computing power with quality stereo sound and high resolution display. The first machines will have only black and white screen capability, with color capability in the near future. The computer will use an optical laser disk drive with read/write removable disks that will hold 256 megabytes of memory each. The workstation, priced at $6,500, is targeted for universities.

The diversity of subjects and knowledge and talent of the speakers made this an informative and enjoyable meeting.

MEMBERSHIP CONTEST

As reported in last month's Journal (President's Corner) by Bob Platt, Washington Apple Pi is gearing up for a membership drive. As part of that drive, we are holding a membership contest from December 1, 1988 to May 31, 1988.

The rules of the contest are simple - sponsor new or renewed memberships in Washington Apple Pi and receive points toward prizes. Here's the breakdown of rules:

1. Points are received for member sponsoring. Sponsoring a new or renewed membership is accomplished by merely recommending Washington Apple Pi to a prospective member. When the new member joins, he/she will be asked "How did you learn of Washington Apple Pi?". If the new member gives your name, you are recognized as the sponsor. Renewals are treated the same way (except that the question asked would be "Is this a sponsored renewal?". Both new members and renewals may sponsor themselves, if they wish.
2. Points are awarded on the following basis:
   - Sponsoring a new member=10
   - Sponsoring an organizational membership=20
   - Sponsoring a renewal=5
   - Assisting at membership booth=5
3. WAP officers and directors, those

on the membership committee, and employees of computer retailers are not eligible.

4. A monthly tally of points will be made, and interim prizes will be awarded to the member with the highest points accumulated during each month. Additionally, a grand prize will be awarded to the top point holder as of 31 May, 1989.
5. A list of prizes will be published in the December Journal.
6. Additional prizes may be added (if we have that many).

Infusion of new blood into the Pi is good for all of us. It keeps us in tune with the "outside world"; it increases our consumer clout as our numbers grow; and (hopefully) it produces new volunteers for WAP offices and activities to augment and eventually replace old, stodgy volunteers like Bob and myself. So by helping yourself to prize, you are also helping the Pi to grow and go!

Annapolis Slice

October Meeting

by Katherine Cave

P.O. Box 1332
Sverna Park, MD 21146

The October meeting was the Electronic Flea Market, chaired by Tracy Foust, final results show a good public response of more than 80 persons in attendance, but few sellers. Group purchases and the Apple II disketeria were quite successful in their sales, and some new members were added to our list. It is hoped this will be an annual event.

A slate of officers was formed at the Executive Board meeting on Oct. 14 which was presented at the November 12 meeting and other nominations were taken then. A new position of Tutorial/Training Coordinator was added to the roster of positions and will be filled by Bob Peterson. Other positions filled are: Hotline - Louise Tanney; Membership - Bill Derouin; Discoteria IIGS - Ray Settle; Mac - Steve Toth; WAP liaisson - Seth Mize.

Annapolis Apple Slice

The November meeting was held in the Lecture Hall of the Careers Building at Anne Arundel Community College, Arnold, Md. beginning at 9:30 a.m. and featured Charles Schindler on "Computers in the Home".

The MacSig was held on October 20 with Marty Milrod leading the Q&A session. The next MacSig will be on Nov. 17 at the West Street branch, Annapolis, of the Anne Arundel Co. library, from 7-9 p.m.

The Apple II Sig always meets after the regular meeting at the Anne Arundel Communty College and will now be coordinated by Craig Contardi. The new Laptop Sig is just now getting started and will be run by Seth Mize.

The December 10 meeting will be on "Computers in Business" given by Abel Merrill held in the same location.

The voting for the 1989 officers will take place in December with the new officers taking over in January.

The newsletter is a great success! Ray Settle is doing a fabulous job of running it off each month. Great work, Ray!

CRABBS (Chesapeake Region Apple Bulletin Board Service) phone (301) 974-0221, is busy as ever. If you are not able to get on the board now, contact AAS, at the above address for membership information.

That's all the news from the Annapolis Apple Slice.

COLUMBIA SLICE

October Meeting

by Tim Childers

The October 6 meeting of Columbia Apple Pi was moved from the County Library to the Board of Education Building on Route 108 because we were unable to get reservations for the library for the months of October, November, or December. Despite the change in meeting locations we still had three new members show up. Please call Tim Childers at 997-9317 in Columbia for future meeting locations.

We scored half a coup for the Apple II portion of the meeting in that we were able to borrow the newly announced Apple IIc+ from the folks at Clinton Computer in Rockville, but had no documentation for it and no one to demonstrate it. But, in the true tradition of user groups, everyone pitched in a little and it worked out fine. One of the group just happened to have the latest magazine article comparing the new Apple to the newer model of the Laser so he read the article to us. Another member just happened to have a pile of public domain Apple software in her car and lo and behold it actually ran on the new machine! The machine is a nice improvement on the older IIc in that it runs 4 times faster and comes with a 3.5 inch double-sided drive built in. The power supply is also built in now and there is a slot for a memory expansion board to be plugged into as soon as someone announces one. However, the newest model of the Laser has all this plus more at a lower price. The true winner of this competition is the user, because we now have more machines to choose from and lower prices due to competition between the Laser and Apple.

The first announcement of the general meeting was a call for nominations for officers for the election at November's meeting. Neil Gordon, who is a CPA, had already volunteered for Treasurer. As the author of these columns I, Tim Childers, had volunteered to run for Secretary. Tom Cowley and Tom Cook volunteered to run as Co-Chairmen for the Apple II programs. We still need nominees for the Macintosh program and for President. There were even a few nominations for people who weren't there so don't be surprised if your name shows up on the ballot!

There was a lot of discussion about what we as a club really want for the monthly programs. It was clear that there were a lot of people who wanted to learn more about how to get the most from their existing software and share tips and advice with each other. Also, everyone wanted more machines available for playing games

and for trying out each other's software. If you can possibly bring your computer to the meeting, please do.

There were also several announcements. The most exciting is that there will soon be a way for Columbians to reach the WAP Telecommunications System with a local phone call! Expect details to be announced at the November meeting which, just by coincidence, will start with a tutorial on telecommunications. The other announcement is that since we are out of the Library we will be able to sell WAP disks at the next meeting. We hope to have some on telecommunications as well as viruses. If you were excited by the HyperCard demo we will try to have a HyperCard disk too.

As part of the general discussion several people asked for an introduction to HyperCard before the planned demonstration of Focal Point. So we all gathered around the Mac and went through the Help stack that comes with HyperHard. There were several people there who were able to answer the many questions on HyperHard and I just happened to have a copy of Danny Goodman's book *The Complete HyperCard Handbook*, which I gave a capsule review of. Despite the fact that it is the size of a phone book I felt it was a very easy to understand book and did a good job of covering a very large program simply and thoroughly. I encourage everyone who wants to learn more about HyperCard to get a copy after they have gone through the Help stack. In my opinion the first and best step to learn HyperCard is to go through the Help stack and other stacks that come with it and just play with it. Books Like Danny's serve as reference works, as well as covering some of the principles of what to do with HyperCard's capabilities.

The program Focal Point is Danny Goodman's answer to the question, "What can you do with HyperCard". Thanks again to Ann Knust who gave the demonstration. This program is published by Activision but is really the ultimate organizer that Danny Goodman always wanted for himself but wasn't able to do before HyperCard. It is a series of stacks, all linked to each other, which do things like track appointments, telephone calls, expenses, etc., etc. It can do things that are impossible for you to do with those little organizer books you see so many people carrying.

Excel SIG

by Larry Feldman

The Excel SIG meets on the 3rd Wed. evening of every month at the Pi offices. Things start up at 7:30 and run to between 9:30 and 10:00.

Primarily what we do is try to answer each other's questions. Meetings begin with an open Q&A period giving anyone with a problem or question a chance to get some help.

Also the Pi's hardware makes it easier for everyone in the room to follow the discussion. There's this overhead projector hooked up to a Mac which throws whatever is on the computer's screen on to the wall.

The meetings have assumed a certain pattern. Things tend to get kicked off by one person posing a question or problem, often a complex one, which has arisen in an actual work context and another responding in an extended fashion. From there the discussion takes on a life of its own and moves at a very high energy level for two or more hours. With a small group we can still proceed pretty much free form allowing the discussion to go in whatever direction pleases the people present.

In October we spent most of the meeting analyzing the formulas in a set of templates that are designed to give anyone operating a small business an off the shelf financial system in Excel. The object of the exercise was to examine concrete cases of how worksheet functions can be used interactively to automate common financial management tasks.

Normally in this end portion of the SIG Report I give you an idea of whatever program or topic we have planned for the next meeting—in this case December. And, in this case, as of the moment there isn't anything planned. Exactly.

But there will be. Probably. Of late we have been tending to devote a lot of time to macro programing topics and tutorials. Its a fair bet that this will continue. Dick Bird is to do a session on error trapping at the November meeting and its possible this (or a lineal descendent) will continue into December. In any event, anyone who wants to know the planned focus of the December meeting can call me at 546-9556 starting around the middle of the month.

FedSIG NEWS

November 1988

by John Nelson

Upcoming Meetings:

Our next meeting is January 18th, 7:30 PM at Apple's Reston office, with a recap of Apple's 1988 products and demonstrations of their scanner and fax modem. In February we will have a representative of Informix to demonstrate WingZ, the next-generation spreadsheet. In March we will be back at Apple for a hot-off-the-line demonstration of some 1989 products.

Special Events:

On March 9th FedSig and WAP will host a three-hour session at the Federal Office Systems Expo, entitled "Macintosh and the Federal Workplace," a look at what the Macintosh contributes to the workplace and how it fits into an agency's information resource management architecture. This will include the role of Macintosh user groups. Please call me if you are interested in helping with this session.

Last Meeting:

Falcon Microsystems hosted our last meeting which included real-life success stories of how the Macintosh is integrated into offices on both the civilian and defense sides of the federal government. Representatives from Falcon also described some of the strides they have made to meet the growing demand for Macintosh's ordered from the GSA schedule. It quickly became apparent that Macs have been a big success when the powers-that-be in an agency let their workers bring them in. With input from end users, senior IRM officials, and representatives from Apple and Falcon, we had an excellent discussion. To sum it up: Apple and third party vendors have spent the last year ensuring that the Macintosh can connect with MS-DOS, IBM mainframes, and VAX minicomputers; and Apple has provided a framework for third parties to develop high levels of connectivity to virtually any type of computer system. Now that the technical problems are solved, Apple has to convince federal managers that its

WAP NEWS

worth the political risk to drop MS-DOS (or something else) as "the standard" in favor of a multi-vendor environment and improved productivity. Isn't that what competition in procurement is all about, getting the best value for our tax dollars?

New Ideas and Volunteers:

What if FedSIG were to have a library of floppy disks specific to the federal government; SF-171 formats, special HyperCard stacks ... I've had several people suggest this and I'm looking for a volunteer to coordinate it. We could do it in conjunction with the current WAP Disketeria to handle duplication and distribution, but we still need a coordinator. How about you?

Frederick Apple Core

...a Slice of Washington Apple Pi meets the second Saturday of each month at the C.Burr Artz Library, East Patrick Street, Downtown Frederick, Md.

This month's meeting began at 9:30 am on Saturday Oct. 8th with the issuance of complementary tickets to the Baltimore Office Products Show being held on October 11 and12 from 12 noon to 8:00 pm at the Baltimore Convention Center. The tickets were a $15 value issued to the club by Computer Digest. The products to be shown at the show covered any and all equipment that could be used for office automation.

Also distributed among the members was the result of a questionnaire I completed approximately two months ago on the behalf of the FAC. A new publication, "ACCESS! The 1988 Metropolitan Computer Resource Guide", is compiled and issued by Clark Publishing which also publishes the monthly Capital Computer Digest and Baltimore Computer Digest. ACCESS!, includes pertinent information including locations, meeting sites and dates, and officer names of area computer user groups, popular special interest groups and computer-related associations. The guide also provides information about area bulletin boards and lists of members of media who report about computers. For information concerning subscribing to ACCESS! write or call: Clark Publishing Company, 1001 N. Highland, Arlington, VA 22201. (703) 525-7900

Having obtained mixed emotions over the course of the year concerning the format of the club's meeting, I decided to bring the issue directly before the present membership in an attempt to create a structure which would benefit the majority, and I believe the members did not let me down. It was unanimously agreed upon that future meetings following the structure given below would best serve the attendees and possibly increase attendance as well.

IIGS SIG

October Meeting

by Paul Tarantino

A probable record number of participants (can't say for sure, since we don't keep records) of more than 45 members showed up for the October meeting in McLean, and were greeted by wall-to-wall CRT's (two televisions and two Apples) and an assortment of black, gray, and platinum boxes. The motivator for this high turnout was the expected appearance of a real live Claris representative bearing tidings (and a videotape) of Appleworks GS.

However... a phone call taken by Ted early in the proceedings wiped out our agenda. Bob Fidrych, our man from Claris, had hoped to fit us in between an airplane and a meeting with the movers and shakers at Clinton Computer, but the available time for a visit with us shrank to zero, leaving us with shattered hopes, unanswered questions, and an empty podium. So it goes. Mr. Fidrych assured Ted, however, that he or someone else from Claris would be at the November IIGS meeting, with even more "special things" to show us.

A lesser leader might have panicked, or resorted to showing us more slides of his last vacation, but Ted had a superb fallback plan in the person of Rick Folea. Rick is a Pi member and electronics whiz, who demo'ed his homebrewed video digitizer (cobbled together from leftover circuit boards and sewing machine parts) and the software he wrote which enables his magic box to capture monochrome video (from broadcast TV, videotape, or a camera) and create SHR-formatted images which can then be manipulated with your favorite IIGS graphic program. A few well prepared members did a brisk business in blank disks, and then Rick provided a portrait service for the group for the remainder of the evening.

Not content with this impressive hardware and software design achievement, Rick is currently engaged in developing the "Invisible Harp" display for the Capital Children's Museum, a setup which will allow museum-goers to generate music and other synthesized sounds by interrupting beams of light with their bodies. The device will be run by a IIGS donated by Apple. Needless to say, we would love a sneak preview!

We didn't get to ask the Claris guy all our penetrating questions about Appleworks GS, but we pooled the information we did have. Although this will be "old news" by the time you read it here, it bears repeating. Claris's advertised release date for Appleworks GS is (was?...press deadlines can scramble syntax) the first week in Claris's advertised release date for Appleworks GS is (was?...press deadlines can scramble syntax) the first week in November, with a list price of $249. Upgrade paths exist for owners of Appleworks 1.x, Appleworks 2.x, Multiscribe GS and Applewriter (!); upgrade info can be obtained by calling 800-544-8554.

Our meeting did have a guest star, in the person of Pi President Bob Platt, who put in a plug for the special events planned for December's gala celebration of the tenth anniversary of the Pi, and then stayed to share stage right with Ted in a GS/OS demo and Q&A session. (Stage left was still occupied by eager IIGSers waiting in line to get immortalized on disc by Rick Folea's magic scanner.)

Good things come to those who attend our meetings. The lucky people who filled out postcards last September have now received their free copies of AppleLink, which brings me to this month's *handy hint*: if you are a new AppleLink user, one of the first files you should download is the

AppleLink Conversion Utility, without which you won't be able to unsqueeze (de-compact?) most of the downloads available on the system. Which brings me to *another* AppleLink-related handy hint, one that was *not* discussed at the meeting, but rather discovered by (ahem) me while writing this article. The AppleLink Connect Guide for IIGS users requires that you make several changes to printer port settings in the control panel before booting AppleLink. *don't* forget to restore these settings to their previous values before running other software (like Appleworks), or Strange Things may happen. At least they did to me, and I spent quite a while troubleshooting my system and Appleworks disks before being struck with this insight. Bad planning on Apple's part forced me to go through resetting my control panel every time I want to use AppleLink; does anyone out there have a "no-brainer" solution?

Ted announced at the meeting that, despite his whelming mandate to continue as IIGS SIG president, he would like to devote more time to programming activities in PISIG, and will therefore yield his throne and scepter to any highly motivated volunteer who would like to take on the job. The salary is terrible, but the perks include lots of opportunities to mingle with the great and near-great, as well as first crack at lots of nifty review software, and other benefits too intangible to describe here.

Needless to say, we are planning a second attempt at an Appleworks GS introduction at our November meeting on Monday evening, 28 November, at Thomas Pyle Intermediate School in Bethesda. (Off the Beltway via River Road (Route 190) east for a mile, left on Wilson Lane (Route 188), then half a mile ahead on the left. Park in back and look for us in the cafeteria.)

Our December meeting will be on the 19th, back at the Dolley Madison library in McLean. (From the Beltway, take Dolley Madison Boulevard (123) east, go past the light at Old Dominion Road, and take the next left onto Ingleside Road. We'll be in the downstairs meeting room.) Candidate topics for discussion include hard disks for the IIGS, maintenance and repair services, and desktop publishing.

Join us!

HyperCard SIG News

October Meeting

by Robert C. Platt

Richard Kozloski demonstrated "time line assistant" and "launch assistant," two HyperCard stacks used in space shuttle launch simulations.

Stack collection. Our Stackware librarians, lead by Dave Condit, continue to produce many impressive new disks of stacks, XCMD's and XFCN's. You can purchase them at our monthly meetings, at the WAP Office, or by mailorder using the form in the back of the WAP Journal. We now have 16 Stack disks (their numbers begin with 19), and 4 XCMD disks (with numbers starting with 21). Dave still has about 50 megabytes of stacks to sort and document for our library. If you can review a few disks worth, please call him at 703-349-8752.

HyperTalk SubSig. The HyperTalk SubSig continues to be a great place to share your experiences and questions about customizing your stacks with scripts and to meet fellow HyperTalkers. It meets on the third Wednesday of each month (including December 21) at the Fairlington Community Center, 3300 S. Stafford St., Arlington, VA at 7:30 p.m. To reach the center, take I-395 to the Shirlington/Quaker Lane exit. Go south on Quaker Lane, through the first traffic light. Turn right one block after the traffic light. The center is one block in from Quaker Lane, with ample parking available.

HyperDA Version 1.1. My upgrade to HyperDA arrived. HyperDA is a desk accessory which allows the user to access hypercard stacks (even with 512K Macs.) I reviewed it in the May 1988 WAP Journal p. 70.

The upgraded HyperDA has the following new features:

- a more complete set of background operators. For example, HyperDA can now go to a specific card in a background.
- HyperDA now understands all of the new object abbreviations introduced in HyperCard 1.2.
- Fonts and icons resident in a stack now show up when the stack is opened by HyperDA.
- The dial command is now supported to permit dailing phone numbers using the Mac speaker or a Hayes-compatible modem.

For those of us who need to transfer data out of stacks into word processors, but lack the RAM necessary to run Multifinder, HyperDA is a godsend.

HyperTutor. HyperTutor by teligraphics offers an innovative interactive introduction to HyperTalk programming. Each command is presented in a series of frames. The student then can see sample scripts which use the commands. HyperTutor allows the student to invoke the sample scripts by clicking on the image of a Macintosh. Any screen output is then displayed on the screen portion of the Mac. It is a cute metaphore.

On the one hand, the level of explanation is suitable for a user who is completely new to HyperTalk. On the other hand, the treatment of certain key concepts, such as the control structures *repeat* and *if* are not covered in sufficient depth to benefit someone who does not have previous programming experience.

The version which I reviewed did not cover the changes introduced in version 1.2 of HyperCard.

Volunteers. We have started a stack to teach novice users about WAP's Telecommunication System. WAP also needs a stack for questions frequently asked from our Office staff and the correct answers. Please contact me if you are interested in working on either project.

GameSIG News

By Steven Payne

By now you've heard that GameSIG (like *The Washington Post*) decided against endorsing a presidential candidate this year. As we saw it, Bush served in an administration under which the price of memory chips skyrocketed, while Dukakis seemed likely to let computer pirates out on weekend furloughs, and neither one had pledged enough support for improved computer games during the campaign. Political pundits will no doubt argue for years over effects of our non-endorsement on Election '88.

➥ 53

WAP NEWS

Uploading Journal Submissions

By: Leon H. Raesly, LCSW

Yes, the ability to upload Journal Submissions has finally come to The Washington Apple Pi. We have entered the 20th Century!

However, we need your help. To make this work, several things need to be followed. First, even though you have uploaded the article, we need a paper and disk copy. Many things can occur with the upload, not just poor transmission. Do we have the latest version? Is it complete? Have we captured it correctly? Was the transmission successful? Is the file complete and uncorrupted? Did your modem program keep the file type intact, or did it (or the TCS) change it? Did you send the file you thought you did? (This may seem silly, but it can easily happen - the mouse pointer slipped at the last instant, thus sending a BASIC file instead of the text file you intended.) So please ALSO send a disk and paper copy to the Pi Office.

But if you are going to send a disk and paper copy anyway, what is the advantage of uploading the Journal submissions? Several.

First, it is a much faster way of delivery. The Editor and Editorial Committee can start working on the article within the scheme of the entire issue. In the future there will be special issues devoted to one concept, such as Telecommunications or Facsimile. Thus, the timeliness will be important.

Second, it allows for the future development of techniques and procedures which may make the need of disk and paper copies unnecessary. While at present they are needed, with experience we can develop procedures that may make them obsolescent; but we need the experience, first.

Third, it allows for the three-member Journal Committee to download them for their technical editing without having to drive to the Pi office. That will be a great savings in time and money for these volunteers.

Fourth, it is neat and FUN! Yes, let us not forget one of the prime reasons we do all this, that it is fun! You have just submitted your article in the latest technical manner. Wasn't that NEAT!

Well, on to the mechanics of it.

First, you must get prepared to send it. Aha, another step! Yep, sorry, a little more to learn. If you are on a Mac, and you decide to compress (pack) it, use Stuffit. Do not use Packit. You can get this from the Mac Utilities area on the TCS. Name your file with the SUFFIX

.SIT This will let the recipients know it was Stuffed. Thus, MYFILE would become MYFILE.SIT

If on an Apple II, and you decide to compress it, use BLU Version 228. Be sure to compress it, not just bunny it. Get this file from the Apple II Utilities area on the TCS. Name your file with the suffix .BNY. This will let the recipients know it was compressed and bunnied. Thus, MYFILE would become MYFILE.BNY

Incidentally, if you have written this article at work on an IBM or Clone, sending it is most helpful. We will not have to convert the Disk Operating System. BUT DO NOT COMPRESS (or ARC) it. That would leave us in a real bind.

Still part of getting ready to send it is the question of what format is it? Not disk format, since the telecommunications will take care of that. In what word processor file format is it stored on your disk? This can make things either very difficult or very easy for the Editors. Let's look at some of the possibilities.

For the Apple II, it needs to be in either AppleWorks or an ASCII file. This will allow us to convert it. If you use MultiScribe, APPLEWORKS GS, Word Perfect, etc., you will need to print it to disk as an ASCII file. Check your manual for how to do this. Almost all word processors provide for this.

If you are wordsmithing with a Mac, you will want to have it in a MacWrite file (easy to handle), a Mac Words file, or an ASCII text file. If you are using any other word processor, print it to disk as an ASCII text file.

Now it is possible in some programs to print a formatted ASCII text file. That is, it will actually space into the file the margins you have chosen with spacebars. This is not desirable since they all have to be stripped out for the DPub program to work. An ASCII text file simply prints the characters with carriage returns at the end of each line and a second one between paragraphs. These are relatively easy to strip out so that the material can be properly justified.

Second, of course, you must call the TCS SYSTEM. Use your password to logon and then enter an F for F)ile Transfer. Choose area 24 "Journal Submissions" and then tell the SYSTEM you wish to download file number 1, "Instructions". This will give you some practice in downloading.

Here you enter a D for D)ownload and then choose the appropriate protocol (method) for your computer. Currently, it is "Checksum" for the Mac and Ascii Express (either DOS 3.3 or ProDOS) for the Apple II.

Third, whether you are Apple II or Mac, you must instruct your software to "Receive". Please refer to your software's manual for that.

Then just sit back and wait.

O.K. Now on to uploading. ALWAYS use PROTOCOL upload. NEVER use Text. Text can get too garbled without the error-checking of a protocol. How to do this? Just enter a U for U)ploading, then choose P for P)rotocol. All of the above refers to the TCS. Now you must instruct your software to upload by Protocol. Again, check your manual for this or call one of the many volunteers on the Pi Hotline for help if you get stuck. Now sit back and watch your computer do its work. Neat, huh?!

O.K., now comes the last part. After the TCS is completed receiving the file, it will send you:

Download Completed and then ask you for a short description. Enter 39 characters or less. Then it will ask you for a long description. This can be up to 6 lines.

Then the final question. "Make available for downloading now?" BE SURE TO ANSWER THIS YES; otherwise, we will not learn that it is there waiting to be used for the next issue of the Pi Journal.

Now, to further let us know you sent it, please go to the Journal Board on Conference 1 and leave a message to the Editor and Editorial Committee that you have placed it there and any other info about it. This would be very helpful.

Well, that's it. Not so bad, huh? Well, have fun Telecommunicating! Take Care, Now! Lee...

ask about our super discount program for MacSource Members

MacSource leads the way in new products and top value for the dollar !!

• WORM Drives

The Pioneer optical disk drive system employes 2nd generation technology permitting up to 654MB of data to be stored on each disk. You run the WORM just like a hard drive, but unlike any other format, you can never lose your data. Fastest access time of any optical drive system on the market. Most cost effective means of saving data.

• Inkjet by GCC

The new *WriteMove* high quality portable inkjet printer from General Computer (the makers of the *PLP* laser printer) is here ! It is light (3 lbs) and fully compatible with your Mac Plus, SE or II. Battery or AC power and at 192 dpi (puts a dot matrix to shame).

• OmniPage OCR is here!

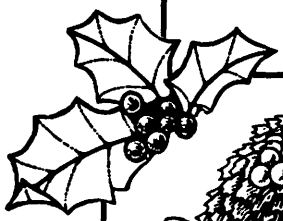
The best in Optical Character Recognition software is now available. Works with any Mac scanner..reads from 8 pt. to 72 pt. size. Reads typeset, proportionately spaced and kerned characters. Automatically differentiates columns as well as graphics. Scanning speeds up to 115cps.

... and remember, MacSource has Mac Workstations for your use:
Rent Time on our Mac SEs or Mac II with color
Rent Time on our scanner for graphics or OCR
Rent Time on our QMS 810 PostScript laser printer
Rent Time on our DaynaFile to translate MS/DOS files
Rent Time to use the best in software programs

MacSource
a mostly Mac store...

2121 Crystal Drive
Arlington, Virginia 22202
Two Crystal Park
(703) 521-9292

Located in Crystal City...across the river...two blocks from Metro
521-9292



'T*was a few days before Christmas*
And all through the office
A commotion was stirring
—Here come the bosses!
The extension has been cancelled,
the deadline is Now!
There's so much to be done
But, my oh my, how?
We've got to have help,
But not the ordinary sort
Someone who knows
Pagemaker, MS Word and Quark"
We looked all around,
Despair in our eyes
For we knew that
There was not much time
Just then, someone piped up
"I've got it —a gift from heaven!
Just dial 948-9857"
MacTemps, of course!
The answer is clear
Thank you, MacTemps
For our Holiday Cheer!

Season's Greetings from MacTemps

Temporaries • Training • Solutions • Support • Workstation Rentals •

948-9857

Computer Programs and Cognitive Learning Styles: Part 2

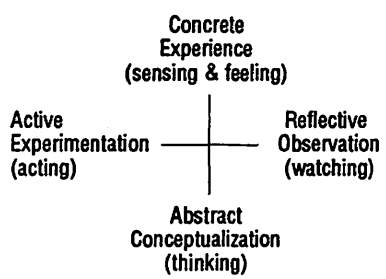
by Linda Van Zee

Last month in part 1 of this 2-part series on relating educational and training software to cognitive learning styles, the concept of learning style and its application to computer programs were introduced. Cognitive learning style was defined as "non-academic learner differences in perception and information processing". We will be relating cognitive learning styles to instructional computer programs, where the cognitive learning styles are reflected within the program itself, rather than by how the program is used (as in application programs).

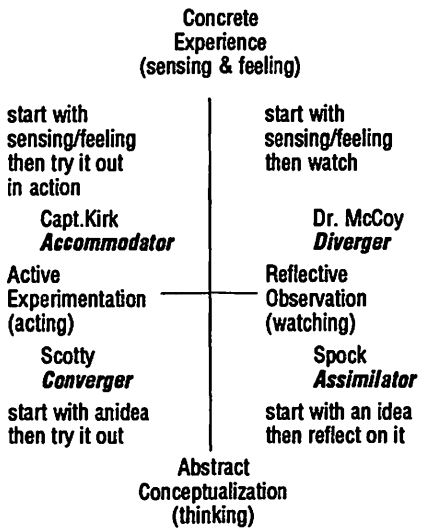
This article will discuss the cognitive learning styles derived from a model called "experiential learning" and demonstrate how computer programs can be viewed in terms of perception (concrete/abstract) and process (active/reflective).

Experiential Learning Styles

Although the experiential learning model developed by Kolb uses the term "learning styles," according to our discussion in Part 1, it would fall into the category of "cognitive" style. At the core of this model are two bi-polar factors: one is how individuals perceive information (concrete or abstract); the other is how individuals process information (active or reflective). These bi-polar factors can be represented on a grid.



Although it is most effective to use all four learning modes, most people develop learning styles that emphasize some learning modes over others. In order to exemplify these modes in more familiar terms, the crew of the Starship Enterprise from Startrek will be used to characterize the four prevalent types of cognitive learning styles.



Accommodator (Capt. Kirk): The Accommodator's best learning modes are Concrete Experience (sensing, feeling), and Active Experimentation (acting). He has an ability to carry out plans and experiments, and adapt himself to specific immediate circumstances. He is more of a risk-taker and solves problems in an intuitive trial-and-error manner.

Diverger (Dr. McCoy): The Diverger's best learning modes are Concrete Experience (sensing, feeling) and Reflective Observation (watching). He performs well in situations that call for generation of ideas (such as "brainstorming"). He has a strong imaginative ability, can view concrete situations from many perspectives, and organizes many relationships into a meaningful "gestalt."

Assimilator (Spock): The Assimilator's best learning modes are Abstract Conceptualization (thinking), and Reflective Observation (watching). He is less interested in people and more concerned with abstract concepts. He has a strong ability to create theoretical models, and assimilate desperate observations into an integrated explanation.

Converger (Scotty): The Converger's best learning modes are Abstract Conceptualization (thinking) and Active Experimentation (acting). A person with this style does well in situations where there is a single correct answer or solution (such as conventional intelligence tests). He is adept at the practical application of ideas and focusing in on specific problems. He would rather deal with things than people.

In any population, there will be individuals with each of these four cognitive learning styles. There will be certain groups that contain more of one style than another. For example, computer programmers have a high abstract conceptualization orientation; business managers tend to be more concrete. Engineers have an active orientation while psychologists have a reflective observation orientation. Also, the level of abstraction tends to increase with age and education.

For the more general population that most computer programs are intended for, it would be most effective for the program to accommodate all four modes of learning in order to give a more equal opportunity for learning by all students.

In order to apply these cognitive learning styles to computer programs, we will look at the two bi-polar factors of perception and process separately.

Perception

(concrete experience/abstract conceptualization)

A person who perceives concretely prefers to have concepts connected with real-life experiences to which they can relate. A person who perceives abstractly doesn't mind if the concepts have no relationship to real-life experiences. A good balance in a computer program is to use experiences or examples to reinforce abstract concepts.

A concrete person needs to have a reason as to why the material is valuable to learn, which is more important to them than the goal (such as a certain score). An abstract person wants to know what the immediate goal is, and is less concerned about the value of the material. Interestingly, many programs give reasons for why the material is valuable to learn in the manual but not on the computer screen.

Students generally don't read the manuals. Have the designers of these programs made the assumption that the teacher needs to know the value of the program, but that none of the students care? Both a statement of value and goals for the students are needed for a balance in perception.

The abstract person likes to analyze situations or events, or think about his response to a question or problem. The concrete person would rather remember the required information with no analysis or guess at the answer without a great deal of thought. Both can be accommodated in a program. The imbalance comes from either always having to analyze, or never having to analyze.

Cognitive learning style models often contain similar elements. There is some overlap in the description of right-brain/left-brain modes covered in Part 1 and descriptions of experiential learning dimensions. The differentiation between holistic and logical described for right-brain/left-brain modes also applies to concrete/abstract. Information is grasped holistically by a concrete person and more sequentially by an abstract person.

Process

(active experimentation / reflective observation)

A person preferring active experimentation likes to have a great deal of control of objects, situations, and circumstances on the screen, via a mouse, joystick, the keyboard or any other input device. A person preferring reflective observation does not necessarily want to manipulate things on the screen.

An active person prefers that the information further a *practical application*, while the reflective person prefers to understand the *meaning of ideas*.

An active person prefers to learn how something works or how to use a process. The reflective person prefers to learn the facts.

As in the description of perception above, there is an element of right-brain/left-brain that overlaps with active/reflective. The active experimenter prefers *discovery learning*, where the student tries out different ways to solve a problem and discovers the rules and principles involved. The reflective observer prefers *expository learning* where they are given the rules and principles and guided in their application.

The factors in perception and processing information and their application to computer programs can be summarized as follows:

The recognition of software characteristics that present a balanced approach to cognitive learning styles would be of interest to software designers and evaluators, as well as educators.

For educators, though, it is not always necessary to have a balanced computer program if they are aware of their own teaching style and the learning styles of their students. Carefully chosen software can complement the cognitive learning style orientation of the classroom format and other materials. A cognitive style orientation can either be similar to the students', which will facilitate the learning of the material; or complementary, which can help the student learn to use the opposite of his own preferred cognitive style. However, I would like to reiterate that if a group of students are exposed only to a format that addresses only one cognitive style dimension, there will be some learners who have a constant disadvantage in the learning situation. The use of right-brain dominant and active software can complement other methods of presenting the same material that may

Service Bureau & Learning Center
PC RESOURCES LTD

Providing cutting edge Macintosh DeskTop Publishing services for you 8:30 am - 5:30 pm daily
evenings/weekends by appointment
Appointments Recommended

1850 Centennial Park Drive • Suite 300
Dulles Access Rd. at Wiehle Ave. Exit
Reston, VA 22091 • (703) 860-1100

FEDERAL JOBLINK
The Complete Federal Job Package
At last ... SF 171
(OPM 1170/17, SF 15, SF 171, SF 171-A, SF 172, SSW 32, SSW 555, SSW 585, SSW800)
The best Macintosh package of Federal employment for any price!
27 pages of forms in MacDraw® format; Not copy-protected.
20 page reference manual describes what to do and how to do it better.
No fancy gimmicks, it's all here in one neat package.
MULTISOFT RESOURCES
P.O. Box 235
Washington Grove, MD 20880
(301)-977-6972
Send check or money order for $49.95 + $3.00 s/h (MD residents add 5% sales tax).
Requires Macintosh computer and MacDraw.

DiscoTech
759-0008
The Hard Drive Discounters
We now have fast, affordable **Mac Crate** and Inner Crate (formerly Apple Crate) hard disk drives for your Mac Plus, SE or II.
Mac Crate drives are external drives for the Mac Plus and SE, Inner Crates are for the Mac SE and II. For a review of the Mac Crate 60 see the November '88 issue of Mac User.
10 MB of Shareware
2 YEAR WARRANTY
All Cabling and Formatting Software incl

Mac Crate 20	$515
Mac Crate 40	$631
Mac Crate 60	$675
Mac Crate 80	$775
Inner Crate 30 (Mac SE)	$469
Inner Crate 40 (Mac II)	$511
Inner Crate 50 (Mac SE)	$586
Inner Crate 60 (Mac II)	$535
Inner Crate 80 (Mac II)	$655

Perception		
concrete	balance	abstract
1. concepts connected with real-life experiences to which the learner can relate (concrete examples)	experiences or examples used to reinforce abstract concepts concepts)	concepts have no relation to real-life experiences (abstract
2. reasons given for why the material is valuable to learn	both value of material & statement of goals given	statement of goals
3. no analytical requirement - student responses require guessing or remembering information with no analysis	sometimes guessing or remembering information, sometimes analysis	great analytical requirement - student responses require an analysis of situations or events or involve a great deal of thought
4. holistic presentation of material or random configurational (as a whole with subsequent extraction of features)	holistic and logical contains both configurational and sequential presentation of material	logical sequential presentation of material (step-by-step step only)

Process		
active	balance	reflective
1. student has a great deal of control of objects, situations circumstances and via mouse, joystick, or other input devices	student has some control of some objects &/or circumstances on screen	student has no control of anything on screen
2. information furthers practical application of concepts	integration of practical application and meaning of ideas	information furthers understanding of the meaning of ideas or situations
3. material teaches either how to use a process or how something works	integration of teaching facts & how something is done or works	material teaches facts only
4. discovery learning principles & rules discovered or inferred by student trying out different ways to solve problems or situations	integration of discovery and expository learning	expository learning principles & rules given to student on how to solve problems and guided in their application

be more left-brain and reflective. For example, *Robot Odyssey*, a popular instructional game by The Learning Company that teaches problem-solving (logic), is very right-brain dominant, and active. Although in itself not a very balanced program in terms of cognitive learning styles, the program could be used to complement other methods of presenting problem-solving. One effective use I see for computers in education is to facilitate learning for those children whose cognitive style may not be supported by the traditional classroom format.

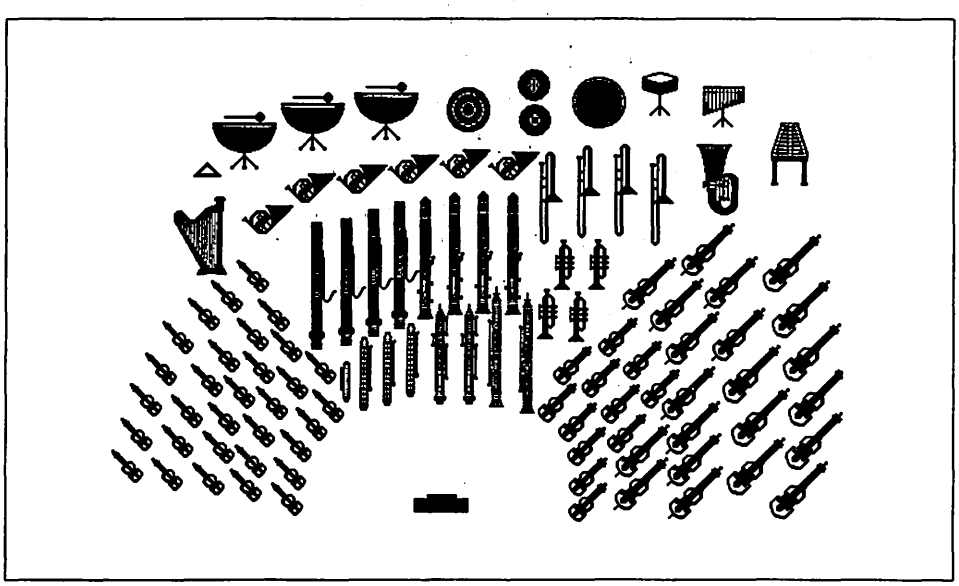
The intent of these articles has been to introduce you to a method of evaluating the effectiveness of educational and training software according to cognitive learning styles. The underlying point has been that in order to give an equal opportunity for all students to learn, differences in cognitive learning styles must be taken into consideration.

I have also done research on evaluating software according to the cognitive learning styles of field-dependence/field-independence. You can write to me at 7002 Spur Rd. Springfield, VA 22153.

The Musical Apple

Symphony Orchestra in a Box

by Raymond Hobbs



In order to create an orchestra, not only many voices, but many timbres are necessary. Even when the requisite synthesizer power is available, distributing that power among sixteen channels can be severely limiting - after all, an orchestra has a good many different timbres. Not only are there over twenty different instruments in a typical orchestra, but there are distinct timbres among similar instruments.

I tackled the job of synthesizing an orchestra on a bet (but also in order to have a usable MIDI orchestra), and assumed roughly the instrumentation shown above.

Additionally, I allowed for one extra solo instrument, such as a piano or a violin. Given this, plus the fact that normally only three percussionists are used to play the ten percussion instruments shown, the orchestra would

Synthesizer	Channels Max	Channels Min	Patches Max	Patches Min	Change Patches?	Voices	Notes
Mirage Keyboard	1	1	8	1	N	8	Samples
Mirage Rack Unit	1	1	8	1	N	8	Samples
Casio CZ-1	8	1	8	1	Y	8	Patches
Yamaha TX81Z	8	1	8	1	Y	8	Presets
Kurzweil K1000	16	1	16	1	Y	24	Samples
EMU SP-12	1	1	32	1	N	32	Sampled Perc.

consist of about 85 members.

Keeping in mind the strengths and weaknesses of the equipment at his or her disposal is a primary responsibility of the MIDI musician. In my case, I have six synthesizers to use among the sixteen available MIDI channels. Three of the six synthesizers are samplers, incapable of rapid patch (timbre) changes, and requiring only one channel each for output. One of the others uses up to eight channels to play preset patches only. The remaining two can change patches quickly, and use from one to eight and one to sixteen channels respectively. This data is summarized in the chartabababove.

From the above data, it was obvious that those synthesizers that could not change patches should be used for instruments that are employed most of the time. Of course, the EMU SP-12 would be used exclusively for percussion. On the other hand, those synthesizers that could rapidly change patches could be used for the instruments that play only from time to time and individually (as opposed to sectionally). Therefore I relegated the woodwinds and the brass to the Casio and the Kurzweil. The strings could be played as a section by the samplers (the two Mirages), and the Yamaha could play the harp plus some percussion that required pitch changes, such as bells and chimes. The resulting orchestration is shown below.

Synthesizer	Patch	Channels	Voices
Mirage Keyboard	Strings	1	8
Mirage Rack Unit	Strings	2	8
Casio CZ-1	Flute	3	2
	Clarinet	4	2
	Oboe	5	2
	Cor Anglais	6	2
	Baritone Horn	7	1
Yamaha TX81Z	Harp	8	4
	Chimes	9	2
	Bells	10	2
Kurzweil K1000	Bassoon	11	2
	Trumpet	12	2
	French Horn	13	3
	Trombone	14	2
	Solo	15	8
EMU SP-12	Percussion	16	6

This arrangement proved unsatisfactory for several reasons. First, the Yamaha has poor chimes and bells patches. Second, the harp patch, when played, needs more than four voices (more like eight). Third, the Mirage strings are good, but the attack is so slow that rapid string passages cannot be played properly. Finally, the timbre of instruments within similar groups differ sufficiently that "depth" of sound is created. By having all of my clarinets or trumpets on one patch, I lost this depth. So I went back to the drawing board.

My final design relied on another MIDI feature which is present on the Kurzweil and the Yamaha—aftertouch. In a nutshell, aftertouch refers to key pressure following the attack of a note, but the control I am referring to would simply be sent from computer to synthesizer as part of a MIDI file. By setting aftertouch to control the oscillator mix, I could alter the timbre of a given patch. Since the Kurzweil can accept this type of control without giving up vibrato control (the Kurzweil is somewhat unique in this ability), I decided to use the Kurzweil for all of my "standout" patches, including the solo patch. Then I replaced the bells, chimes and harp patches on the Yamaha with flute and brass (excellent patches on the Yamaha), moving the harp to the rack Mirage and the bells and chimes to the Casio. That left a hole in the strings, which I filled by using the Kurzweil "fast strings" patch, which I could exchange for slow strings by sending a MIDI patch change request from the computer. The woodwinds were then loaded onto the Casio, using separate clarinet patches and double reed patches to allow two different timbres for clarinets, oboes and bassoons. Finally, I switched the full-keyboard string sample on the Mirage keyboard for half-keyboard string and trumpet samples. The final arrangement is shownin the following figure.

Keep in mind that the sampled string patches used on the Mirage

Synthesizer	Patch	Channels	Voices
Mirage Keyboard	Stacked Strings/ Trumpet	1	8
Mirage Rack Unit	Harp	2	8
Casio CZ-1	Clarinet 1	3	2
	Clarinet 2	4	2
	Double Reeds 1	5	2
	Double Reeds 2	6	2
	Bells/Chimes/ Gong	7	1
Yamaha TX81Z	Flute	8	4
	Trumpet / Trombone/Tuba	9	2
	French Horn	10	2
Kurzweil K1000	Strings / Hall Strings	11	6
	Clarinet	12	2
	Trumpet	13	2
	Baritone Horn	14	2
	Solo Piano	15	10
EMU SP-12	Percussion	16	6

keyboard and the Kurzweil are samples of an entire string section. The Mirage "stacked strings" patch gives a string "punch" of several layers of the strings, and "hall strings" produce a single tone of about 20 strings playing simultaneously, with echo. Solo violin must come from switching patches in and out of the "solo" channel. And, yes, the EMU SP-12 percussion includes three tympanis and orchestral cymbals! The final orchestration includes 15 violins, 15 violas, 15 cellos, 15 basses, 1 harp, 2 flutes, 2 oboes, 1 cor anglais, 4 clarinets, 2 bassoons, 3 trumpets, 4 french horns, 2 trombones, 1 baritone horn, 1 tuba, 3 tympanis, snare drum, bass drum, cymbals, bells, chimes, gong and solo. A total of 87 instruments!

Actually, I should mention that with the Jambox/4+ MIDI interface and MIDIPaint (from Southworth Music Systems) currently on my system, I can stretch the orchestra configuration to a whopping 64 channels, which makes the exercise trivial. The challenge was to get it done in just the normal sixteen. And by the way, Richard, you owe me $10.

WAP 10

Celebration

Larry Tessler
V.P. Advanced Technology
Apple Computer

Saturday
December 17, 1988
USUHS

LINOTRONIC L300/RIP 2 LASER IMAGING

For Macintosh Users

As Low As

$5.60

Per Page*

with 24-hour Turnaround

*8.5" x 11" page at 1270 dpi with Linotronic Printing Contract

- Free Pickup & Delivery for Orders over $100.00
- Up to 2540 dpi Resolution
- RC Paper, Film or Plates
- Typesetting & Illustration

(703) 354-1600

AWARD PUBLICATIONS

5301 Shawnee Rd. Suite 400

Alexandria, VA 22312

FAX (703) 354-1027 • BBS (703) 354-0966

Technical Illustrators!
Job Opportunities Available

THE PRICE IS RIGHT ON.....

Apple™ Software		Macintosh™ Software	
Accounting			
DAC-Easy Acct.	$70	Insight One-Write	$210
On Balance	43	Rags to Riches Sys	350
Communications			
ASCII Mousetalk 1.5	76	Intalk 2.11	122
Point to Point	80	Mail 1-4 users	215
Database			
DBase II 2.43	340	Omnis 3 +/Express	345
pfs:Workmates(f,r,p,w)	128	Reflex Plus	200
Education			
Computer SAT (HBJ)	30	Mathtalk	37
Stickybear Series	ea. 26	Speller Bee	37
Graphics			
Publish It!	70	Canvas 2.	175
Springboard Publisher	92	Calendar Maker	34
Leisure			
Mean 18,Ultimate Golf-gs	29	Beyond Dark Castle	35
Pirates	29	Chessmaster 2000	33
Programming			
Super Macroworks	32	Lightspeed C 3.0	119
Timeout Ultramacros	39	Lightspeed Pascal1.1	86
Spreadsheet			
Visualizer IIe	57	MacCalc 1.2	97
Word Processing			
Deluxe Write/GS	58	Mindwrite 2.0	128
Word Perfect/GS2.0	107	MS Word 4.0	280

. . .New, recently published software. . .

APPLE		MACINTOSH	
816/Paint	48	Cricket Presents	330
CAD Apple	295	Draw It AgainSam	94
California Games	29	Fastback	62
GEOS	92	Fox+	235
Music Studio 2.0-gs	70	Quicken	36
Orbitor-gs	33	ReadySetGo 4.0	330
Scrabble	30	Powerstation 2.5	38
Smoothtalker-gs	37	Symantec's SUM	69
Timeout Filemaster	32	WINGZ	380
Wordbench	104	Wordperfect	225

Ask for a copy of our Apple or Macintosh catalog containing hundreds of other programs. Also, ask about our volume discount prices for 10 or more of any one item.

$3 shipping and handling per order (UPS-$4).
MD residents, add 5% sales tax. No charges or COD's. Prices subject to change. Call for items not listed.

COMPUTER WARE UNLIMITED
P.O. BOX 1247 COLUMBIA, MD 21044
301/854-2346

II Review

Applied Engineering's PC Transporter

MS-DOS on your II

by Stephen E. Bach

Before I purchased my Applied Engineering PC Transporter, I was hoping to find some article in WAP Journal telling me all the ins and outs about it so that I could make as informed a decision as possible about. But no. So here I am writing something like that article myself. But first the disclaimer, which is mainly that I make no promises of being an expert or of covering all aspects of the PC Transporter system; this is not a review. This is a report on some of my experiences and problems with the PC Transporter.

Since becoming an Apple II user nine years ago, I have been able to follow the technical developments of the hardware and the system software as they have taken place, but with the PC Transporter I did not want to do this. All I wanted to do was to be able to run dBASE III Plus. I wanted to plug the PC Transporter card into my IIgs, boot up installation software, and go.

The appeal of the PC Transporter was that in my 7' X 10' office I wouldn't have to add another computer to my desk. I could use all my existing hardware: keyboard, printers, etc. I was looking forward to having a text display using my monochrome monitor which would be of the quality of my Apple III+. Since there are not a lot of Apple III+ computers around, let me explain that the characters on the display from an Apple III+ do not appear as if they are made up of dots - as the characters from an Apple II do. They appear to be solidly painted characters, and they are much easier to read and look at over an extended period at the computer. (To my mind Apple really missed a call by not building into the IIgs a video capability which would give such a high quality text display. It has been for this reason that I have several times contemplated swapping my IIgs for a IIe with accelerator card and Videx Ultraterm card, which also would give me that same quality of display.)

I must admit that I did not do as much homework before making this purchase as I should have. Since I have an Apple //gs, I ordered the //gs Installation Kit when I ordered the PC Transporter from my dealer. Although the PC Transporter does have an NTSC composite output signal, I didn't receive a cable from AE to go to my monochrome monitor because they don't normally supply such a cable in the //gs Installation Kit. I did not have a color monitor, and I had no intention of getting one. So what was I to do?

AE says nothing in their ads about this little detail. "99% of //gs owners have color monitors," the tech at AE told me on the phone. What about the rest of us? They would send me a cable for $12.00. I protested this because I thought AE should say in their ads that the expectation is that purchasers of the //gs Installation Kit already possess color monitors. I would have purchased the less expensive //e kit and been $16.00 ahead. (They agreed to send me the cable for $6.00, and the kit prices differ by $10.)

Little did I know at the time that I would be getting a color monitor after all. Why? Well, PC-Write, the word processor I chose to try first on the PC Transporter, displays instructions at the top of the screen which smeared across the screen. The Norton Advanced Utilities did things similar.

I realized that to software, the PC Transporter appears as a PC-compatible with a CGA (Color Graphics Adapter). As far as I know, you can't change this. I had so been looking forward to that quality of display which my III+ has and which a PC-compatible with a Monochrome Adapter provides.

From what I have been able to tell, you have to have a color monitor to use with the PC Transporter system. No way out. Even if you tell software that you want a monochrome display it still doesn't work right with a monochrome composite monitor.

So I bought an AppleColor RGB Monitor. I needed to get going with my system. But it was an unexpected and unwelcome expense. The color monitor now gives me useable displays using the PC Transporter, but the sharpness of the display when I use the IIgs as IIgs is not as good as it was with my old PSI amber monitor. It is this same quality when I am operating under the PC Transporter: a step back under Apple, and a disappointment under PC Transporter.

One of the built-in disadvantages of the PC Transporter system is that it is not memory expandable. What I had assumed was that I would be able to use the RAM disk in the IIgs, provided by the memory on an Applied Engineering GS-RAM card, as RAM disk via a ProDOS volume under the PC Transporter.

Well I *could* do it, but I would then have to sacrifice using the non-volatile storage of my hard disk because the PC Transporter supports only one ProDOS-file-based storage device. If AE is planning to upgrade their software a very desirable feature would be to allow at least two ProDOS-file-based storage devices.

The keyboard. I think AE has done a decent job of mapping the IBM keyboard to the IIgs keyboard. But early on in using the system I decided that I wanted an IBM-type keyboard so that when I have to work on other people's systems, which I do in my work, I will be at home with such keyboards.

I purchased the Northgate Omnikey/102 after reading rave reviews of it in a couple of places. It is indeed a superb keyboard, and I think I even prefer it to that of my Apple III+, which for years has been my all time favorite, and which I thought could never be surpassed.

Unfortuately there has been and there remains a glitch: the keyboard is designed for use with PC-compatible systems which have an "enhanced ROM BIOS," according to the people at Northgate. What happens is that every time I press one of the dedicated cursor keys, or the dedicated Home, Insert, PageUp, PageDown, End, or Delete keys, the IIgs issues with a long beep before the action is taken. This is not only annoying aurally but it also considerably retards the action desired.

I phoned AE Tech Support and was told that they have no fix for this. The tech told me that they'd just received a memo from Northgate regarding this issue. He suggested that I write to AE and address it to the R & D department.

Although he didn't say this I think there may be hope on this front because on the PC Transporter system the 'ROM BIOS' is not in ROM but is in RAM and is loaded into memory each time the PC Transporter is booted. It should be easier and less expensive changing some software than having to replace a

ROM on the PC Transporter card.

The thing that got me going on this article came in the mail yesterday: an update of some of the PC Transporter software from AE. I sent them $15.00 for it after learning of its availability in one of their magazine ads. I have my system configured so that when I turn on my IIgs and when I have first turned on my MS-DOS-dedicated hard disk my IIgs will boot into MS-DOS.

No documenting textfile came on the software upgrade disks from AE to say what to do with the files on the disks. So I tried what to me was the most obvious thing: I replaced all those files on my hard disk an upgraded version of which came from AE with the upgraded versions. I re-booted and got a configuration error. Displayed in pretty blue. It said press RETURN to continue, or press a key to continue, or something - it's gone now - and then the computer just locked up.

Obviously I had to do something else. I replaced the files on my hard disk with the pre-upgrade versions and everything works correctly again. But why couldn't AE do what is not an uncommon practice with software upgrades: include a textfile or hardcopy instructions about incorporating the upgraded software into one's system!

Oh! It's so maddening. And the prevention of the frustration seems to me so simple! So then I think to myself, "Ah hah, they included no instructions with the upgrade because they planned ahead and included such instructions in the manual!" But in the index there is no entry for 'software installation' or 'installation' or 'upgrade.' I'll have to call them to ask them what to do.

For example, do I have to start from scratch to install the software? I hope not. The software installation was not smooth. I found the manual confusing. I don't want to have to think about it again, to have to figure things out again. I've got my system working and all I want to do is install the upgrade and go on with my business.

One part of the PC Transporter package as it comes to the buyer is a video cassette which shows the hardware installation procedure. I wish this were included as an optional item and the cost of the rest of the system correspondingly reduced, since I do not own a VCR and would rather not have the cost of producing it built into the price.

I went to the public library to watch the video since I thought it might be helpful. For what it was it was good - covering installation of the hardware. But I must say that AE missed an opportunity - since they were going to the trouble and expense of making a video anyway - to describe/dicusss various aspects of the software installation for different system configurations.

After all this I should say, and I want to say, that as far as the general operation of the card is concerned - running dBASE III Plus - I have had no difficulties. It works. Nevertheless if the keyboard problem is not solved I may sell my PC Transporter and buy a different system.

This has also been my introduction to MS-DOS. Microsoft's MS-DOS manual is poor. You would think that with all their work with Apple they might have used some of Apple's manuals as examples of what a good manual can be. Also maybe it's just a matter of what I am used to, but I think the user-interfaces in much of software in the Apple // world are better than those of MS-DOS software.

Satellite Scientific

Practical Peripherals 2400 Modem	$190
Avatex 1200HC Modem	$125
New - Avatex 1200e Modem	$90
Orange Micro C/Mac/GS	$75
Applied Engineering GSRAM +	$450
Proterm V2 (Communications Package)	$85
Anchor 2400e	$170

We have memory for the MAC and GS and II

1 Meg Simms - $375

Anchor Mac Pac
2400 Modem/Cable Software $190

Applied Engineering
2400 Internal w/software $190
GS Accelerator - Call
GS Ram + $450

CMS for Mac
60 meg $795/20 meg $545
CMS for II/GS
60 meg $865 w/SCSI

Chinook Hard Disk for IIC/IIC+ $740
Chinook 20 $650/ 40meg $860
Chinook 40 comes with 2 year warranty
Chinook Drives come with Apple SCSI

Epic Modems with Proterm $195

Authorized Applied Engineering Dealer

Allan Levy
301-340-7839
Satellite Scientific
15200-A Shady Grove Road, Suite 800
Rockville, MD 20850

FirST, LaST or GliTZ?

A FirST Look At NeXT

"Boy! Weren't you really blown out by NeXT?". "Nope.". "Hah? How can you say that? Lookit the graphics, the sound system, the 256 meg - that's MEG, buddy - optical disk, and waddabout that $6500 price tag, hah? Doesn't that do something to you, hah?". "Nope.". "Reactionary!".

And really, I can't blame anyone for thinking such unkind thoughts about me. After all, at first blush, NeXT is a computer revolution in the making. However, I think that there is less there than meets the eye. I also think that, aided by some clever sleight-of-hand, NeXT has been made to look more revolutionary that it is.

Suppose we alter the machine slightly by adding something to it. Yes, I said *add*, not *subtract* (it seems a little lame to say "take away the optical disk, sound and graphics and all you have is a fast Atari"). In this instance, though, let's *add* a standard floppy disk drive - after all, most observers say the machine needs one - and see what we have. Presto! It's a fast Mac II with *enhanced* sound, *enhanced* graphics and *enhanced* hard disk capabilities. Friends, there's nothing new here; it's all enhancements of what we already have. Compare this with the original Mac, with its innovative graphics display, mouse-driven interface and sound capabilities and you can easily see the difference between innovation and enhancement.

> ***"I think that there is less there than meets the eye"***

Now, even after passing over NeXT's gadgetry as enhancements rather than innovations, the $6500 price for the machine still makes it look like an eye-popper. But wait! The $6500 quote is not *retail*, it's *wholesale*. Am I a wholesaler? Are you? Do any of us really feel set to buy these things in wholesalers' quantities? My guess is that if NeXT were ready to ship (which it isn't), and if it were being sold to individuals (which it isn't) then the machine would be retailed at closer to $9000 than to $6000. It would still be a good machine at that price if there were any third-party applications for it (which there aren't) and if those applications could be economically loaded onto the machine (which they can't).

I recall the last time that NeXT's president hauled out a closed-box computer for me to buy. He had decided (for me) that I needed a graphic interface, an underpowered sound synthesizer, 128K of memory and a 400K disk drive. I think that I'll wait for Apple to incorporate some of NeXT's capabilities into an open-architecture Mac, where I can select the options I want to pay for.

Tsk, tsk. Reactionary.

How To Think of a Great CatchyTitle for Your New Computer Program

by Phil Shapiro

Software developers have it rough these days.

It doesn't matter what your software does, if it doesn't have a CatchyTitle, you might as well give up right now. If your software product has a one word name, you might as well take up dentistry. If your software product has a three word name, reconsider driving a bus. If your software product has a two word name, you're getting warmer. To be commercially viable, your software simply must have a bi-word, multi-capitaled name.

Historically speaking, the first offender appears to be VisiCalc, the revolutionary spreadsheet program that heralded a new age in the titling of software. VisiCalc distinguished itself by being way ahead of its time—in the naming of software products. It worked pretty good as a spreadsheet too.

CatchyTitles spread quickly after VisiCalc. WordPerfect, WordStar, MacWrite, MacPaint, PageMaker, AppleWorks, and HyperCard all gave computer users new ways of using CatchyTitle software. Whether software companies lacked RealImagination or whether companies just joined in the BandWagon, is a question many ComputerHistorians are going to be considering for a LongTime.

But meanwhile ComputerUsers across the nation are still scratching their heads at this WholePhenomenon.

Why did it happen in the FirstPlace, and how did it acquire such a momentum of ItsOwn?

After all, software publishers are known for their InnovativeProducts, not their tried and TrueFormulas. What separates companies like Broderbund from General Electric, is that each year General Electric reinvents the refrigerator. Thank you G.E.. On the other hand, trail blazing companies like Broderbund launch NewProducts each year to dazzle and astonish their LoyalCustomers.

If CatchyTitle software weren't bad enough, the CatchyTitle bug has invaded the staid and steady world of computer hardware. Witness the ImageWriter and LaserWriter printers. However, the hardware CatchyTitle award goes to neither of these two veteran printers. By unanimous opinion, the hardware CatchyTitle award goes to the AppleColor Composite Monitor.

AppleColor? AppleColor? Who are those guys trying to kid? The last time I checked, the AppleColors on my monitor looked just about the same as the other colors in the world around me. You folks over at Webster's dictionary take note: AppleColor comes before avocado and after appendicitis in the dictionary.

So all you software developers out there take note: if you're thinking of writing an AwardWinning computer program, you'd better think first of a snappy CatchyTitle. It doesn't matter if your program allows a wristwatch word processor to drive a LaserWriter printer, if your program doesn't have a CatchyTitle, you'll find yourself trying to sell the WrongProduct to the WrongPeople at the WrongTime.

When users will get relief from this CatchyTitle contagion, only time will tell. Let's just hope it's RealSoon.

(The author, a Certified Apple Developer, has recently finished work on two versions of the JoyReader interactive speed reading program. Demo versions are currently being distributed as shareware.)

Mac Games

Sargon 4

a great teacher and opponent

by Bruce Jacobs

Sargon, the granddaddy of personal computer chess programs, is now a great-grandfather. Sargon 4 (for Macintosh 512/Mac+/Mac SE/ and Mac II) carries on in the tradition of it predecessors, which are available for nearly all makes of home computer. In fact, Sargon III was one of the first programs for the Macintosh, released in the summer of 1984. Sargon 4 is distributed by Spinnaker Software Corporation, whereas Hayden Software Company distributed Sargon III. The authors are Dan and Kathe Spracklen, who also head the development team for Fidelity International. Their Mach III is the first chess computer to have achieved a master rating.

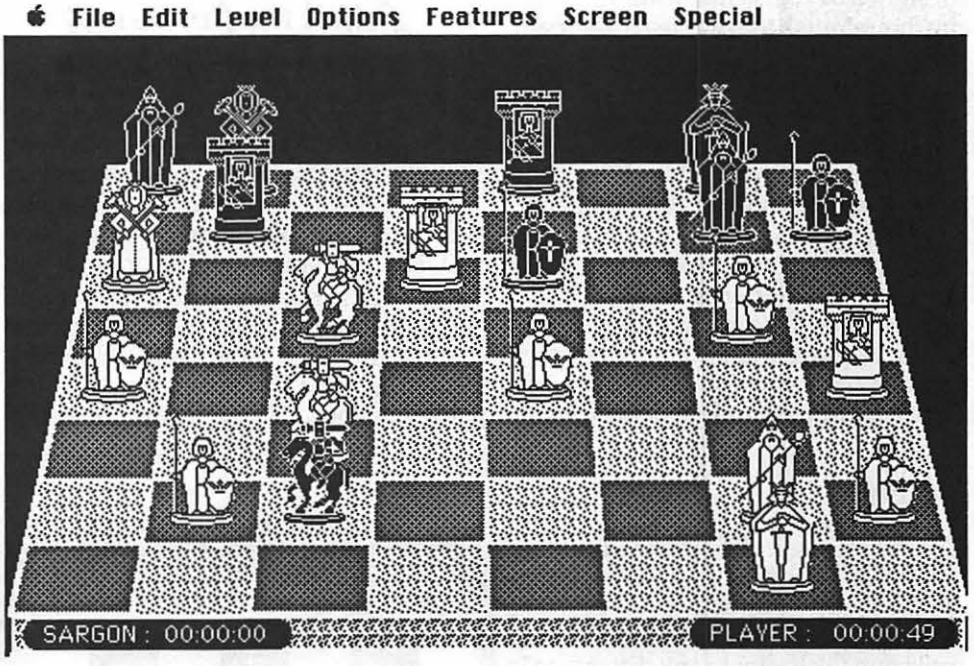
The fundamental features are the same for Sargon 4 and Sargon III. You have a choice of 8 levels of play from 5 seconds a move to 10 minutes a move, in addition to an unlimited time option. You can also select the "easy play" mode which handicaps the program by prohibiting it from thinking while it is your turn to move. It will let you take back a move and will even give you a hint if you ask for one. It will play either — or both — sides, lets you set up the board for problem solving or analysis, will flip the board so that white is at the top, and saves and replays games. The file format is the same, so games recorded by one program can be replayed by the other. The opening move library has not been changed, either. Both programs also include 45 tutorial problems, 107 "Great Games," and a complete instruction book.

The major new features include a 3D board, several new levels, and a clock. Unlike former versions, Sargon 4 is **not** copy protected, and can be run using a hard disk. For those of you lucky enough to have the hardware, Sargon 4 is also in marvelous color.

With Sargon 4, the first thing you notice is the 3 dimensional display, which gives you a view of a chess board from about a 45° angle. Five distinctive chess sets come with the program, and for those of you with artistic talent there is a piece sculptor which lets you create your own. The pieces are moved by clicking and dragging, just as you would move an icon on the desk-top. Clocks showing the time for each side are also displayed. If you want, you can switch to a 2 dimensional representation, which looks like the diagrams you see in the chess literature. When you use the 2D board, you also get the move window and the search window, familiar to users of Sargon III. The move window lists the moves made in the game and the search window lets you see what moves Sargon is considering and its estimation of how much it is ahead or behind. With Sargon 4 the move list can be printed out at any time.

There are four new levels in Sargon 4. The countdown level gives you a specific amount of time for a set number of moves, as in normal tournament play. The fixed depth option tells the program to look a given number of moves ahead for each move. A mate finder level lets you search for mate in a specified number of moves, for solving chess problems. Perhaps the most useful of the new levels for the beginner or even casual player is the novice level. It just isn't any fun losing all the time, but playing at the novice level, even a less experienced player has a chance. The program makes its moves almost instantaneously at this level, so you could use it for a lightning chess opponent, too.

Sargon 4 claims to beat Chessmaster 2000™ seven out of eight games. Not having Chessmaster 2000™, there was no way to test this. However, since ➥



Speed	Playing White	Caro-Kann	Sicilian	Ruy Lopez	Queen's Gambit	English	Grünfeld
5 sec	III	4	4	4	4	4	DRAW
5 sec	4	DRAW	III	DRAW	4	4	DRAW
15 sec	III	DRAW	DRAW	III	III	4	DRAW
15 sec	4	4	III	4	DRAW	DRAW	III
30 sec	III	4	4	III	III	4	III
30 sec	4	DRAW	DRAW	DRAW	III	DRAW	III

GS Games
HARDBALL
thoroughly enjoyable and realistic
by Dan Goldsamt

So you'd like to be at Memorial Stadium, managing the Orioles rather than Frank Robinson, or Earl Weaver in days of old, and this time making sure that they trounce their baseball foes? Now it's almost true, and you don't have to drive to Baltimore and look for parking to do so.

Hardball, a thoroughly enjoyable and realistic game by Accolade, was designed by Bob Whitehead. He writes in the manual that he used the computer version to fulfill his fantasies of never getting the chance to play and manage a big league baseball team. Well, he has now. In Hardball he has both— a combination hand-eye coordination and strategy baseball game.

And in doing so, he seems to have thought of almost everything. For example, eight different types of pitches can be thrown: fastballs (straight, and either very fast or fast), offspeed pitches, change-ups, curveballs (which will break to the right or left, depending on the pitcher's being right or left-handed), two types of screwballs (which are the opposite of curve balls), sinkers and sliders.

Whitehead offers a multitude of game options for actually playing the game. For instance, you can choose to either play against another person or

> *". . .using the computer to fulfill the fantasy of managing a big league baseball team."*

against the computer, you can either be the home or visiting team, or you can choose to employ a designated hitter (DH) to do your slugging or not.

He also has constructed two evenly-matched teams which are used to play the game: the visiting team—called the All-Stars and the home team—called the Champs. These teams consist of pre-established players who possess carefully-configured statistics and are evenly matched. By that, I mean one team could have a weak-hitting catcher (a la Rick Dempsey, formerly of the Orioles and now the Oakland A's), while the other team could have a catcher who could swing a Johnny Bench-type slugger's bat. For the most part, the match-up approach goes for every other position, from a slow, lumbering first baseman on one team to a blazing fastball relief pitcher on the other team. In this way, Whitehead makes the game not only diverse but stimulating.

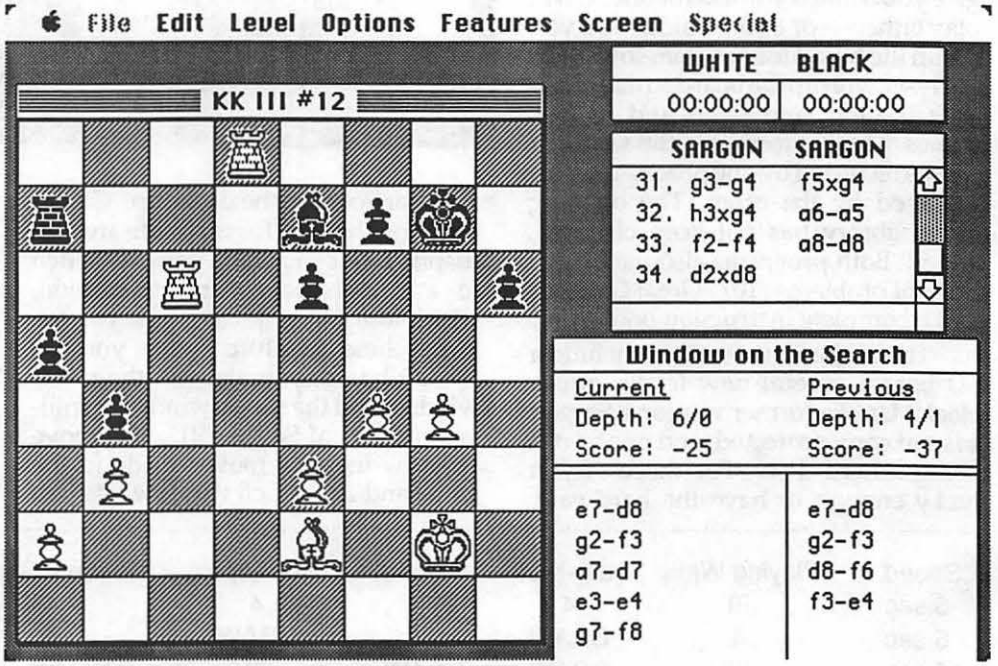
The simulation approach used is very good and covers practically everything that makes baseball as loved and exciting as it is. This includes how Hardball treats stealing bases, bunts, hit and run plays, pitches that hit the outside corner (we have to have some of those), left-handed batters and pitchers, designated hitters, specialty pitches for each pitcher, and intentional walks. Of course, to be a purist, Hardball also could add players' injuries (Kurt Gibson in this year's World's Series), batters hit by pitches, and put chewing tobacco in some players' mouthes.

This game's graphics are superb. All of the graphics are clear, crisp, and

---

➥ Sargon 4

I do have Sargon III, I decided to stage a tournament. The programs were run under Switcher on a 2 meg. Mac+. The "easy play" option was chosen for each program to eliminate any difference in time due to human delays. The programs played out six popular openings, at three speeds, each program taking first the white, and then the black pieces. The opening positions and results are shown below. Note that the final two openings were taken from last years world chess championship match. The play showed that more than minor changes had been made to the chess algorithm. Not only did the programs choose different moves, in some instances both programs thought they were ahead by as much as a pawn at the same time. On the whole, Sargon 4 seemed to run faster and get more accurate evaluations. Still, there are positions where the older Sargon seems to get better results, for example the Grünfeld. In fact, I played this out at the 1 minute time speed and got a draw and another win for Sargon III.



Over all Sargon 4 earns an excellent rating. Impressive and useful features have been added to what was already a classic Macintosh program. For a wood-pusher like myself, Sargon 4 is a great teacher and opponent, and although it is clearly not as powerful as a dedicated chess computer, it should give a good game to anyone below the expert level.

distinct— from the players' socks, batting helmet, and undershirt to even the expressions on the fans' faces. Then, there's the sound which is very good, based on using digitized sound effects to create real ballpark noise. Sounds are very clear, and probably are more so if external speakers are hooked up to your GS system. When the umpire calls a strike, it sounds like "STRIKE!!!!". When the ball hits a bat, it sounds exactly like what it should, a ball hitting a bat. There's even an organ which plays "charge" during key, exciting moments in the game! (What would a game be without that?)

"Sounds are very clear, when the umpire calls a strike, it sounds like "STRIKE!!!!"

Hardball's documentation is excellent although the manual is brief (10 pages). Nonetheless, it includes game options, how to select a pitch type, how to throw a pitch and effectively use the nine (yes, nine) pitching zones available over home plate, how to field a ball, throw to a base, the Manager's decision screen, player substitutions, exchanges of positions (let's try Larry Sheets of the Orioles in center field, could he really play there?), game play, scouting reports on some of the pitchers on both teams (!), and miscellaneous notes, actually pointers on what Whitehead programmed into the game's strategy and tactics. (For example, it mentions that as a pitcher gets tired, the probability of throwing a strike goes down.)

The game can be controlled and manipulated by using either a mouse, joystick, or the keyboard, and the manual explains how to do so. I preferred the joystick over the keyboard and mouse because it allowed me to get better control over the pitches I selected, balls I chose to hit, and ways in which I chose to move my outfielders. When using a mouse, I didn't get "a good feel" as to where, or even if, my outfielders were moving or where my next pitch was going to go. With a keyboard, there are just too many keys, and they interfere with easily manipulating your players and pitches— it's very confusing.

My overall rating of this game is 9 out of 10; see you at the ballpark!

First impression
Cirrus 60 megabyte hard disk

by John R. Van Beekum

For $864 ($839 cash + 3% for MC) I received a 4-1/2 pound bundle of joy five days after ordering (three days to have the disk in stock, two days shipping). The La Cie phone people are courteous and efficient (they did seem busy the two times I spoke with them.)

The 60mb hard disk is plugged into a Kensington System Saver atop my Mac Plus. Twelve seconds after pushing the "on" button, my desktop appears with three volumes. The fan has a noticeable noise when it starts up but quiets down and is no louder than an SE. You can hear it; it is not objectionable.

It sits vertically (2-3/4" wide, 6-1/2" tall, 9-1/4" wide) beside the Mac. The cord is not long enough to put around the external floppy drive so that now sits to the right of the hard disk.

The disk comes loaded with the latest system (although not all of the files) and their Silver Lining software as well as a separate floppy with the software.. A much-copied sheet of paper informs me that the manual is in production and will follow. I knew in advance that their bonus software, the $149 Silver Server which allows access to remove volumes via modem, would delayed. There is also a spiffy cordura carrying case.

Silver Lining, luckily, works intuitively and I was able to set the proper interleave factor (it does all of the figuring) and set up my partitions.

That's right, partitions. I split my hard disk into three separate volumes. Via a desk accessory I have the option of having one to three volumes show up on startup (the others can be mounted at any time). One 20mb partition is for all of the system files and the applications both my wife and I use. We each have a 20mb partitioned volume our own files. We save all documents to these volumes, not the system volume.

I keep write-protected originals of all the system files and applications so I can rebuild the system volume if necessary. I use Disk Express to defragment and optimize the file structure. Since we're not making any saves or deletes to this volume it stays clean and fast. We back up our individual files to floppies.

I purchased this disk rather than a CMS or an Applecrate because it uses a 3-1/2" disk mechanism. I feel this is a newer and faster technology than the 5-1/4" disk used in the other drives. I also liked their advertising and phone support.

I've only had it two weeks but here have been no rude disappointments.

La Cie, Ltd. (1-800-999-0143)

II Review
GEOS
a graphic environment for the Apple II

by Bob Oringel

GEOS is a complex application program, and one of the hardest that I've had to review. Hard, because I have to override a bias against graphic environment applications on the Apple II, which was really conceived, and works best in my opinion, as a text environment device. My head says, "You want graphics, you get a Mac".

GEOS (Graphic Environment Operating System), by Berkeley Softworks of Berkeley, California, is an operating system, called deskTop, along with a word processor, called geoWrite, a spell program and dictionary, called geoSpell, and a paint program, called geoPaint. The GEOS package also includes document merge capability in geoMerge, Text Grabber, which converts other word processor's documents (AppleWorks, Word Perfect, MultiScribe) to the GEOS environment, a set of desk accessories—calculator, notepad, alarm clock, and photo and text albums with which to save and transfer graphics and text between applications. Additional applications either now available, separately priced,

or under development are GeoCalc, a spreadsheet, and geoFile, a data base.

GEOS was originally supplied to the user on three double sided 5.25 disks, a small 1" X 2" interrupt-manager card for slot 7 of the //e, which

"...an operating system, word processor, spell program, and paint program..."

you must use if you don't have a mouse, and a loose-leaf bound manual. Although the disks could be copied, and the user was encouraged to do so, the original or the supplied backup boot disk was necessary as a key, each time, to activate the system. Berkeley Softworks now supplies GEOS on 3.5 inch disks as well as 5.25's, and without the copy protection, which we applaud. The GEOS manual is very thorough and extremely well written. It includes an excellent tutorial.

GEOS must be installed on the user's Apple II. The procedure is easy if you have a mouse, the preferred interface if you use a graphic environment. It is a bit more complex, but not at all difficult, if you will use only the keyboard with the program, and includes plugging the interrupt-manager card into slot 7. My copy of GEOS came with the three 5.25 disks. Disk #1 has the operating system/boot program on one side, and geoWrite on the other. Disk #2 has the backup of the operating system, and geoPaint. Disk #3 has the dictionary and the spell program. The large number of additional and smaller files and applications are spread among the three two-sided disks.

I tested geoWrite and geoSpell against my everyday use of AppleWorks and Sensible Speller. GeoWrite uses a writing window which partially covers the monitor screen. The window can be moved around a page as necessary, and the preview-page option permits a compressed image of the whole page, but only one window is available to the user on-screen at a time. Typing must be slow—no problem for a hunt and peck typist like me—because it takes a few seconds for typed characters to appear on screen. Processing graphics, as I have mentioned, is just a lot slower than processing text. GeoSpell is a fine spell checking program. It uses a supplied dictionary, and you can add your own specialized spellings. The prompts to replace or accept spellings not found in its dictionary are clear, and I suspect very fast using a mouse, but slower using the keyboard. Text Grabber easily permitted me to convert a ProDOS text file to a GEOS file.

As to printers and interfaces, GEOS has drivers for a large group of interface cards, and printers, one of each which must be installed during the installation process. Berkeley Softworks indicates that still more drivers will be added with time.

If relatively slow speed is no detriment, then GEOS is an excellent addition to the programs which are keeping the Apple II alive and well.

GAP/Publish It Revisited

by Gary Hayman

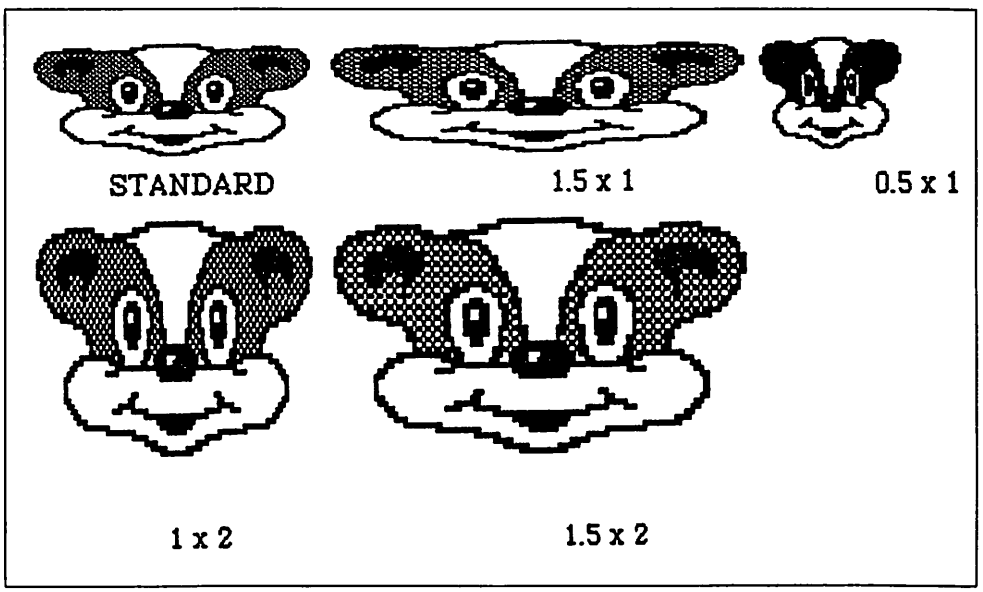
Graphics and Picture Conversion (GAP) has done it again. The newest version, about which I was unable to report in my November WAP Journal article *Importing Printshop Graphics Into Publish It*, now contains size and aspect ratio choices in the menu. This is of importance to you if you want improved Print Shop pictures contained in your Publish.It (DTP) printouts.

If you examine the pictures in my November article, though quite acceptable, they really have a slight vertical squashed look about them. This would cause any graphic which is supposed to be round, to look oval.

Version 1.2 of GAP now gives you several choices of how you can save your converted Print Shop graphics in a HR or DHR format so that they can be used by Publish.It in DTP documents.

1.5 x 1 6	1.5 x 2 2
0.5 x 1 9	2 x 2 1
1 x 2 3	3 x 3 1
Variety 5*	

* the first five aspect ratios of single PS graphic on one page



You can see the Publish.It printouts from the figure that accompanies this article. Please note that 0.5 x 1 and 1 x 2 appear to be the "roundest". The others, except 1.5 x 1, are quite acceptable if roundness is not critical. I personally like the 1 x 2 size, although only three different graphics per page are saved. The 0.5 x 1 is very small but may have some use in mast heads. You may find that the Standard is quite acceptable, and its ability to place nine different graphics on a HR or DHR page is desirable when cataloging your PS art.

In my November article I gave you a fix for automatically saving your graphics as a black lines on white drawing. The revised GAP has this feature already incorporated - you do not have to use the fix on version 1.2. You can invert the drawing and view it from a menu selection before saving it. Please remember to invert the drawing if you need to - before you save it.

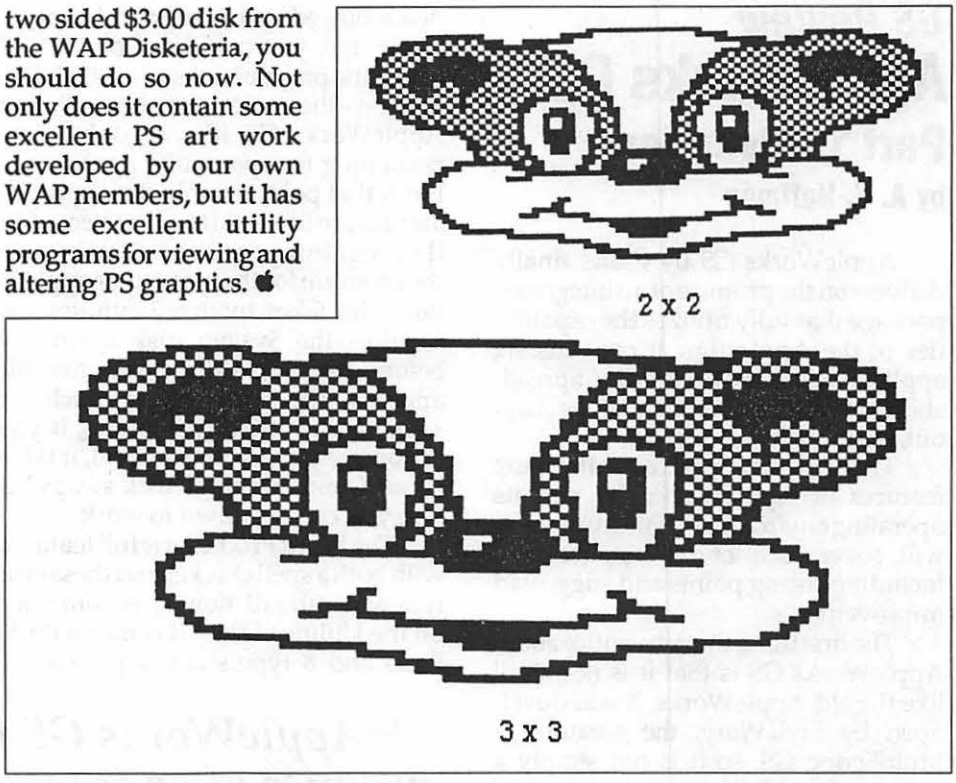
The procedure for v1.2 is to boot your GAP disk and through various menus select Convert A Graphic - PS graphic, select the PS graphic size (eight

choices - explained above), select output graphic type, identify location of PS graphics, choose the 1-9 PS graphics (follow screen directions), select Invert/View/Save as necessary, and tell the program where you want it saved.

By using Publish.It you can make a picture catalog of the graphics so that you can use them just as you use the present art work supplied with the Publish.It program. Follow the directions in my November article (p.23).

GAP was written and revised by John Wrenholt and is available from Big Red Computer Club (BRCC), 423 Norfolk Avenue, Norfolk, NE 68701, (402) 379-4680, for only $9.95. If you don't have the current copy (with the aspect ratios), drop BRCC a line or give them a call. You might be pleasantly surprised as to how you can get your copy updated.

The *Bushy Bear* drawing in this article is from WAP disk 172 - Print Shop Graphics and was created by Hank Caruso. If you haven't purchased this two sided $3.00 disk from the WAP Disketeria, you should do so now. Not only does it contain some excellent PS art work developed by our own WAP members, but it has some excellent utility programs for viewing and altering PS graphics.



Games (P)review
Heart of the Maelstrom: Wizardry 5

By David Granite

This is an excellent game—get it when it comes out!

Wizardry 5 (Sir-Tech, Apple II series) is a throwback to the earlier Wizardries (numbers 1,2 and 3). You form your band in the castle and venture down into the dungeon. What sets this Wizardry apart are the character interactions you have in the dungeon. Much like the Ultimas, there are many people to talk with in the underground. You must interact with them, question them, and get objects from them to complete the quest.

As usual, the ultimate Bad-Guy is at the bottom of the dungeon, but getting to him involves several sub-quests. In addition, there are many riddles, none of which are dinky, by the way. You get clues or the actual answer by asking the dungeon dwellers the right question. Sometimes they may steal from you or attack you. An interesting feature of this game is that if you kill someone from whom it later turns out you need a datum or an object, you can resuscitate him/her in the Temple of Cant for a fee. This is an interesting twist, since the Temple was always the place where we brought back *our* own boys and girls when they bought it. Bringing back enemies is poetic justice.

This dungeon is tough; also, it's not a simple grid. Remember to start in the middle of a *large* piece of graph paper. You will meet some tough mothers, but, in general, the combats are fair. You will also have some interesting new spells like **LOKARA** or "earth swallow" which causes the earth to consume susceptible monsters. You will also have the ability to save in the dungeons—do this after each (successful) combat.

Among the many interesting features of the game are the pools. There are many underground pools in which you must swim. You have to get to the bottom of them to find the good stuff or to have the bad stuff find you. One way to go to the bottom is to drown one of your characters and then lower the corpse all the way. Obviously, kids, do this trick with one of your weakest fighters (I used my bishop). To increase your ability to enter the pools, you have a *swim* skill that increases as you go deeper successfully in the pools. It also increases as you go up in levels.

The game tracks your marks (kills) and RIPs (deaths and rebirths), and some of my characters got right up there in the resuscitation derby. By the end-game, my people ranged from 16 to 18 in level and one had 15 RIPs.

This game has incorporated some of the best features of the Ultimas into the Wizardry format. Interaction with game-generated characters is always fun and broadens the game, making it more realistic. The graphics are better, but the dungeon is still the old 1 square at a time routine. That is, of course, a minor quibble. In general, this was one of the best games I've played and I strongly recommend it.

You will want to read about Balance of Power on page 38!

GS Review

AppleWorks GS

Part 1 - Overview

by A. E. Hoffman

AppleWorks GS by Claris finally delivers on the promise of an integrated package that fully utilizes the capabilities of the Apple IIgs. It contains six applications: Word Processing, Spreadsheet, Database, Graphics, Page Layout, and Communications.

This overview will cover the basic features of AppleWorks GS and its operating environment. Future reviews will cover each of the applications, including strong points and suggested improvements.

The first thing that you notice about AppleWorks GS is that it is not at all like the old AppleWorks. It was developed by StyleWare, the creators of MultiScribe GS, so it is not simply a rewrite of AppleWorks to make use of the mouse. With the exception of the word processing application (based on MultiScribe GS), the program looks to be written from scratch to make the most of the IIgs and to maximize compatibility across the applications. The result is an integrated package that, in addition to operating nearly seamlessly, provides individual applications that are at or near the best for each job. All feature pull-down menus invoked by the mouse in a Mac-like graphic interface.

AppleWorks GS comes with a comprehensive 371 page User's Guide, a 286 page Reference Manual, a 16 page "Getting Started with AppleWorks GS," and a 7 page reference card. The program comes on three nearly full 3 1/2" disks: a System disk, a Program disk, and a Utilities disk. Claris decided not to include example files and tutorials for each of the applications as it did for AppleWorks because it would require a fourth disk and an even longer User's Guide. Nevertheless, I still miss the tutorials and the "Tips" section of the AppleWorks manual.

Loading AppleWorks GS involves booting the System disk to get to the GS/OS Finder (which takes a little over a minute while a screen says "Welcome to the IIgs" as it fills a horizontal thermometer indicating its progress). You then insert the Program disk and launch it from the Finder. About 2 minutes later (and after reinserting the System disk followed by the Program disk again if, like me, you only have one 3 1/2" drive) the program asks you which files to open - the choices are either all your AppleWorks GS files or only those pertaining to a particular application. From that point on only the appropriate files are listed. After you select a file, the program opens it as well as loading the program for that particular application. This takes another 2 minutes and requires the System disk again just before the application and the file appears. The procedure is much the same, and as time consuming, if you are opening a new file. In total, it takes about 6 minutes and 5 disk swaps before you can get down to work.

The Word Processor is full featured with both a spell checker and thesaurus functions (the dictionary is contained on the Utilities Disk). It comes with 11 fonts and 8 type sizes, supports full color text, and provides statistics on the document. Mail merge documents can also be created by drawing on data base fields.

"AppleWorks GS finally delivers on the promise of an integrated package that fully utilizes the capabilities of the Apple IIgs."

The Spreadsheet application is a good general number cruncher with several improvements over AppleWorks. Copying and moving data are much improved and AppleWorks' infuriating way of handling text that overflows a cell boundary is mercifully gone. The major new feature is the ability to create graphs (line, bar, pie, and scatter plots) with spreadsheet data.

The Database application allows you to design a data entry form, enter data, select or sort records, and print reports. The records can be displayed in tabular form or individually on screens of the user's design.

The Graphics application seems to combine the best of both painting and drawing programs to create graphics that can be shared with documents from other applications. For example, a database can have graphics fields, and the graphics applications can be used to enhance graphs created in the spreadsheet application. The Page Layout application brings desktop publishing to the IIgs, allowing you to combine text and graphics (including spread sheet graphs) into a document. Finally, the Communications application supports Apple and Hayes- compatible modems and 4 data transfer protocols.

AppleWorks GS can handle up to 14 open documents at a time, each in its own window. Only one window is "active" at a time. Copying or moving from one window to another (or within a document) is accomplished by using the clipboard or by holding down the control key while dragging with the mouse.

Another feature that I like is the alternative to clicking and dragging for selecting multiple objects or designating a range of data - you click the mouse on the first object or cell and then hold down the shift key while clicking for each successive object or on the last cell of the range. Another convenient feature that is available on the File menu of all applications is the Delete File command. This allows you to delete files immediately rather than waiting until the end of your session to clean up your disks. Printing includes several options that I like: several page sizes, vertical or horizontal printing, and no form feed gaps between pages, which I find useful for printing documents that I intend to reduce later on a photocopier. One feature that AppleWorks GS lacks is the ability to create macros, although the ease and logic of the pull-down menus will eliminate the need for many of the macros designed for the keyboard environment of AppleWorks.

AppleWorks GS requires 1.25 megabytes of RAM. It will read AppleWorks, MultiScribe GS, and ASCII files and several graphics formats. Once imported into AppleWorks GS the files carry icons that are indicative of the application.

AppleWorks GS has a retail price of $299, but is available through mail order at about $200. Upgrades from AppleWorks 2.0 and 2.1 are available for $99, and from MultiScribe GS for $149. Call Claris at (800) 544-8554 to get an upgrade package. While you're waiting for it to arrive, look into buying either another 3 1/2" drive or a hard disk to avoid the long waits and disk swapping.

Next month I'll review the Word Processor and the Spreadsheet applications of AppleWorks GS.

FoxBASE+/Mac

An IBM-PC Compatible DataBase

Reviewed by

Michael Yourshaw

A high-end, speedy, database for the Macintosh featuring compatibility with the IBM-PC dBASE "standard" plus a number of useful enhancements. Pros: Excellent compatibility with PC dBASE programs; powerful programming language; very fast; convenient database creation and browsing. Cons: Most advanced features require complex programming; Mac-specific screen and report tools not yet available; current release still has a few bugs.

Product Details

List price, $395; mail order, about $215. Version tested, 1.00. Runs on Macintosh Plus, SE, and II. Requires 1 Meg RAM, 800K drive, and hard disk. One-time activation key copy protection. Fox Software, 118 W. South Boundary, Perrysburg, Ohio 43551.

Features

FoxBASE+/Mac, released in April, is generating excitement among database gurus who are skilled in the black arts of dBASE for the IBM-PC. Is it also "for the rest of us?"

There are many other Mac database applications on the market, ranging from simple list keepers to powerful, programmable development tools for commercial applications. Some of these are even, dare I say it, "insanely great." But, until recently, none of the Mac database applications was particularly compatible with Ashton Tate's dBASE, the de facto standard for a huge number of existing IBM-PC databases.

Most Mac users have been untroubled by this lack of dBASE compatibility. Even in the PC world, dBASE is considered clunky, hard to learn, and weak on features. The dBASE command-line interface is as antithetical to the spirit of the Mac as MS-DOS itself. Besides, most Macintosh database applications can read or write specially formatted data files that can be shared with dBASE when necessary. Nonetheless, dBASE is pervasive in many business environments and many of us need a way for our Macs to interact directly with these dBASE-style databases.

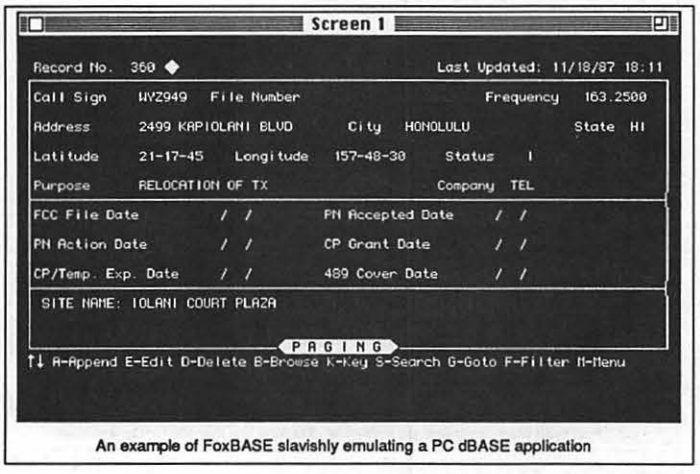
In the last year, three products were introduced to bridge the Mac-dBASE gap: Nantucket's McMax, Ashton Tate's own dBASE Mac, and now FoxBASE+/Mac. McMax is a straight translation of the dBASE environment onto the Mac, with a user interface only Bill Gates could love. McMax is quite compatible with PC data and programs and is satisfactory for those who already are comfortable with dBASE's arcane commands. At the opposite extreme, Ashton Tate's product is a true Macintosh application, making good use of menus, dialogs, on-screen drawing, and other features that make the Mac such a good database environment. Strangely though, dBASE Mac is not very compatible with PC dBASE. It can use dBASE data files, but not dBASE report formats or programs.

FoxBASE+/Mac promises the best of both worlds—complete, uncompromising PC dBASE compatibility plus a non-procedural Macintosh environment that is easy to learn and intuitive to use. Does it deliver? Read on.

For starters, FoxBASE really does implement virtually all of the dBASE III+ functionality as it is found on PCs. It will work with source programs, databases, memo files, memory variable saves, screen and report formats, and label definitions straight from a PC. (The few missing pieces from dBASE III Plus compatibility are CATALOG, IMPORT/EXPORT, and COPY/APPEND of .DIF, .SYLK, and .WKS formats.)

If you can get dBASE files onto a Mac, using a modem, direct connection, network, or an MS-DOS disk drive such as the DaynaFile, you can probably fire up FoxBASE and do all the same things you can do on the PC without changing a line of code or reformatting a single file.

In addition, FoxBASE allows programmers to create database applications that present a Mac-like interface on screen to the end user, complete with custom menus, dialogs, radio buttons, check boxes, and standard text editing.

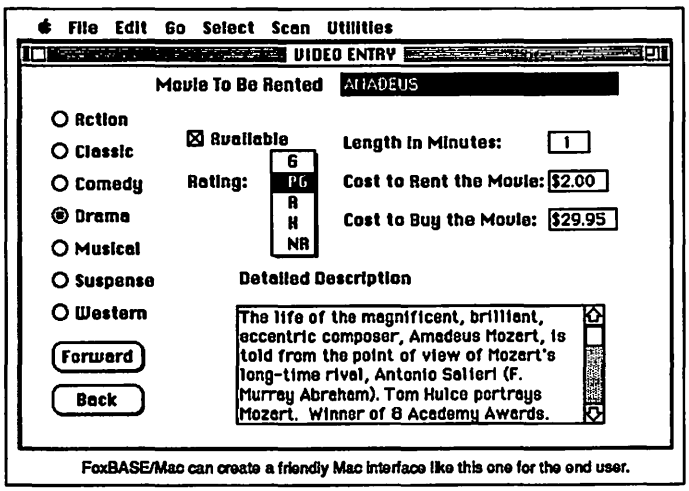


An example of FoxBASE slavishly emulating a PC dBASE application

FoxBASE offers several enhancements on the basic dBASE model. Two of these struck me as especially handy. First, FoxBASE incorporates a "help" facility that allows database developers to create sophisticated context-sensitive help for end users. It is very easy to create a help file (it's just another database) that rivals those found in some of the best commercial applications.

Another feature that I needed almost immediately was FoxBASE's User Defined Functions (UDFs). I had to include a cosine function in a fairly complex database search to find radio stations within 40 miles of a given geographic location. FoxBASE, like most database programs, does not have built-in trigonometric functions. But unlike most other programs, the UDF feature allowed me easily to write my own cosine routine, and then call it

from my main program as though it were a built-in. In theory, I could have used more awkward programming techniques to get the same result without UDFs in PC dBASE, or McMax. In practice, I never got them to work. (Note that FoxBASE UDFs are written in the FoxBASE programming language, not as external functions written in a "real" language such as Pascal or C. While an external function capability is promised for a later release, I can't complain about the performance of the UDFs—dBASE Mac, which does have trig, took 10 times as long to run my search as did FoxBASE.)



FoxBASE/Mac can create a friendly Mac interface like this one for the end user.

Performance

The first time FoxBASE encounters a dBASE index or program it makes its own more efficient version, which takes a few seconds. After that, functionality with dBASE programs and data is just like that on the PC. The compatibility with PC-dBASE seems excellent. It is safe to say that most PC-dBASE programs will run on a Mac with FoxBASE with no alterations. Most of the exceptions should require only minimal fine-tuning. Indeed, based on a few test cases and a comparison of the publishers' own claims, it appears that FoxBASE is somewhat more compatible with the original dBASE than is McMax. It bears repeating that only FoxBASE and McMax can load-and-run dBASE programs—dBASE Mac cannot do this.

FoxBASE is also one of the fastest high end database programs running on the Mac, competing with McMax and Omnis. I was able to run in minutes a complex file selection routine that took hours in dBASE Mac. Anyone developing a time critical application that will have to use and maintain large databases should consider FoxBASE.

Support of the Mac user interface is mixed. FoxBASE presents an attractive and useful initial complement of windows to the user, and uses Mac techniques fairly well for basic database creation and browsing. However, dBASE lurks behind the superficially appealing user interface and will soon surprise the unwary.

It is possible for a programmer to create a custom Mac look-and-feel for an application that will be used by non-experts. Support for most on-screen features is complete, and seems to work well.

However, the programmer will enjoy virtually none of the benefits of the Mac interface in laying out screen and report formats. This must be laboriously done using FoxBASE's extensions to the dBASE language. Fox promises that an early update will provide graphic-oriented screen layout tools.

Problems

Naturally, I ran into one of the few incompatibilities between FoxBASE and dBASE on my first try. Because FoxBASE implements some Mac-oriented functions not found on the PC, some program words, such as "menu," which might be used as variable names on the PC, have a special meaning to FoxBASE. It is trivially easy for someone familiar with dBASE programming to rename any such troublemakers, but a non-programmer might never figure out what to do. I would hope that Fox will enhance the product to include an optional "strict compatibility" setting that will bypass any non-dBASE enhancements.

Other areas of partial incompatibility stem from differences between the Mac and PC keyboards and character sets. Some PC programs make heavy use of the PC's function and other special-purpose keys. FoxBASE handled these well on my PC-like enhanced keyboard (with the exception of the Esc key), but users of the regular keyboard might experience some confusion. Also, the PC has lots of graphics characters consisting of little bits of lines and corners that it uses to display or print lines and boxes. QuickDraw on the Mac makes it easy for programs to draw on the screen without using such characters; instead, the Mac uses its character set for special symbols such as ß, *f*, and © instead of graphics. FoxBASE supplies, on an "as is," unsupported basis, a shareware IBM-style font (IBM Klone) that is supposed to give the Mac an IBM-style character set. I could never get the available sizes of this font to fit correctly on the screen or laser-printed line. A public domain font by Bob Pulgino (IBM Extended) worked much better on the screen, but does not support the LaserWriter. Fox should include a fully supported solution to this problem.

FoxBASE's gallant attempt to preserve MS-DOS compatibility within the framework of the quite different Macintosh hierarchical file system has some rough edges. File names with spaces in them can sometimes fool FoxBASE. Also, like its MS-DOS relatives FoxBASE programs are more comfortable with fully typed out "volume:folder:file" path names than with the Mac's familiar "GetFile" and "PutFile" dialogs.

Finally, I encountered a few true bugs. Fox's customer support folks promptly rushed me a new version whenever I called in with a problem for which the fix had been discovered. Nonetheless, even the current version still has some "gotchas" (what program doesn't?) that are only to be fixed in the next formal release. At least one of these, a problem with programmed APPENDs, affects PC compatibility, but is easily worked around if you have some programming expertise.

Documentation

Documentation consists of a "Reference Guide" pamphlet and two three-ring binders, which contain "Quick Start" instructions, a tutorial, and a reference manual. In addition, the reference manual is replicated in an easy-to-use on-line help file. FoxBASE is a complex program, and Mac users who won't consult the documentation will not be able to get very far. The documentation does a good job of orienting the experienced dBASE user to FoxBASE, and of getting the novice off to a start. What it does not do is teach the intermediate-

level user how to get the benefits of programming. This is a reasonable omission, as there are many dBASE programming books available to meet this need.

The documentation is well-done, and clearly written. The tutorial proceeds through thirteen lessons, beginning with the basic mechanics of starting and running the program, developing a simple database, using each of the major program features, and concluding with a very sketchy introduction to programming. The tutorial is easy to follow and thorough. An experienced database user might skim through it in an hour or two. A novice better count on four or five sessions of an hour or two each.

After completing the tutorial, the user will rely on the reference manual. About a third of this manual covers the program's features and operation, as well as sections on fine tuning, and hints & tips. These sections are not comprehensive, but contain some good ideas. The remainder of the reference manual presents detailed descriptions of the commands and functions that make up the programming language. This material is organized alphabetically, which makes it a suitable reference for the programmer who needs to check on the correct grammar of a command, but rather daunting for finding out how to do something. For example, who would guess that the command to read the next record is under "S" for SKIP? A greatly expanded cross-referencing index would be a very helpful addition to the documentation.

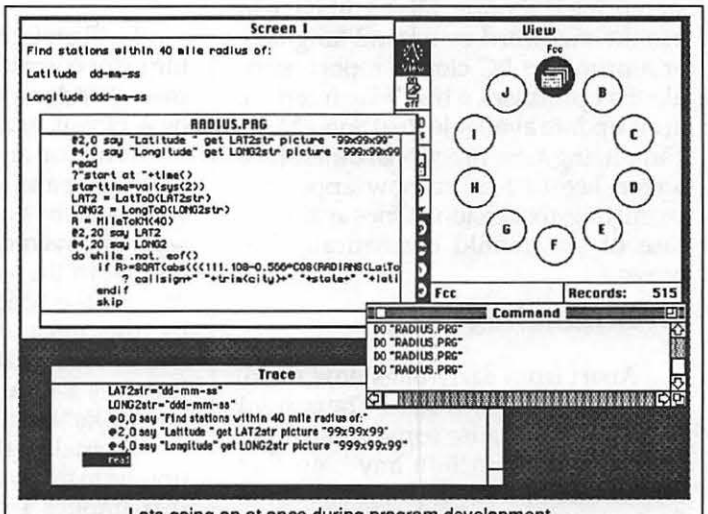
Ease of Learning

It is fairly easy even for a novice to start using FoxBASE by, say, creating a simple mailing list database. The steps involved are relatively straightforward and the menu choices are easy enough to figure out. But when it comes to using the database, for example to sort, select records, or print mailing labels, the learning curve suddenly gets much steeper. To generate any sort of turnkey database application presents even more daunting challenges. In sum, FoxBASE isn't even on the long list of databases I'd recommend for naïve beginners who are starting from scratch.

On the other hand, for FoxBASE's natural audience—program developers and end users who want to run a pre-existing dBASE program—the necessary learning over and above what such users already know is small. The Mac user interface works well for these users to make FoxBASE's features fairly obvious. The on-line help is helpful for programmers, not for others.

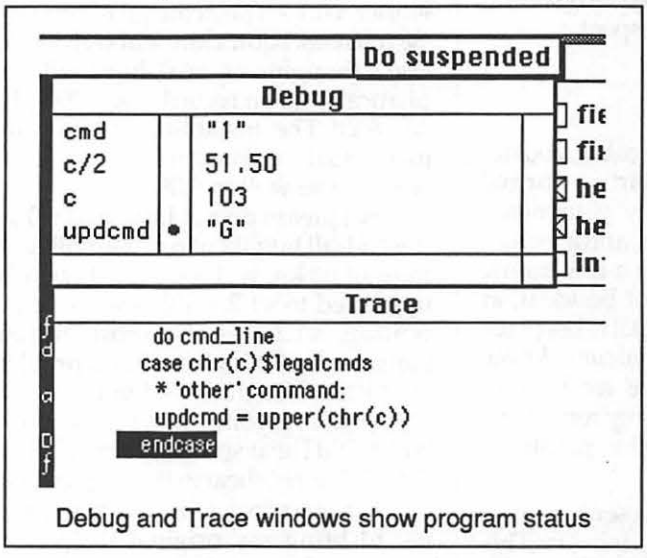
Ease of Use

If you have managed to learn as much about FoxBASE as you need to know, you will find it a pleasure to use. FoxBASE's ability to keep multiple windows on screen—perhaps several program segments, a database view or two, simulated PC screens, a debug window, and the command line window—greatly enhances program development.



Lots going on at once during program development

For example, the Debug window allows you to monitor the values of variables and expressions while a program executes, simply by typing the name into the window. Also, you can set breakpoints to cause the program to suspend whenever the value of a specified variables changes. The Trace window shows the source code of the code being executed and its context within the program. Trace allows setting of breakpoints to suspend execution whenever a specified statements are executed.



Debug and Trace windows show program status

These powerful source-level debugging tools make development much easier than old-fashioned "crash-and-guess" techniques.

Also, FoxBASE makes extensive use of pop-up menus to assist with database and field selection and formula entry. Similarly, the database browse view, with easily rearranged fields, makes it easy to get a quick-and dirty look at your data.

Fcc

state	status	callsign	filenumber	frequency	city
NY	A	KFL943	25560-CD-P-3-83	158.1000	LAS VEGAS
NY	A	KFL943	25560-CD-P-3-83	158.1000	LAS VEGAS
NY	A	KFL943	25560-CD-P-3-83	158.1000	LAS VEGAS
NY	A	KFL943	25594-CD-P-3-83	152.8400	LAS VEGAS
OK	A	KKA341	21732-CD-P/ML-01-86	152.0600	TULSA
OK	A	KKA341	21732-CD-P/ML-01-86	152.1800	TULSA-41ST TW
OK	A	KKA341	21732-CD-P/ML-01-86	454.1750	TULSA
OK	A	KKA341	25070-CD-P/ML-02-86	454.1000	TULSA

The handy FoxBASE/Mac browse window

FoxBASE remembers recent command line entries, which facilitates redoing things as you debug without tedious retyping.

Ease of use is poor, however, when it comes time to lay out screens or design printed reports. Here you have to use the awkward command language or a primitive PC-cloned report module. Fox promises a true Mac interface in an update available Real Soon Now. Tantalizing, non-functional hints of the screen layout feature now appear in recent bug-fix versions. Once available, ease of use should dramatically improve.

Error Handling

Apart from early bugs now fixed, FoxBASE seems rock solid. The current problems may cause some annoyance, but I did not run into anything that caused loss of data. There is still room for improvement with error messages, however. If FoxBASE doesn't like a line of program code, it doesn't tell you why or show you exactly where in a long line the error occurred. Fox should imitate McMax in this respect.

Support

Fox offers knowledgeable, courteous, toll-call support during normal business hours. Typically your name and number will be taken, and a technician will call back within a few hours. While the delay may not be ideal, at least the long part of the call takes place on their nickel. The technicians know their product, and gave me correct advice on questions ranging from dumb beginner's to fairly tricky points of programming.

On two occasions Fox sent me bug-fixes by overnight express delivery. This sort of support could be invaluable to a developer trying to meet a deadline.

Recommendation

Right now, FoxBASE strikes me as the program of choice for anyone who must run IBM PC compatible dBASE programs on a Mac. It also should be considered by skilled programmers who want to develop database applications on the Mac where speed of operation is critical. Users looking for a truly friendly Mac-like environment should take another peek at FoxBASE after the report and screen module enhancements have been released.

HyperCard Scripting Error Correction

by Leo Harris

Address Stack

I will preface this HyperCard scripting error correction by stating the parameters under which it was found (quite by accident, actually).

While on an exploration of linking, modifying and some general tinkering with custom button configurations, it was discovered that all the creative linking in the world won't amount to didly if the scripting logic is off- even by the most insignificant character entry. This particular scripting error involves a little more than an "errant keystroke" but the principle is the same.

Factually, this problem could be unique to my system configuration. But that implies I threw out all conventional technique. This is definitely NOT the case. We are talking stock HyperCard software shipped with Mac SE's which, obviously, is System v6.0 and Finder v6.1 - The scourge of summer '88 releases. I don't know about anyone else's thoughts on v6.0, but I will emphatically go on record to say 'BOMBS AWAY!' The instablities are too numerous to mention here. Murphy's Law is alive and well in 6.0!

But please do not infer that 6.0.2 is the end-all bug fix of 6.0 anamolies. As most of us know, HyperCard was also upgraded to v1.2.1. I'll assume at this writing, v1.2.1 is the most current, supposedly 'fixing' previous problem execution. Use this latest version.

Most everyone knows by now 6.0.2 is out. Did I hear some sighs of relief out there? I wholeheartedly suggest you get with your dealer. Mine simply asked me to bring my original disks in to exchange for complete swap-out to the new disks. This includes, in case anyone tells you different, these disks:

1. System Tools
2. Utilities Disk 1
3. Utilities Disk 2
4. Printing Tools (the 6.0 v did not include the LQ)
5. HyperCard ™ and Stacks
6. HyperCard™ Ideas
7. HyperCard™ Help

Note: If your purchase originally included an ImageWriter/LQ, replace the Chooser driversincluded in the diskettes that came with the printer with the updated drivers in the Printing Tools disk. However, the fonts remain valid (Helvetica, Times, Courier, and Symbol). There were no changes to fonts.

This may appear to have gotten away from my 'fix' information purpose which is coming up. The system upgrade info is being included to save you from the hassles I encountered in getting the bottom line on the upgrade package. Different sources told you different versions of what the upgrade package was comprised of, not to mention the generally unknown tidbit concerning the printer driver switch-out. Nuf said...

Back to HyperCard

Begin at the HOME Card:

1. Using FILE menu, unlock all cards and stacks with 'PROTECT STACK' command.
2. Using GO menu, call up the "LAST CARD" and set User Level to 'Scripting'. Insert your name if you wish.

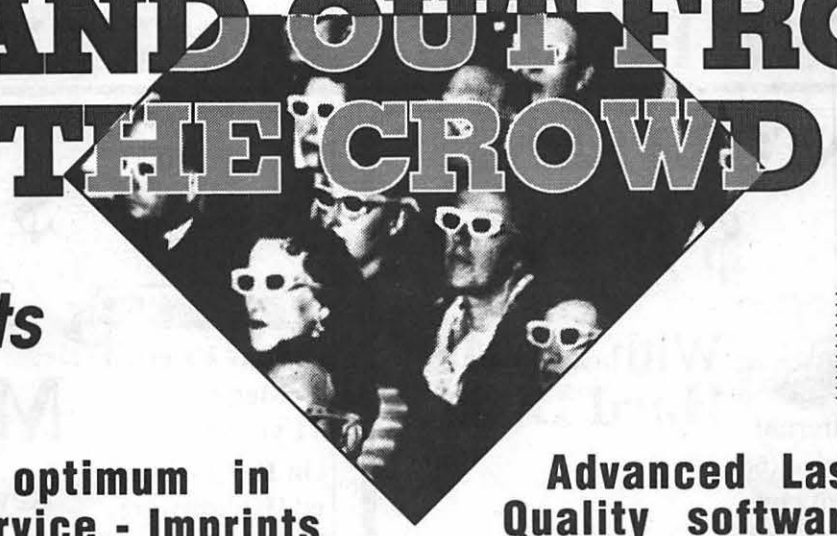
   (*Note:* It's not necessary to set 'Text Arrow, Power Keys, and Blind Scripting" functions).
3. Go back to HOME card and click on "ADDRESS" button.
4. Address stack will come up. At this point, to determine if this fix is necessary, click on "YEARLY" button- it's the one with '1988' on it's face.
5. Now your DATEBOOK should come up. If it doesn't and the dialog box "Can't understand "bracketWeek" appears, this fix is indicated. (This is the scripting error for the YEARLY button that is causing this).
6. Click OK in the dialog box. Then click on the ADDRESS button.
7. Address stack will come up again. Go to the TOOLS menu and choose the button tool.
8. Rectangles will surround all buttons on the card. Click once on YEARLY button. A moving dotted rectangle will now surround the YEARLY button.

What this does is prep that button for changes.

9. Double click on the YEARLY button.
10. A dialog box appears. Do NOT change any default info indicated. Click on SCRIPT button and the script for this YEARLY button will appear.

➥ 38

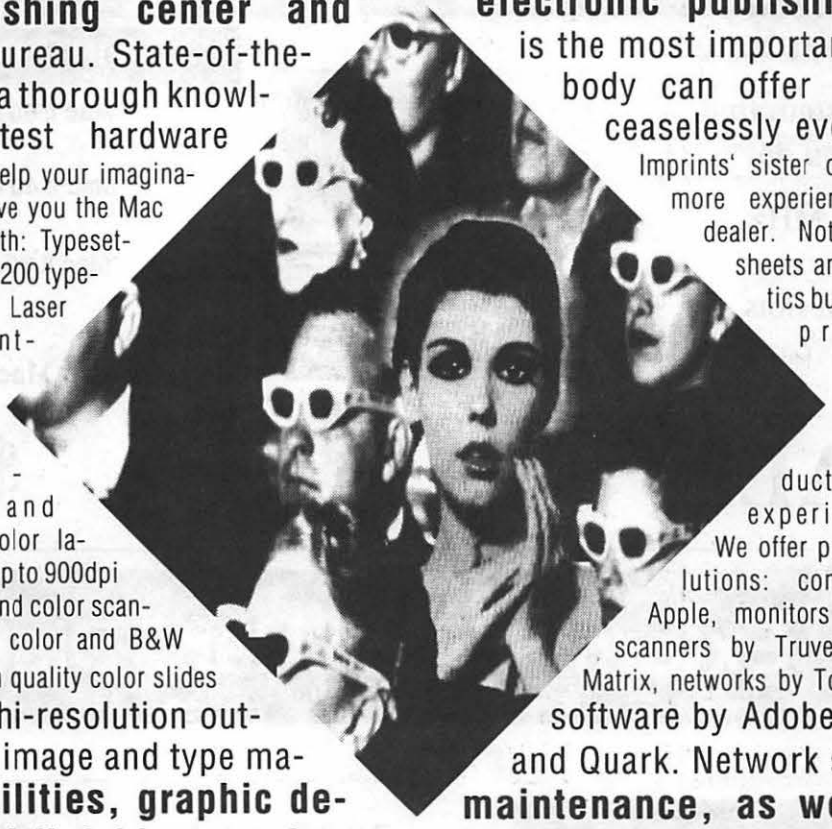
STAND OUT FROM THE CROWD



Imprints

ALG

Offering the optimum in quality and service - Imprints is a full service, Macintosh based, electronic publishing center and computer service bureau. State-of-the-art equipment and a thorough knowledge of the latest hardware and software will help your imagination soar. We give you the Mac advantage with: Typesetting - over 200 typefaces, Laser printing - 300 and 600dpi, Color laser printing, Up to 900dpi black and white and color scanning, Photo-quality color and B&W duplicating, Boardroom quality color slides and up to 2540dpi hi-resolution output. Add to this our image and type **manipulation capabilities, graphic design, binding and finishing services and when we say full-service, that's exactly what we mean.**



Advanced Laser Graphics. Quality software and hardware solutions for Macintosh based electronic publishing. Experience is the most important commodity anybody can offer in this new and ceaselessly evolving field. As Imprints' sister company we have more experience than any dealer. Not just data sheets and statistics but daily production experience. We offer proven solutions: computers by Apple, monitors by RasterOps, scanners by Truvel, slidemakers by Matrix, networks by Tops, printers by QMS, software by Adobe, Aldus, Microsoft and Quark. Network solutions, training, **maintenance, as well as complete publishing systems - everything you need to be your best, to stand out from the crowd.**

ELECTRONIC PUBLISHING

1850 K Street, N.W. • Farragut West Metro Station
International Square • Metro Level • Washington DC 20006
202-835-0100 • Open 8:30-6:00, Mon-Fri

LOWEST PRICES - GUARANTEED

MACINTOSH SALE!

$ 2,496*

With 20 Meg Hard Disk

Macintosh SE with Internal MiniScribe 20 Meg Drive (68 ms access 1 yr. warranty on Hard Disk), Hypercard, and Free Stackware.

$ 1894*

30 Meg MacPlus

Keyboard Included

Seagate External 30 Meg Drive (1 yr. warranty On Hard Disk), w/ HD Software, Hypercard, and Free Stackware.

Mac II System Sale

Put together a system that works the way you do.

- 68020 CPU at 16 MHz
- 1 Meg RAM
- 6 32 bit expansion slots
- Wide selection of configurations
- 1 800 K Floppy

$ CALL

Authorized Dealer

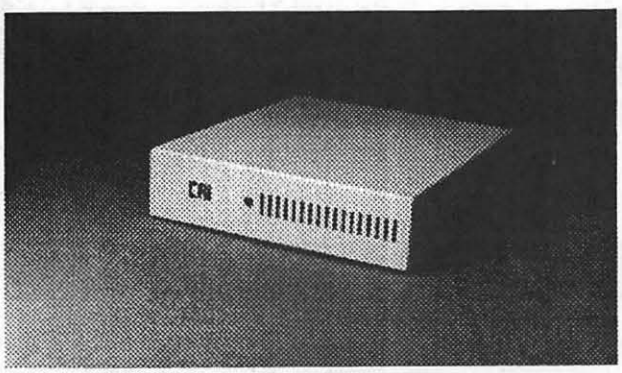
MAC II INTERNAL HARD DISKS

Mac II 60 Meg Drive (40ms)
$ 695
Mac II 40 Meg Drive (12ms)
$ 599
Mac II 80 Meg Drive (12ms)
$ 995

MacScan Digitizer on Sale

$ 995

CAI External SCSI Hard Disks



20 Meg/68ms $ 499	30 Meg/28ms $ 599
40 Meg/12ms $ 699	60 Meg/40ms $ 799
80 Meg/12ms $ 1099	

LOWEST PRICES - GUARANTEED

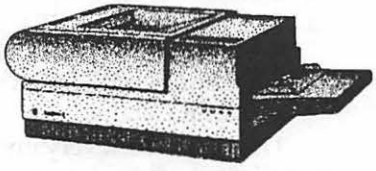
HIGH SPEED
40 Meg SE

$ 2,796*

*** Keyboard extra**

Mac SE with 1 800K DiskDrive
40 Meg Quantum Drive,
(12 ms 2 yr. Warranty) ,
with HD Software, Hypercard,
and Free Stackware.

Laserwriter II NT in Stock !



$ CALL

CAI/SONY 800K External Drive

$ 199.00

HIGH SPEED

80 Meg SE

$ 3,396*

*** Keyboard extra**

Mac SE with 1 800K DiskDrive
80 Meg Quantum Drive,
(12 ms 2yr. Warranty) ,
with HD Software, Hypercard,
and Free Stackware.

SONY®
3.5 " DS/DD
FLOPPY DISKS

$ 13.95 10 PAK

2400 Baud Ext.Modem

$159.95

COMPUTER AGE sm

Sales Locations

9433 GEORGIA AVE.
SILVER SPRING, MD
(301) 588-6565

10606 US 1
BELTSVILLE, MD
(301) 937-0300

Service Center

9431 GEORGIA AVE.
SILVER SPRING, MD
(301) 565-9130

Authorized Dealer

We have while-you-wait service on most Apple equipment!

11. The pre-fix SCRIPT will look like this:

```
on mouseUp
get the seconds
convert it to dateItems
put ((item 1 of it) - 1987) *2 into whichSix
if item 2 of it > 6 then add 1 to whichSix
visual effect zoom open
if whichSix < 1 then go card 1
of stack "DateBook"
elseif whichSix > 5 then go card 5
of "DateBook"
else
go to card whichSix of stack "DateBook"
send "bracketWeek" && the seconds to this
    card
end if
end mouseUp
```

12. This script is wrong! change as follows:

    Locate the last occurance of "else".

    Delete everything that follows.

    Indent under the "s" of "else" and begin this script entry:

```
go stack "DateBook"
send "bracketWeek" && the seconds to this
    card
end if
end mouseUp
```

13. That is the CORRECT script for the YEARLY button! You will no longer be taken to the WEEKLY stack with an ALERT dialog.

This reads like a very involved and complicated affair. I assure you, it is NOT! And it has the added benefit of introducing you to script modification and/or writing.

Just duplicate *Exacty* the script I've written. All will be perfectly correct!

P.S. If you your thinking possible corruption of HyperCard with this fix - forget it! Scripting changes only affect that part of the HyperCard Stack you have entered into... The application "HyperCard" is never modified except to upgrade to the latest version as indicated above.

Happy Scripting and don't worry!

Mac Games
BALANCE OF POWER - THE 1990 EDITION

By Jamie Kowalski

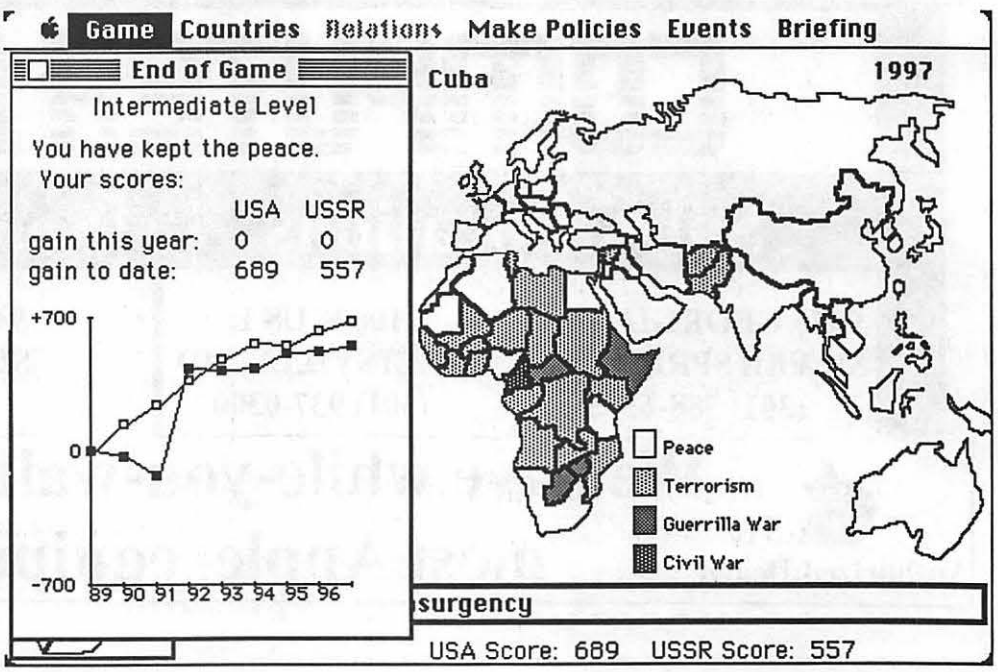
Blow up the world and live to tell your friends about it! That's what happens when you try your hand as "President Smith" (or as the General Secretary of the Soviet Union) in BALANCE OF POWER - THE 1990 EDITION (Mindscape, Mac 512/800k drive or better). It's too bad that real life doesn't have a "Save Game" feature. The pressure would be off the big guys, and we all would breathe a little easier, knowing we could restore Earth to its last saved position with a simple menu command. Well, it certainly changes the way you play the game, if you know it's just a game.

The scary thing about this game is that it's so easy to blow up the world, that I sincerely hope it isn't too realistic. I've certainly always considered myself a pacifist, but I'd be embarrassed to relate the number of times I've helped reduce the world to cinders. Well, as I said, it's no problem to take that extra risk if you know you can restore the game.

The game starts in the year 1989, and you are confronted with a map of the world. All of the attributes of the countries are as close to present-day conditions as the author could manage to simulate. This gives us an insight into some of his biases. For example, in the U.S. the insurgents are the Republican Party (was he predicting a win for Dukakis this election?). At any point in the game, you may view the statistics of any country by clicking on it on the map, and selecting what information you are interested in from the menu.

The game offers four different levels of play, and it is quite a different game at each level. At each level, the overall goal is the same: increase your worldwide prestige, while keeping the world intact. If you survive until 1997 (the game assumes you are re-elected) with more prestige than your opponent, you win the game. I have to admit that I'm not sure I like that as a goal, as I believe that the planet itself is a bit more important than anyone's prestige. However, it's the only thing I can think of that would make the game playable. And it is very playable.

With each increase in play difficulty, more rules and options are added to the game. At the easiest level, the game held my attention for several plays. The games averaged about 20 minutes apiece. At this level you can give military aid to the different countries or the countries' insurgents, and you can send your troops in to fight for either side of a country's internal wars. Overthrowing a country's government may allow a new government that sees things more your way to move in. You



also receive news of what your opponent's policies are. If you don't like your opponent's decisions, you can object to them, and perhaps start a political crisis over them. Your opponent may do the same for your decisions. If the crisis escalates, it can turn into nuclear war. To help you through these major decisions, a four person "crisis advisory" group appears on-screen, and with each member offering an individual opinion. Be smart, listen to them.

The higher difficulty levels add goodies like economic aid, government destabilization, signing treaties, diplomatic pressure, and determining trade policies. The highest level of play also has all of the smaller countries also playing BALANCE OF POWER with you, instead of passively sitting by and letting you have all of the fun. They trade with each other, send military and economic aid to each other, and go to war with each other. I found that at this level of play, there was much too much information for me to process. I sat at the end of the first year, watching policy after policy flip by on the screen, letting me know exactly what everyone was doing, and with whom. I wish there had been some feature to let you filter out things you really just didn't care about. This is supposed to be the most realistic level of play. Perhaps it should have been just a little more realistic, and let me hire staff to worry about the smaller problems, and just give me the big picture. Perhaps in the 1998 version...? However, the two intermediate levels are very playable, and I quite enjoyed them.

There are two very fun features of the game. The first gives you background on all of the countries. It lets you view such things as population, economy, education, weather, hospitals, literacy etc. for all of the countries. It supplies a color-key for that statistic, and shades the countries accordingly. The second feature shows you the history of a country for the course of the game. This is presented as a group of graphs which show how the country has dealt with each superpower during the game. This is nice for determining trends in a country, or trying to find out why you suddenly lost a bunch of popularity.

One annoying thing about the game is the way in which the games are saved. There is no menu item to save a game, as it automatically saves the game as each year changes. After you lose the game with a bang, the program returns you to the desktop, whether you like it or not. Here you can click on the icon for your saved game, and restart it from the previous year. I've always thought being returned to the desktop without being asked is rude.

The disk is not copy-protected. The program instead asks you to type in word x for line x on page x of the user's manual. It's a good scheme, because you can put it on your hard disk and make 39 back-ups if you want. Just be sure you don't leave the manual on the Ride-On bus.

All in all, I enjoyed this disk. The manual is very thorough, and full of useful information. If nothing else, my grasp of geography has improved a bit. Expect to be addicted to this game for awhile, but don't be surprised if you get stuck between levels 3 and 4, where I am: I'm getting too used to level 3; level 4 is too much work. Where's my Lode-Runner disk?

Toner Cartridges Remanufactured

- **Highest Quality Available**
  We Guarantee It !
- **Black, Long Lasting Toners With:**
  up to 25% more prints on our std. line,
  up to 100% more on our jumbo line.
- **Prompt Service - Free pickup and Delivery.**

Call about our competitive prices and our substantial quantity discounts.

We cut your Laser Printer Cartridge Costs in Half!

Find out why Major Law Firms, Accounting Firms, and Universities in the DC area now source all their cartridges from us!

THE LASER'S RE-SOURCE
Silver Spring, Maryland
681-4516
(We also buy used cartridges)

HARD DRIVES "IZ" Me
Pre-Christmas Sale!

Apple II +,e - gs
Siders-Siders-Siders-Siders-Siders

40 MEG D4A Sider	$699	45 Ms Access Time
40 MEG D4T Turbo Sider	850	24 Ms Access Time
90 MEG D9 Super Turbo	1399	18 Ms Access Time

(Above ALL ProDOS Operating System)

20 MEG D2 Sider	$525	65 Ms Access Time

(ProDOS-Pascal-CP/M-DOS 3.3 Operating Systems)

PLS, Inc.
(301) 431-0853
Ask for Lee Raesly

Apple Telecom
Best of the TCS

ProTerm Goodies

From Dale Smith on 10/01

Here's an item I captured off the PCPursuit XBBS NetExchange concerning the next version of ProTERM (v2.1) — it's not ready yet, but getting there — anyway here's what's coming ...

New features on ProTERM 2.1, info downloaded from GEnie this evening!

- Zmodem
- a 'streaming' transfer protocol.
- Split screen chat - for uninterrupted teleconferencing.
- Automatic sequential or rotary system dialing.
- Scrollback save (as one file), restore and empty.
- Global macros that can be accessed offline or on-line with any system.
- Partial load of large files into text editor.
- Epic and Datalink modem support.
- Screen Dumps to printer.
- Instant on-line toggling to issue commands direct to modem.

An Epic Fantasy

From Paul Horn on 10/13

Does anyone know anything about the EPIC 2400 baud external modem? I read somewhere that they are shipping Proterm with these modems. With the Epic at $155 from Programs Plus (I think), inclusion of the software would make this quite a bargain if the modem is any good.

From Dale Smith on 10/13

It is true that EPIC has made a deal with Greg Schaefer and CheckMate to bundle ProTERM and the EPIC 2400. This occurred about the time of AppleFest. Be sure to CHECK to be sure that price is for the BUNDLE!!

Hot Pursuit

From Lee Cabana on10/28

I want to subscribe to PC Pursuit. Can anyone tell me how? Thanks!

From Dale Smith on 10/28

You can call their 800-line at 1-800-TELENET and ask any questions you may have or sign up right then if you're ready. They'll mail you the information you need to use the system, including your User ID and Password. I think it took about a week for me to get mine.

I Once was Lost, But Now...

From Richard Zeman on 10/05

Can anyone tell me about Pathfinder by Randy Brandt?

From Dave Harvey on 10/05

Pathfinder is used to select the subdirectory that you want active so that you can load files from it. As I recall, in the downloads section there's a demo version of the program. After Pathfinder is installed, the menu item for initilizing a disk is replaced with Pathfinder. Select that and you're presented with the Pathfinder menu of about 5 items:

1. Add a subdirectory
2. Remove a subdirectory
3. Unlock a file
4. Lock a file
5. Quit

When you select 1, it catalogs the disk in your drive and shows the subdirectories there. You then select one of them. At this point you can press escape twice and that willget you back to the main AppleWorks menu and you can select add files to the desktop. Alternatively, you can select 1 again and if there are more subdirecties in the subdirectory you've currently selected, you can select one of those... and so on.

Menu item 2 lets you move back up the directory tree on your disk. A very useful program and it's compatible with the Timeout Series. In fact Beagle Bros admits that none of the features in any of the Timeout series replaces Pathfinder and recommended I stick with it and use it with the Timeout modules. I have a macro set up so that whenever I boot AW, it automatically brings me to the Pathfinder menu. and I can select the directory I want.

DB Merge

From Bob Siegel on 10/08

Can 2 AppleWorks data bases be joined together if the file categories are the same? (A + B = AB) I have 2 checking accounts and I want them joined. Is this possible?

From John Waak on 10/08

Yes, Bob. It can even be done if the 2 databases have different numbers of categories, as long as the first categories in the database with the larger number of categories are the same as all of the categories in the database having the smaller number of categories. The procedure is as follows:

1. Place both databases on the desktop.
2. Copy to the clipboard the entire database with the fewer categories (or as much of it as will fit — you may have to do steps 2 - 5 more than once depending on the number of records you want to merge and the size of the clipboard in your setup).
3. Add a dummy record at end of the database with the most categories.
4. In the multiple record display in this database, go to the end (OA-9).
5. Use (OA-M) to insert the data on the clipboard just in front of the dummy record.
6. Go to the end of the merged file (OA-9); delete the dummy record.
7. You now have a merged database. Don't forget to use (OA-N) to give the merged database a new name. Also remember to save it. If the merged database has more categories than either database which was merged into it, the excess categories will be blank.

Another Day on the LINKS

From Gary Hayman on 10/12

LINK??, he cried. What's LINK???? It sounds fantastic. Lee, would you be so kind as to let the world in on this new Timeout technique.

From Lee Raesly on 10/12

Gary, there are two Linking modules for TIMEOUT. One allows you to LINK spreadsheets any way you want, up to 48 files (I think) and 540 discrete cells. The other allows you to LINK Data Bases, on the same basis. VERY powerful tools. No more need to DIF data between files!

Sold on PROSEL!

From John Khoury on 10/05

I just bought the Apple 20SC for my //e, without mouse. I need to find a program (Catalyst?) that will boot with the hard drive and give me a choice of what to run. Any suggestions, ideas? It would help if it didn't rely solely on the mouse to work. I intend to get a mouse, but not right away. Any ideas?

From Tom Vier on 10/06

Go for Glen Bredon's PROSEL PROgram SELector! Stay away from Catalyst.

From Dale Smith on 10/12

You can get ProSel direct from Glen Bredon only. His address is:

Glen E. Bredon
521 State Road
Princeton, NJ 08540
(609) 924-5976

Buy Low - Sell High

From Ricky Judge on 10/21

Does anyone know of any finance programs for the IIGS? Looking for something to track stock performance and stock portfolios.

From Paul Horn on 10/21

Managing Your Money from MECA has a stock portfolio module and I believe a module for tracking stock performance. It also does a whole lot of other stuff and thus is somewhat expensive.

From Rich Jaroslovsky on 10/21

Rick, I just did a review of Managing Your Money for A+ magazine. (The review is coming out next issue, I think.) My bottom line was that this program probably does about everything you would want a finance program to do; its only problem is that it is so powerful that it takes a certain amount of discipline to sit down every month and enter all the data it needs to get full use out of it. With that proviso, take a look at it. There is no version expressly for the GS, but the Apple II version works very well on a GS.

Hyper Hype

From Dan Hughes on 10/27

I understand Roger Wagner Software is coming out with a Hypercard-like program for the IIGS. I saw an ad for it from one of these discount software houses. It includes a speaker and microphone, for $129. Anybody got any more info?

From Jon Thomason on 10/27

There are full reports of it in various places, including Open Apple. It doesn't have a scripting language. It should be pretty neat as a click, look, and listen, though.

Another Satisfied Customer!

From David Kreisberg on 10/22

I recently installed Computer Eyes GS on a machine at school and it performs better than expected. It can digitize an image (16 colors) in six seconds! The real treat is with mouse driven options to adjust intensity and red, green, and blue in the image. It is extremely fast and responsive! The documentation is clear (I was up and digitizing in less than 30 min.). Files can be saved in various formats (Paintworks, DPII, Print Shop GS, etc.) and some nifty special effects can be achieved. The black and white digitizing with 16 shades of grey was impressive, too.

Pi Members Not Completely Zipped Yet

From Wallace Ridley on 10/04

A year ago I ordered a ZIP CHIP. Last Friday it was on the door step waiting for me when I got home. After a year, eight telephone calls, three letters, I finally have my ZIP CHIP. I couldn't install it right away due to family obligations, but Sunday I got it in and guess what — that's right — it won't work! During a two week period, the ZIP CHIPS that were shipped are not compatable with AE's ZRAM ULTRA II. So I have to send it back and wait for another. They say it won't take another year, but I'm not so sure.

II-c in Chains

From Howard Berman on 10/09

I have a II-c with an external 5 1/4 drive and i just bought 2 3.5 Unidisks. I know that only 2 externals can be daisychained, but isn't there any way to get all 3 externals daisied?

From Tom Vier on 10/10

You *can* daisy-chain the two Uni3.5s and the external 5-1/4, as long as the 5-1/4 is at the end of the chain. In fact you can put FOUR Uni3.5s and newer versions of ProDOS will map the other two to S2,D1&D2. However, power supply limitations make this inadvisable.

IIGS Stuff
GS/OS and Which Word Processor?

by Ted Meyer

Generally, these "IIGS Stuff" articles are based on the questions and comments I receive at our monthly IIGS SIG meetings and over the phone. Whatever I perceive to be the primary topics or concerns voiced become the fodder for this article. Lately, I've been fielding a lot of information about GS/OS. I've also been asked for the ten millionth time: "Which word processor do you recommend for the IIGS?" So this month I'm going to ramble a little about GS/OS and then discuss the three best selling word processors available for the IIGS: AppleWorks, MultiScribe GS, and WordPerfect GS.

GS/OS

GS/OS was released by Apple to the general public at AppleFest in San Francisco last September. It comes on two disks: SYSTEM.DISK and SYSTEM.TOOLS. These two disks together are called the Apple IIGS System Software V.4.0. It is designed to completely replace ProDOS 16 and is considered, by Apple, to be *the* primary operating system for the IIGS. If developers have followed Apple's programming guidelines while producing their software, then anything they have produced which uses ProDOS 16 should work with GS/OS. So far, most of what I have tried has worked under GS /OS including: PaintWorks Plus, DeluxePaint II, WordPerfect GS, AppleWorks, Medley, GraphicWriter 2.0, Top Draw, Draw Plus, Orca/Pascal V1.2, TML Pascal V.1, and TML BASIC V.1. I haven't tried all aspects of all of these programs, but I did save and load files from all of them. Also, I ran them from a hard disk, so many problems related to copy protection may not apply.

GS/OS is a real ground breaker for the Apple II world and, in some respects, for the entire microcomputer community. Perhaps the neatest thing about GS/OS is its versatility. This operating system is designed to be compatible with everything. GS/OS is mostly a driver for various interfaces to disk formats and hardware. It is the interface between an application program and mass storage and character devices. The interfaces to standard ProDOS devices, Apple 5.25 and 3.5 inch disk drives, MIDI cards, SCSI hard disks, ImageWriter and Epson printers, and modems are included. So is an interface for a CD-ROM format.

The interfaces to various "types" of devices are called "File System Translators" (FSTs) and can be created for any kind of format or device. System Software 4.0 includes FSTs for talking to ProDOS devices, character devices (printers, keyboards, modems), and High Sierra devices (CD-ROM). We will find, before too long, FSTs for DOS 3.3, Pascal, CP/M, MS-DOS, and others. In addition to FSTs, GS/OS requires a driver for the specific hardware to be attached. To read a ProDOS formatted 5.25 inch disk you must have the ProDOS FST in the SYSTEM/FST folder and the 5.25 inch disk drive driver in the SYSTEM/DRIVER folder. (GS/OS doesn't come with the ability to read 5.25 inch disks. It must be reconfigured to do so.) This may sound complicated but is simplified by a very useful program designed to make it easy to install new system software.

The Installer is a piece of software that automatically loads files into the proper locations to set your system up for new hardware or software. Developers can create "scripts" to tell it just how to load their software. The Installer and the Advanced Disk Utility are two programs that are included on the System Tools Disk. The Advanced Disk Utility allows formatting of disks in several formats (so does the new Finder V1.2) and also partitions hard disks. New adjustable disk caching software is included as a new desk accessory and an update to version 1.2 of the Finder is included.

GS/OS is available from various sources. Dealers should be willing to copy System Software 4.0 onto your disks if you bring them in. For $39 a package with two manuals, "The Apple IIGS System Disk User Guide" and "The Apple IIGS System Tools (Advanced Disk Utility & Installer) Manual," is available from local dealers. You can also get GS/OS from the Apple Programmer's and Developer's Association (APDA) for $13.50. This package will include the two disks and a 30 page release note describing bug fixes and new tools released since System disk V3.2. APDA also has available the "GS/OS Reference Volume 1 beta draft" for the hard core computer jock/jockette.

This package includes GS/OS system exerciser software and 352 loose leaf pages of GS/OS technical information for $24.95. APDA's number is (800)426-3667. The Pi might have it available by the time you read this. Ask at the office for more information.

Word Processors

I really haven't followed the sales figures for IIGS word processors. If the questions I get are any guide though, most interest is in either WordPerfect, MultiScribe, or AppleWorks. There are a lot of other word processors (MouseWrite, Writer's Choice Elite, FrEdWriter, GraphicWriter 2.0) available for the IIGS, but these three spark the most interest. I want to describe these three programs just a little, defining the specialty of each, in order to provide a new user with some information to make a choice.

I have used all three of these word processors. Of the three I have no clear favorite. Each does certain things much better than the other two. And each is deficient in some area where the others are better. Your choice of word processors is like your choice of any other software, it is dependent on your requirements, capabilities, and personality.

If you can't stand the mouse interface then don't buy MultiScribe GS. If you want a graphics interface with an excellent WYSIWYG (What you see is what you get) capability and an easy way to print using high quality fonts and imbedded graphics from other sources, then get use to the mouse interface. MultiScribe GS is now a product of Claris who also now owns and distributes AppleWorks GS. I've been told that the AppleWorks GS word processor module is very similar to MultiScribe.

Neither AppleWorks or WordPerfect has anywhere close to the graphics capability of MultiScribe. From my experience learning the systems and my discussions with brand new users, MultiScribe is much easier to learn to use than the other two. It uses Apple's Desktop Interface and adheres very closely to the Human Interface Standards. MultiScribe probably has the best file saving and retrieval system, making opening, saving, and searching for documents a cinch, without ever typing a path name. Of the three it is also the cheapest at $99.95 ($75 mail order). But I wouldn't want to have to write, edit, or print a long document with it as it isn't very fast. Scrolling or moving within a document takes time, and printing is extremely time consuming. That is the price paid for graphics capability. MultiScribe has a very good, albeit somewhat slow, spelling checker and thesaurus.

WordPerfect is first and foremost a word processor. It doesn't try to have an extensive graphics interface, but instead concentrates on the job of wordsmithing. It has extensive line and page formatting capabilities, footnoting, endnoting, various tabbing criteria, left and right page headers and footers, spelling checking, thesaurus, binding edge margins, and more. The list could continue for quite a while. It is designed to work with a variety of printers and printer interfaces. It is, by far, the most difficult of the three to learn to use. Although it uses the mouse, it is also designed to be used by those whose hands never want to leave the keyboard. Without a graphics interface, WordPerfect limits you to your printer's capabilities as far as fonts are concerned and there is no simple way to insert graphics.

WordPerfect has versions of their software for the Apple IIe/c, Mac, and PC compatibles and is trying to maintain a standard interface across the machines. So if you have another machine at your office this might be a good choice. This standardization makes for a kludgy file management system though, making too much of a chore out of opening or closing a file. WordPerfect is the only one of the three that includes macro capabilities as a standard. Macros allow a knowledgeable user to automate often-used sequences of keystrokes. WordPerfect isn't cheap at $179.00 ($99.00 mail order) but it is probably the most "professional" of the three.

So much has been written about AppleWorks that I feel like I hardly need to say much. By itself, the AppleWorks word processor is fairly simple and limited. As far as our comparison though, the most important point about AppleWorks is that it is not just a word processor. It also has a database package and a spreadsheet seamlessly integrated with the word processor to make an extremely powerful and useful package. I've heard lots of beginners say that they have no use for a spreadsheet or database. You would be surprised, though, how handy a spreadsheet can be to create a set of columns in your document, or how you'll suddenly find a need for AppleWorks"s database to sort a wedding guest list.

AppleWorks is probably the best selling of word processors for the Apple II series. I don't know whether that can be said about the IIGS specifically. I suspect new IIGS owners (those that did not previously own another II) are not necessarily buying AppleWorks for their machines. At least not without some comparisons first. AppleWorks doesn't use a mouse, doesn't use the "desktop" interface, and probably falls somewhere between the other two as far as ease of use. And with AppleWorks GS now available, buying AppleWorks (no GS) is even further from a foregone conclusion.

Regardless, AppleWorks is a standard. Because of the popularity of this software, it is one of the most expandable programs available. I suspect that more software add-ons have been written for it then ANY other software on ANY microcomputer. PinPoint and Beagle Brothers are making livelihoods by producing graphics interfaces, font capabilities, spelling checkers, macro languages, telecommunications packages, and who knows what else that work well with AppleWorks. These do add to the cost of the software though. At $249 AppleWorks is the steepest in price of the three word processors. To add spelling checkers and graphics might cost more than $100. The other word processors include these as part of the original cost. As far as AppleWorks is concerned another question is the advantages of AppleWorks GS. Will it be as fast? Will it be buggy?

What do I use? I use a combination of AppleWorks and MultiScribe GS. For most basic tasks (writing this article, for example) AppleWorks is all I need. But rather than buying extensive add-ons to expand AppleWorks, I bought MultiScribe GS. I will spell check this article in MultiScribe and if I needed a fancy copy to send to someone it would be printed in MultiScribe. If I go back to school, though, I think WordPerfect would become my first choice.

In the September Journal I described a disk which allowed you to run the Finder and AppleWorks without swapping disks. It ran under ProDOS 16 and 8. I'll be updating that article for GS/OS next month as well as looking at Finder 1.2 and, hopefully, discussing some other subject from out of left field. Until then...

Unlike store-front dealers who can help you select a stand-alone desktop computer and an appropriate choice of software, MacInOffice focuses on the many needs of the multi-computer user. At MacInOffice, you'll find demonstration rooms filled with the latest hardware and software advances. Our sales people are systems consultants who understand networking-even for multiple vendor hardware. We provide total support - hardware, software and training-tailored for your business. Call today and discover a new way to buy Macintosh.®

MacInOffice also seeks strategic alliances with Macintosh consultants, value added resellers and instructors.

We've Taken Macintosh Out Of The Store And Put It Where It Belongs... In The Office.

703/532-7400

MacInOffice

George Mason Square
101 West Broad Street
Suite 400
Falls Church, Virginia 22046

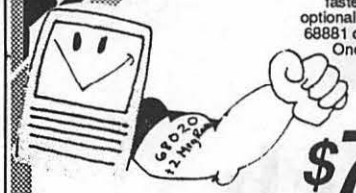
Authorized Dealer

Macintosh and the Apple logo are registered trademarks of Apple Computer, Inc.

Mac Corner
The Macintosh Only Store

Happy HOLYDAYS!
Come to MacCorner for all your Christmas and Holiday Mac shopping!

ORION!
MacPeaks' Orion converts your SE into a faster Mac II with an optional 2-8 Mb of RAM 68881 option available! One year warranty!



$789

Coproccessor, 17" monitor, and RAM optional and in stock!

Free PixelPaint with all GCC Lasers!

P.L.P.
Personal Laser Printer

(Macuser Magazine Awards)
Top rated Printer

The Advanced Quickdraw laser that runs circles arround apple's Lasewriter II SC and Imagewriter LQ!

$1599

BLP also in stock!

INFINITY 40 TURBO

PeripheralLand has the hottest removable media drive available! 25ms access and 44 Megs per cartridge make this the ideal storage and backup system! Free 45 Meg Cart/ PLI TurboCache included!

$1499.95

Introductory Special; offer valid only until 11/31/89

ONE PAGE NEWS!
CornerStone SPD SE & II!

This Christmas, the Single Page Display is the ideal gift for the desktop publisher with an SE or Mac II. And what a price!

SE version **$899**

New Limited Stock

GIGA CELL Hard Disks
NEW NEW

From Gigacell, the experts in high capacity storage come the following superb holiday specials:

Giga-20 $549

Fast, ultra reliable drives. Include Backup and Disk Optimizer SW.

Giga-30 $679

All G-drives include one year warr. Cable additional.

MacBottom Drives

Pick your MacBottoms at MacCorner imediaetly, with our best prices ever and a new 2yr Warranty!

In Stock

Free Hard-Disk-Utils W/ McBottom Purchase!

The WRITE printer MOVE

The Write Move has the flexibility of a postscript laser, LQ resolution, and for under $700, you have to see it to believe it! A must!

In Stock

MFSG RETAIL: $699

Finale
By Coda Music Software

Finale is the revolutionary Artificial Intelligence based software that has turned the music world on its collective ear. Allowing the entry and editing of musical notation from both Mac and MIDI instrument.

Now until Dec. 24th get 30% off any MIDI interface w/purchase of Finale!

Finale Demos thursdays at 6:30pm. Call for reservations

HOT BUDGE

2400 bd Avatex Modem

- Full Hayes™ compatiblity
- Built-in speaker
- One year warranty

$199.95

MFSG RETAIL: $399

HOT SPECIAL

MacMoney

The #1 home accounting program on the Mac!

$89.95

MFSG. RETAIL: $119.95

ADD N STOCK

DATADESK 101
Keyboard for the power user!

$139.95

MFSG RETAIL: $999.95

IN STOCK

MEMORY
1 Meg Simms

- Low Profile
- One Year Warranty
- Installed Immediaetly

NOW AT MAC CORNER!

$CALL

FREE BILLER

Illustrator

- Illustrator the # 1 postscript drawing and graphic tool

With This Ad **$349**

FOR MAC!

PIXELPAINT
Now at MacCorner the most advanced color illustration program ever written. A must for all Mac II owners!

$199

MFSG RETAIL: $499.99

IN STOCK

PIRO

The ultimate holiday gift. Save a friend's screen from burning up (over time) and have fun to boot.

$22.95

With this ad.

In Stock

XP60 Dataframe

- ¥ SuperFast 1 to 1 interleave
- ¥ 25ms Access
- ¥ 85Meg Capacity
- ¥ Backup, spooler & security Sw incld.
- ¥ 1yr Full Warranty

$1179

SALE!

MAC RECORDER
Turn your Mac into a complete Sound/graphics studio. Mac Recorder allows you to digitize and manipulate sounds at will!

MFSG. RETAIL: $995

$149

NEW ADB VERSION

A+ MOUSE ADB
No moving parts means maximum reliability. 5 stars!

- Super resolution
- Faster, more accurate.

After $15 Manuf. Rebate

$84.95

NEW MATHEW

Mathematica
Come in and try this incredible equation proccesing and graphing software now at MacCorner

A+B=Z

$479

For SE. All versions in stock!

NEW

Generic CAD

- Complete CAD
- Lines to objects
- Spatial Definitions
- Excellent for beginners

$89.95

$30 FREE DISK $30 Cleaning Kit
With Any Purchase
over $50 with this coupon

***FREE GAME**
With Any Hard Drive Purchase
5 different ones to choose from

FREE INSTALLATION
Of any memory or board upgrade
*with this coupon

25% OFF
any educational software package in stock
*with this coupon

Holiday Special
COFER 30% off
Limit one per customer

Holiday Special
TETRIS $37.90 *with this coupon
MTP Advisor $49.90 *with this coupon

CALL FOR SPECIAL HOLIDAY HOURS!!
Mon - Sat: 10am - 6pm; Thu: 10am -8pm

948-1538

8653 Zetta Avenue Gaithersburg, MD 20877

MacCorner
Wishing You a Happy Holiday Season

* All items are in limited quantities. Coupons are not additive, nor combinable with other specials. One coupon per customer. Macintosh, imagewriter are ®s of Apple C.C.

Mac Corner
The Macintosh Only Store

Merry CHRISTMAS!
Come to MacCorner for all your Christmas and Holiday Mac shopping!

InterFAX by Abaton
NEW

The power to communicate worldwide by FAX or regular modem transmission. Supports multifinder and background operations!

In Stock!

Availability limited. Call to reserve yours immediately!

INSIGHT
Accounting Software

The end of year is almost here, so MacCorner is putting on sale the most popular Accounting software for the Mac! LIMITED TO STOCK.

$399.95

Retail Price: $695

OmniPage-MacScan

A combination deal shure to set new standards! MacScan's feed through scanner in conjunction with OmniPage's intelligent OCR. In Stock

$1499.95

Holiday Special; offer valid only until 12/24/88!

RADIUS AGAIN
FPD Plus, SE, II in stock!

The Radius FPD has again won the users' awards this year. And MacCorner makes it affordable for you. Come take a look!

$1389 SE

SUPER GAME SPECIALS
New Now in Stock

MacCorner has the biggest selection of Mac games in the area. Here are some of the new ones available now and in stock. Ideal holiday gifts for everybody (including yourself!)

Ancient Art War at Sea
Balance Of Power 1990
In COLOR:
SubBattle Simulator
MacGolf
Zork Zero
QuarterStaff
Kings Quest 1,2,3
Chuck Yeager's AFT
LeisureSuit Larry
...and over 50 new ones!

NEW **20 to 50%Off**

Starting at $9.95

CANVAS 2.0

Deneba just introduced what easily will become the standard bearer for drawing programs for the Mac. Come see it! MacDraw II, move over!

InStock

MFSG RETAIL: $295

QUARK XPRESS

Xpress is the most powerful Desktop publishing program on the Mac. While stock lasts.

$539

MFSG RETAIL: $795

FullWrite
By Ashton Tate

The ultimate word proccessor at the best price anywhere. A smart holiday purchase!

$259.95

WE WILL MATCH OR BEAT ANY LEGITIMATE STOREFRONT'S ADVERTISED PRICE ON PRODUCTS IN STOCK*

Our Policy

PAPA NOEL's* BAG:
Mon Special

Kidstime	$39.95
Suitcase II	49.95
Tempo II	109.90
Mach IV joystick	79.90
MS quick BAsic	69.90
Deluxe Music	74.99

*Also known as Santa!

DOUBLE HELIX II
Add'l In Stock

The power relational database anyone can learn and use. Only while stock lasts!

$399.95

MFSG RETAIL: $999.95

MacSnap
In Stock

1-2 Meg for Mac 512

- Upgrade up to 2Mb
- SCSI option avail.
- MacCorner 1Yr warr avail.

NOW AT MAC CORNER! **$CALL**

READ IT OCR
FREE 68LEC

- Advanced OCR
- Learns new Types
- Works with all scanners
- New update free w/pchs.

With This Ad **$229.**

ABATON Scan 300
For Mac!

- 300 Dpi flatbed scanner
- Abaton Graphic editor
- Includes DA control
- SCSI av.

MFSG RETAIL: $1995 **$1599**

Stock Limited

Holiday Goodies:
Soft Specials

Quiet Cool SE	$39.95
MindWrite	99.95
InHouse Acct.	109.90
OverVue	174.95
SmartScrap	49.90
Stepping Out	59.95
Cricket Draw	179.90

With this ad.

FX 60 by GCC
In Stock

- 1 to 1 interleave
- 25ms Access
- 65 Meg Capacity
- Backup, spooler & security Sw incld.
- 1yr Full Warranty

$999.95

MFSG RETAIL: $1799

MIDI by OPCODE
SALE!

Midi interfaces that demand no apology. Starting at:

Now in Stock! **$139**

PROPOINT by Abaton
New ADB Version

The ultimate ADB trackball. Move over Mouse!

- Removable Ball
- Optical
- Super Fast

Retail: $159 **$119**

FULL IMPACT
New Mathsign

Sum(A1:Z1)

Excel's first real competitor is excellent with superior graphics, more functions, and better presentation features!

$479

For SE. All versions in stock!

LightSpeed "C" 3.0
NEW

New V3.0. The most C you can buy for the money!

$ In Stock

$100 FREE FULL $100 PAINT SW
With Printer Purchase
Only with this coupon

Free Red Ryder 10
With Any Everex 2400 bd Modem purchase
Only w this Coupon

800k D-Drive $198
Sony floppy Drive external for all Macs: $198
*with this coupon

30% OFF
any laser spooler SW package in stock
*with this coupon

Holiday Special
TYPE $24.95
Limit one per customer

Holiday Special
MC 360 $17.95 *with this coupon
Comment $54.90 *with this coupon

NEW MacCORNER HOURS:
Mon - Thurs: 10am - 8pm; Fri - Sat: 10am -6pm

948-1538

8653 Zetta Avenue Gaithersburg, MD 20877

MacCorner
Where Macintosh Dreams Come True

* All items are in limited quantities. Coupons are not additive, nor combinable with other specials. One coupon per customer. Macintosh, imagewriter are's d Apple C.C.

Are you serious about service?

If you rely on a "service bureau" for your desktop publishing output, you may miss the kind of personal attention and extra care you used to get from your typesetter. Now you can have the best of both worlds—typographic excellence and overnight turnaround on your traditional and your Linotronic jobs.

Fifteen Years of Success

Carver Photocomposition, Inc. has been successful in the typesetting business **since 1973**. Our success is based on a combination of typographic expertise, state-of-the-art technology, and extraordinary service. Besides being expert typesetters, we are experienced providers of telecommunications, disk conversion and desktop publishing support.

PostScript on the Linotronic 300

Trading under the name **Carver Publishing Services**, we now offer PostScript runoff on our Linotronic 300 Laser Imagesetter. This is just the latest addition to our full line of services for the desktop typesetting user. We've been setting type from telecommunicated data and word processing disks since 1980.

Professional Typesetters

Carver is a professional typesetting service—not a service bureau. We support our desktop publishing clients by doing as much or as little of the task of document preparation as we are asked to do—from full-page makeup using **Ventura Publisher**, **PageMaker** or **Quark Xpress** to simple high-resolution runoff on our Linotron 202s or on our new Linotronic 300.

We Use Your System

Carver offers superior service to desktop publishing system users because we use Ventura Publisher, PageMaker and Quark for much of our own day-to-day production. The chances are that if you have a problem, we've already solved it for ourselves.

Radio-Dispatched Delivery Service

We have **radio-dispatched pickup and delivery**. We have fax machines and a computer bulletin board to speed service and save courier charges. We have years of experience translating word processing documents into typesetting. We are expert users of desktop systems. In short, we do it all.

Carver Publishing Services
(703) 528-0772

1025 North Fillmore Street, Arlington, Virginia 22201
#1 DuPont Circle, N.W., Suite 30, Floor 1B, Washington, D.C. 20036

Open 24 hours a day, Monday through Friday in Arlington.

Macintosh Bits and Bytes

by Lynn R. Trusal

The Tektronix 4693D Color Thermal Printer

I recently had the opportunity to extensively use of the Tektronix 4693D color thermal transfer printer using Power Point 2.0. I needed to prepare some color vu-graphs for several briefings and didn't know what to expect.

A recent article in *MacUser* compared the non-PostScript Tektronix to the QMS color thermal printer which does support PostScript. It did a good job of pointing out the pros and cons of both printers. Basically, each color image consists of four separate passes using a ribbon (wax based) consisting of consecutive portions of magenta, yellow cyan, and black (MYCB). All resulting colors are composed of one or more of these four basic colors overlaid during the printing process. Imaging of a sample vu-graph takes about 3 minutes. One co-worker printed 61 color vu-graphs taking about 3 hrs.

"...realize that what you see isn't always what you get..."

The first problem is realizing that WYSIAWYG (what you see isn't always what you get) as far as color is concerned. Macintosh output is RGB (red, green, blue) while color thermal printers and copiers use MYCB for their output. The most obvious problem is that there are color shifts for some colors and the screen image will not always match exactly the printed results. It is therefore imperative that the user have the ability to print out samples at the same time they are composing the layout on the screen.

Some of my co-workers designed very nice on-screen layouts only to be disappointed by the printed results. Power Point 2.0 offers some very nice special effects for blending colors and fades from top to bottom and left to right, etc. but the printed result often loses some of this gradation. Colors often come out darker than they appear on the screen and subtle color differences may be lost.

Although the MacUser article stated that you could use standard Xerox transparencies, I only used the Tektronix supplied vu-graphs which are relatively thin and come with a white backing to permit better visualizing of the results. The backing can be easily peeled off before use.

The use of transparencies raised two additional problems that bear mentioning. First, it is desirable to keep your finger prints off the surface of a transparency. Any handling leaves very noticeable fingerprints that show up to some extent when placed on an overhead projector. I recommend placing the vu-graphs inside plastic sleeves such as those made by JoshuaMeier (HG-1185) after removing the white backing. You might even want to consider using white gloves or at least wash you hands to remove excess grease.

These sleeves also serve two other purposes. Color thermal outputs are the result of up to four layers of a wax based product and therefore the surface has a certain amount of thickness. This surface is subject to scratching which can be prevented by using the plastic sleeves. The sleeves also come punched out for a three-ring binder and occupy much less room and weight than vu-graphs mounted in the traditional oval cardboard frames. It's a simple matter to use a traditional cardboard frame laid on the surface of the overhead projector to serve as a frame for all the transparencies.

The last problem is one rooted in the basic technology itself and is a potential Achilles heel. Since color thermal printers use a hot wax process to layer the colors, heat during projection may prove to be their downfall. I have heard of some government users who literally watched their color vu-graphs melt in front of their eyes. At least it tends to speed up the briefing and cut down on long winded speakers. The transparency material itself does not melt but the color layers may crack and withdraw from the surface. This is apparently only a problem when using older and hotter overhead projectors that have bulbs greater than 300 watts or no built-in fans to dissipate the heat. This will probably be true with overhead projectors used in large conference rooms where large wattage bulbs are used to maintain brightness over longer distances. I found no such problem with a typical portable overhead projector that contained a fan. Exposure of one of the color vu-graphs for 30 minutes resulted in no deleterious effect. On another older overhead projector they started to self-destruct in several minutes.

If you are purchasing a color thermal printer to produce mainly vu-graphs and you will have little control of where they are shown, the problem may be a major one. This is particularly true for service bureaus or graphics shops of government agencies where presentations are prepared for many different users who then present their briefings in various unknown locations.

Text on the Tektronix does not compare as favorably to the QMS which supports PostScript. It is necessary to install up to 96 point size for Times, Helvetica and Courier so that it can be scaled down four times to 24 point to improve quality. Although the text results looked OK, I experienced clipping of some of the end of text strings. This was intermittent and was related to Power Point since it also appeared on the screen. The end result was sometimes less than desirable but not so bad as to ruin the end result. I am still trying to delineate the cause of this problem.

Although Tektronix does not support PostScript, this may not be a problem. A particular agency logo that was created in Cricket Draw using PostScript effects was scanned, placed in Pixel Paint for addition of color and then pasted into PowerPoint via the Scrapbook. The results were excellent and I was able to resize the logo and use it in the upper left hand corner of the transparency. This use of scanning circumvented the need for PostScript in this instance but may not be suitable for all needs. Tektronix representatives told me that support for PostScript is coming in the future.

Another special effect that I tried consisted of my scanning a baby picture (Apple scanner), saving it as a gray scale image, and then pasting it into Power Point from the scrapbook. The end result was very good considering I really didn't know what I was doing. Although the background of the transparency was blue in color, the gray scale photo retained its gray scale char-

acteristics and appeared to be an inset in the overall vu-graph.

Since I have spent most of this article discussing various problems with the technology and its execution, I would like to clarify my overall impression of the Tektronix 4693D printer. I was very pleasantly surprised by the results and felt that they were much better than I initially expected. The colors were very bright for both the hard copies and the transparencies. As long was you are willing to accept some of the limitations of the technology you should be satisfied with the majority of results. MacUser found the the Tektronix worked very well with all the software packages tested except Abobe Illustrator 88 and some text applications in Cricket Draw. This was due to the PostScript-intensive nature of these two software packages.

The cost of the Tektronix 4693D with 8 MB of RAM is about $11,000 (GSA price). Until color laser printers are abundant and reasonable in price, color thermal transfer printers will continue to be one of the major output devices of choice.

Clipboard and Scrapbook

Perhaps no other concept is more important to successful Macintosh use than the Clipboard and Scrapbook, yet so many users don't really understand their use. Because of the ignorance I have encountered among regular Mac users, I want to re-explain their use.

Clipboard

1. The Clipboard is an intermediate step used to transfer text or graphics from one Macintosh program to another.
2. The Clipboard is one way to transfer objects or text between different programs that might not otherwise permit doing so.
3. When text or graphics is Copied or Cut, it is automatically placed on the Clipboard.
4. The Clipboard can only hold one item at a time.
5. The Clipboard is a vehicle used to place text or graphics into the Scrapbook.
6. Some items may be too large in size to be copied to the Clipboard.

Scrapbook

1. The Scrapbook is a storage place for often used text or graphics.
2. The Scrapbook can hold many separate items, only limited by storage space.
3. Items are "pasted to/or copied from" the Scrapbook.
4. Multiple Scrapbooks may be created with a program such as "SmartScrap."

Apple Federal Expands

Apple Computer has expanded its federal efforts by opening additional sales offices in Atlanta, Boston, Chicago, Dallas, Los Angeles, San Francisco and Columbia, MD. The main federal systems office is still located in Reston, VA. The decision to open these offices was based on both civilian and military demographics (Source - Federal Computer Week, October 3, 1988).

LCD Projection Panels

Until recently it was necessary to use video projectors to display computer images on screens for viewing by large groups. At the low end of the market, projectors such as the LimeLight cost several thousand dollars and were often less than satisfactory due to focusing problems. The Hughes Light Valve was considered the premier video projector but its cost in the tens of thousands of dollars made it beyond the reach of groups such as WAP.

More recently, liquid crystal displays (LCD's) have replaced the need for video projectors for small and intermediate size groups who could do without color capabilities.

The first LCD displays consisted of translucent liquid crystal displays that connected to a video port on the computer and sat on top of an overhead or vu-graph projector which supplied the light source and projection capability. The displays were monochrome and projected either black or white based on if the LCD pixel was "on or off. " The contrast ratio was usually 7 to 1 based on a super-twist display with one layer of liquid crystal. Some manufactures offer a 12 to 1 contrast ratio with single layer technology.

New LCD panels consists of two layers of liquid crystals referred to as "double super-twist" which provide for a darker pixel density which equals a 20 to 1 ratio. This presents a much improved image but also has a down side in that the resulting image is not as bright as the single LC layer and may require a darker room for satisfactory viewing. Other improvements in technology include better cooling or an infrared filter to dissipate heat buildup to prevent destruction of the LC layer.

Although true color displays are still in the R&D cycle, gray scale LCD panels and simulated color are now available. Just as an gray scale monitors can display gray scales by varying the signal intensity of each pixel on the screen, some LCD panels can turn on pixels to different intensities to create 8 gray scale images. There are currently no WYSIWYG color LC displays but some LCD panels permit the user to vary how many pixels are turned on or off in any given area of the display thereby simulating colors.

A spokesperson for Kodak said that they are working on a true color LC display but cautions to not expect it until 1990. It would be based on technology different from that currently used and might require three polarized layers for red, blue and green liquid crystals. This would further increase the problem of light transmission and heat build up. (Source - PC Week, October 3, 1988).

Lynn R. Trusal, Ph.D. may be reached at 301-845-2651 to answer questions about material that appears in the Bits and Byte Column. The opinions expressed in this column are solely his.

Apple II Q&A

by Robert C. Platt

Types of 3.5" Disk Drives

Q. What are the differences between the UniDisk 3.5 and the Apple 3.5 drive?

A. The UniDisk 3.5 has a separate microprocessor. It will work with an Apple IIe (with a special controller card), IIc or IIgs. The Apple 3.5 drive uses the CPU of the computer. It will work with an Apple IIgs or Mac.

Q. What type of disk drive is built into the Apple //c plus?

A. The equivalent of an Apple 3.5 drive is built into the IIc plus. However, either an Apple 3.5 or UniDisk 3.5 can connect to the smartport on the back of the IIc plus.

Q. What is an interleave factor?

A. Information on a floppy disk is arranged by tracks and sectors. Each track typically contains 16 sectors arranged in a circle at a particular distance from the center of the disk. The

order in which the sectors are placed along this circle is determined by the interleave factor. Traditionally, a UniDisk 3.5 used an interleave factor of 4:1. This means that the sectors were arranged in the following order:

1-5-9-13-2-6-10-14-3-7-11-15-4-8-12-16

If a file is read sequentially, the computer would need the information from sector 1 followed by sector 2 and so on. With 4:1 interleaving, the disk reads sector 1. By the time that sector 1 has been processed, three more sectors have rotated passed the disk's read head and sector 2 moves into position for reading. (If a smaller interleave factor were selected, sector 2 would have already passed, and the computer would need to wait an entire rotation before sector 2 could be read.)

It turns out that the Apple 3.5 drive can process the information from the disk more rapidly. As a result, a 2:1 interleave factor is best for Apple 3.5 drives. Only one sector is skipped between sectors on the track and they are arranged in the following order:

1-9-2-10-3-11-4-12-5-13-6-14-7-15-8-16

Both the Apple 3.5 and the UniDisk 3.5 can read disks which have been recorded with either interleave factor. This is because the number of the sector is written in front of the data for that sector. (These numbers are first assigned and recorded on the disk when it is initialized.) However, an Apple 3.5 drive will be slower when reading a 4:1 disk and a UniDisk 3.5 will be slower when reading a 2:1 disk.

Q. How can I control whether my floppy disks are initialized with a 4:1 or a 2:1 interleave factor?

A. The Apple IIgs System 4.0 comes with an Advanced Disk Utility which gives you the option of initializing the disk with either interleave factor.

GS/OS

Q. What is GS/OS and can I use it on my machine?

A. It's the first true 16 bit operating system for the IIgs and requires the version 01 ROM and 512K of RAM. For any Apple SCSI controller card, ROM on the card needs an upgrade to revision C. GS/OS won't work with earlier Apples, including IIe, IIc or IIc plus.

Q. What is an FST and how does it differ from a device driver?

A. GS/OS requires two different components to talk to an input/output device. Device drivers are programs which perform the actual input/output operations on the hardware. Without a device driver, your operating system will not acknowledge the existance of a particular input/output device. In contrast, a "file system translator" (FST), describes how the information is organized on the device. For example, it would describe the directory format of a floppy disk drive.

The current version of GS/OS includes three FSTs in a SYSTEM folder called FSTS. They teach GS/OS how to interact with ProDOS disks (PRO.FST), character devices (like the keyboard)(CHAR.FST) and CD-ROM disks (HS.FST.)

Future FSTS are promised for MS-DOS formatted disks, p-System and CP/M disks.

Once a device driver and FST are present on a system for a particular type of device, it will show up on the finder desktop, allowing you to open files on that device from any GS/OS program.

Q. Will all of my current ProDOS 16 programs work under GS/OS?

A. No. So far, we have tried GS/OS with WordPerfect and Multiscribe GS and found that they work. However, Paintworks Plus and Paintworks Gold will not work. In general, programs which did not follow Apple's specifications completely may have problems under GS/OS. You have to test each one of your programs.

Q. How can I get a copy of GS/OS?

A. Apple dealers will sell you a set with documentation for $39. Dealers are supposed to let you copy the new system disk for free. User groups and bulletin boards also have copies .

Q. How can I install GS/OS on my software for testing?

A. First, if you don't have a hard disk, copy your original disk. Boot the GS/OS system disk and run the Installer program. Insert the copy of your software disk and when it shows up on the window on the right, click install system. Do not select "Install everything" as this will not fit on a floppy.

Second, if you have a hard disk, install GS/OS in the partition which had your old ProDOS 16. Test things out. If they don't work, you can restore from a copy of your old system folder.

Sider D2

Q. I have a IIgs connected to a Sider D2. When I boot from GS/OS, I can't get the Finder to recognize my Sider. What am I doing wrong?

A. After two calls to Sider tech support, they came up with the following procedure. First, boot into ProDOS on your hard disk as you normally would. Second, run BASIC.SYSTEM. At the] prompt, type PR#5 and return. This will boot GS/OS from your 3.5" floppy. Take out GS/OS SYSTEM.DISK and insert SYSTEM.TOOLS disk. Run the Installer utility. Make sure the window on the right shows the boot partition of your Sider. Then install the system in that partition. This will allow you to boot to GS/OS in the future.

Q. I tried to run the Installer on a startup disk which I customized to save space. It blew up!

A. When you select "install system files" from the Installer, it expects to see the AppleTalk folder, etc. To create a customized GS/OS startup disk, start with a copy of the GS/OS system disk and copy your fonts, desk accessories, etc. onto that disk. Then delete Appletalk and other items which you do not use. Obviously, some new items, such as the FSTS folder must be kept.

Q. What is a disk cache and how does it differ from a RAM disk?

A. They both speed up the execution of programs. In a RAM disk, a portion of RAM is used as if it were a disk drive and copies of entire files are stored there. A RAM cache, merely copies individual sectors from files as they are read from disk. If the same information is used a second time, that sector will be taken from the copy in RAM rather than repeating the comparatively slow process of reading the data from the disk. When all of the space in the RAM cache is occupied, the oldest unused sector is overwritten by the next sector of datA. The larger the RAM cache, the more likely that information will be found in RAM when it is used a second time.

Note that some programs, such as AppleWorks 2.0, see how much free RAM is available and automatically read in files if space is available. When using such programs, you should turn your disk cache off.

GS/OS comes with a NDA which allows you to modify the size of your disk cache at any time.

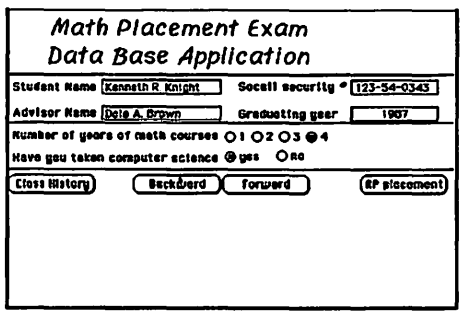
On HyperCard

Part 5—HyperCard and CASE Tools

by Kenneth Knight

In past articles we have examined some very specific issues in making HyperCard do what we want. This month we will not be focusing on a particular programming issue. Instead, we will look briefly at a use for HyperCard—program design.

The broader topic here is Computer Aided Software Engineering (CASE). CASE tools are meant to help the programmer and/or software developer in the design and building of computer programs, such as databases, word processosr, compilers, spreadsheets, stats package, and so forth. CASE applications are to software engineers what Computer Aided Design (CAD) tools are to an architect or civil engineer. We will be using HyperCard to help define a user interface for our projects (in this case the project is a FoxBase+/Mac application).



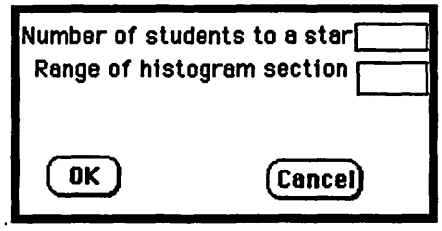
Many of you have seen or used Prototyper and are asking why bother with HC? The answer is that Prototyper, while good in helping to create stand-alone application shells, is less suited to aiding in the design of general overview of a user interface. In this particular example the user interface and the various other input and output aspects of the data base application cannot be expressed with Prototyper (i.e. you cannot produce a sample report). HyperCard is well suited to providing the customer with a solid and general feel for both the input and output aspects of a program. HC achieves this flexibility with the various cards in your stack. A dialog box becomes a card, the series of dialogs that lead up to a print out can be shown as a series of cards, data entry screens can be displayed on various cards, and so on. Each card represents an entity unto itself, either a distinct object that is not connected to other parts of the interface or as part of a series of objects that lead to a final goal. In the math placement project I created a stack that provides the customer with an excellent opportunity to understand the application interface.

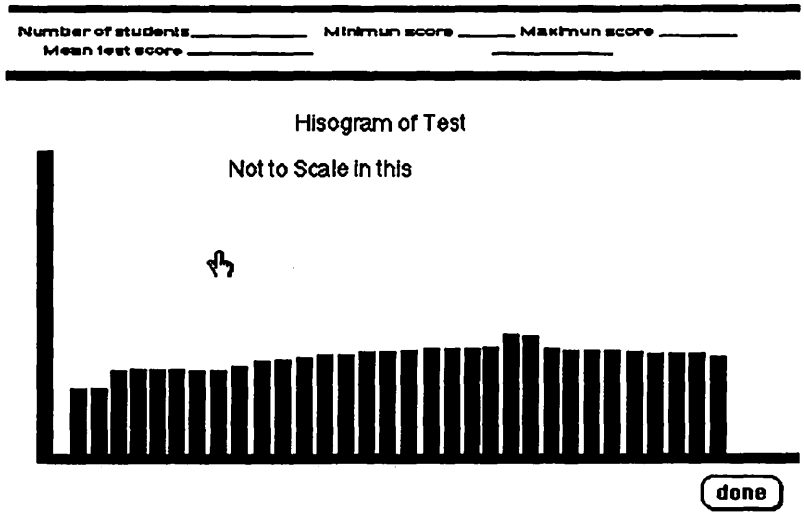
This particular data base application consists of three menus, various on-screen buttons, three different reports, and a plethora of dialog and alert screens. Designing a competent user interface that will provide the user with what is desires quickly and effectively is not an easy task, especially on the Macintosh where the standard Mac interface is so flexible. Normally a soft-

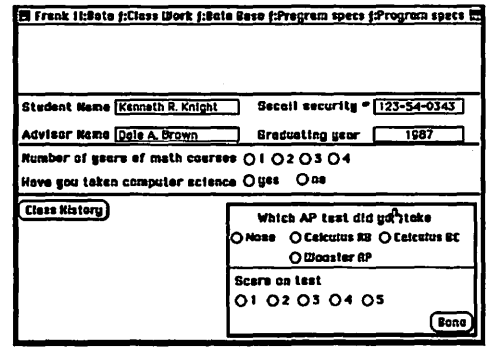
```
--Define menus that will be needed. We make use of the NewMenu XFCN
-and its relatives throughout the stack. They can be found in the
--Developer's stack and Menus for HyperCard. We also use ShowMenu,
--DeleteMenu, EnableMenu.The menus are stored in the global
variables menu1, menu2, and menu3.
on openStack
  global menu1, menu2, menu3, temp
  put the userLevel into temp
  set the userLevel to 2
   put newMenu ("Jump", "forward/F", "Backward/B","Top of
File","Bottom of File", "Jump to record #…") into menu1
  put newMenu ("Scan","Display all Students","Display Placed
Students","Display "Fuzzy" Students","(-","Scan by Name","Scan
by ID #", "(-","Locate by Name…","Locate by ID #…") into menu2
 put newMenu ("Utilities","Print Standard Report…","Print Stats
Report…","Print Placement Form…","(-","Re-Index","Backup File","(-
","Exit") into menu3
end openStack

--This idle function simply updates the menus every 120 ticks (2
--second). It then passes the idle message up the inheritence
chain.
on idle
  global lastTicks, menu1, menu2, menu3
  if (the ticks-lastTicks) > 120 then
    put the ticks into lastTicks
    showMenu (menu1)
    showMenu (menu2)
    showMenu (menu3)
  end if
  pass idle
end idle
--Our clean up routine. We delete the menus from the menu bar and
clear --out the global variables that we were using to store them
in.
on closeStack
  global menu1,menu2,menu3,temp
  set the userLevel to temp
  put deleteMenu (menu1) into menu1
  put deleteMenu (menu2) into menu2
  put deleteMenu (menu3) into menu3
end closeStack

--Process the menu clicks.
--The WHICH paramter contains the menu item name that was selected.
All --we need to do is filter the WHICH paramter through a series
of      --if…then…else statements. If menu item clicked matches
none of the --items we want to dosomething with we pass the DoMenu
message up the
--normal chain of command.
on doMenu which
  global menu1,menu2,menu3
 if which = "Print Standard Report…" then go card "print standard"
 else if which = "Print Stats Report…" then go card "print stats"
 else if which = "Print Placement Form…" then go card "print form"
  else if which = "Locate by ID #…" then go card "locate ID"
  else if which = "Locate by Name…" then go card "locate name"
  else if which = "Jump to Record #…" then go card "Jump"
```

```
  else pass doMenu
end doMenu

-Dim out the requested menus. This function dims the entire menu.
-Example: dimMenu menu1, menu2,menu3
--Example: dimMenu <1st. menu to dim [, 2nd menu, 3rd menu, Nth menu]>
on dimMenu
  repeat with i = 1 to the paramCount
    enableMenu param (i), 0, false - disable a menu
  end repeat
end dimMenu

-Activate menus. This function activates the entire menu.
-Example: hiliteMenu menu1, menu2, menu3
--Example: hiliteMenu <1st. menu to hilite [, 2nd, 3rd, Nth menu]>
on hiliteMenu
  repeat with i = 1 to the paramCount
    enableMenu param (i), 0, true  - enable a menu
  end repeat
end hiliteMenu

-Hilite a single radio button in a group of radio buttons. Turn off
-all the other radio buttons in that group.
-START and STOP define the first and last ID numbers of the radio
-          button group. The buttons MUST be in concecutive order.
-        WHICH is the button to be hilited.
-     Example: hiliteButton 10, 13, 11  This will hilite button 11
in
-              the group contains buttons 10, 11, 12, and 13.
-  Limitations: The buttons must be card buttons.
on hiliteButton start, stop, which
  repeat with i = start to stop
    set the hilite of card button i to false
  end repeat
  set the hilite of card button which to true
end hiliteButton

--Done Button
on mouseUp
  global menu1,menu2,menu3
  hiliteMenu menu1,menu2,menu3
  go first card
end mouseUp

--AP Placement button
on mouseUp
  global menu1, menu2, menu3
  go card "AP"
  dimMenu menu1,menu2,menu3
end mouseUp
```

Info for the stats report dialog







ware developer writes out a mass of information describing word for word what is in the interface and how it all fits together. He or she may also include pictures to help give the customer a feel for what is being put where. However, even with a fairly small application, such as this one, that can easily amount to 30 pages of material that must be worked through. It is very easy to get confused and lost in such a wealth of information. Enter HyperCard—we can now provide the customer with a "working" model of just what we plan for the application. As stacks go this one is not at all complicated. Most of the scripts are of the go card "so and so" type. The exceptions to this rule include the open and close stack scripts. Let's take a short walk through several of the commands available to the user.

The user decides to enter in the Advance Placement (AP) test data, so the "AP Placement" button is clicked on. In the real application a screen will pop up and the user will then be able to fill in the appropriate data by clicking on the radio button. In the stack all we do is go to a card which has the pop-up screen on it. The card also shows part of the main data screen since the AP Placement screen doesn't fill the entire window. When done with the AP data entry you return to the main screen via the "done" button. Note that the menus dim out while the user is entering AP test data. This is part of the user interface, and we do not wish the user to be able to leave this sub-screen except by clicking the "done" button.

It is now time to print out a report. The user has already printed out all the placement forms and now needs the general stats report. The option from the "Utilities" menu is chosen. The doMenu handler intercepts the menu click and takes the user to the stats report dialog card. This card asks where to send the report. If the user clicks the "cancel" button we bounce back to the

main screen. Otherwise we go to the next card (dialog, pop-up screen) which prompts for information that will be needed for the histogram. Again, if the user chooses the "cancel" button we return to the main card. Otherwise a card showing the sample report pops up and the user can stare at it as long as desired. Clicking the mouse in the "done" button takes you back to the main screen.

The purpose of this stack is to provide the user with a general idea of how the application will actually look and feel. The feel of an application is important. If it is chunky and internally inconsistent the user will grow to dislike the application. A smooth and consistent feel is required and the user knows best what his or her needs are. Also, keep in mind that you need not describe in detail each aspect of the interface that you are simulating. Though you should try to simulate all the major points of the interface, minor ones can be left alone. For example, most of the radio buttons in my stack actually do anything. Another example involves the "Class History" button. In the final version the data screen that pops up from that button varies in size depending on how much schooling the student has had. In the stack, though, the size is fixed. The stack is a supplement to all the paper that you have probably provided, that details just what the various menu commands do, what data types will be permitted in what fields, what files are required, and so forth.

As has been mentioned before, the stack is quite simple. Most of the scripts are merely go card x scripts. The exceptions to that rule include the openStack, closeStack, hiliteButton, dimMenu, and hiliteMenu scripts. The openStack script puts up all the necessary menus. The closeStack handler cleans up the menu bar and clears out the various global containers. The dimMenu and hiliteMenu functions are a bit more complex. Thier purpose is to grey out (de-activate) and blacken (active) the requested menus respectively. They are called from various other handlers like the "Print Stats Report" menu option, and the "AP Placement" and "Class History" buttons.

In the real application you may not always want a menu to be active. That is a fairly major point in any interface and ought to be represented in the model as such. The hiliteButton function activates a specified radio button and dims out its neighbors. Such actions can be a vital part of the user interface and therefore are included. What follow are the openStack, closeStack, dimMenu, hiliteMenu, hiliteButton, doMenu, idle, the "done" button, and the "AP Placement" button handlers. They ought to give you a good idea of the mechanics of the stack. The various cards were created using HyperCard's various painting tools. However, the important idea to take away here is that HyperCard can be used as an aid to software design and development.

Writing XCMDs in Lightspeed C:

About the Aboutbox

by Paul Potts

This simple project creates a new "aboutbox" command for HyperCard which will display a picture, wait for a mouse click or keypress, and return to HyperCard. To construct this project you will need Lightspeed C version 3.0, HyperCard version 1.2, and ResEdit. You will also need an object-oriented or bit-mapped drawing program to create a PICT resource.

To access a resource of type PICT, the toolbox function GetPicture can be used. We can get the handle like this:

```
PicHandle the_pic;
the_pict = GetPicture(id_num);
```

where id_num is an integer. Now that we have a handle on the PICT, we can access the parts of the structure. In C, referencing the elements of a structure pointed to by a handle can be done in three ways. The first uses a double dereference to access the elements of the structure directly. The parentheses are necessary in order to dereference the handle rather than the field of the structure:

```
the_rect = (**the_pict).frameRect;
```

The second method uses the "->" operator, which does one dereference and also accesses a particular field in a structure. This is the equivalent to "Pointer ^. field" in Pascal, where the carat indicates the dereference and the period the field offset. Thus,

```
the_rect=(*the_pict)->frameRect;
```

is the equivalent of our first example. It is also possible to dereference the handle, store the result in a pointer, and access the field through the pointer:

```
Ptr deref;
deref = (*the_pict);
...
the_rect = deref->frameRect;
```

Note that this method is either extremely *unsafe* or *unfriendly*, depending on how it is done. Why? First of all, if the the handle is not locked there is a chance that memory may be rearranged behind your back, and that **deref** may no longer point to the PICT by the time you get around to accessing it later in your program. The alternative is to lock the handle using HLock. This is very unfriendly, because if another application needs memory space it will be unable to compact the heap properly due to your locked handle. I include this example to show how *not* to dereference a handle.

Since C is a weakly typed language, I like to program with the "Check Pointer Types" option turned on. This ensures that C will not do any implicit type conversion for you without your knowledge: you must do typecasting on your own. Unfortunately, this often makes code harder to read. Let us take a specific example from my Convert procedure to discuss typecasting:

```
pstr=(StringPtr)CtoPstr((char *)*c_han);
```

The function CtoPstr is a Lightspeed™ C built-in function (I give the prototype) which converts a zero-terminated string to a Pascal type string. Note that it works on a pointer to the string rather than the handle, and this explains the dereference of the handle *c_han. CtoPstr accepts a generic pointer char* , so we must cast the pointer to this type. Since pstr is defined as a (Pascal type) StringPtr for the later call to the toolbox routine StringToNum, we must force the function to return type StringPtr: hence, the cast of the entire function call.

In order to know which PICT to display with this XCMD, I let HyperCard pass the XCMD an argument.

Understanding how this works requires an explanation of a special data structure maintained by HyperCard called the **XCmdBlock**. The XCmdBlock is a non-relocatable block referenced by a simple pointer: HyperCard passes this pointer to your XCMD when it is called. Here are the first four elements of the XCMDBlock structure:

```
short     paramCount;
Handle    params[16];
Handle    returnValue;
Boolean   passFlag;
```

When calling an XCMD from inside Hypercard™, you simply give the name of the XCMD and follow it with a series of up to 16 parameters. Hypercard™ stores these parameters as zero-terminated strings (C - type strings) and gives your XCMD handles to them, contained in the **params** array. **paramCount** holds the number of parameters sent. If we call our XCMD "aboutbox," the XCMD call

aboutbox 35

would make the start of the XCMDBlock look like this:

paramCount = 1;
params [0]=Handle->Pointer->35

The next element of the XCMDBlock is also simple: **returnValue** is used for an XFCN (External Function). The only difference between an XCMD and and XFCN is that an XFCN is called as a function from HyperCard™, and should put a return argument into a zero-terminated string and a handle to that argument in **returnValue**.

If your XCMD is called from within Hypercard, it can choose to ignore the call and simply return. The Boolean variable passFlag can then be set to True by your XCMD to indicate that it did not handle the command, and that the message should continue up the inheritance chain (see the HyperCard Help stack for more information on messages and the inheritance chain.) The default value of **passFlag** is False, so we will not be concerned with it.

I have included the definition of the XCmdBlock in the file "working.xcmd.h." This is an extremely abbreviated version of Apple's header file. The complete XCMD include files as they are written for MPW C do not function properly in Lightspeed™ C, but this header file provides the definitions necessary for this introductory project.

Now we are ready to construct our XCMD. Find a HyperCard stack (your Home stack will do nicely). Select part of a drawing and copy it into the Scrapbook, then paste it into your HyperCard™ stack using ResEdit. You will need to know the resource ID number that ResEdit assigns your PICT when you paste it into your stack. Use ResEdit's Get Info command to find out this information.

Now create a new project in Lightspeed™ C and add the MacTraps library to it. Use the Set Project Type menu option as shown in figure 1. You can use any ID number as long as it doesn't conflict with another XCMD resource already in your stack.

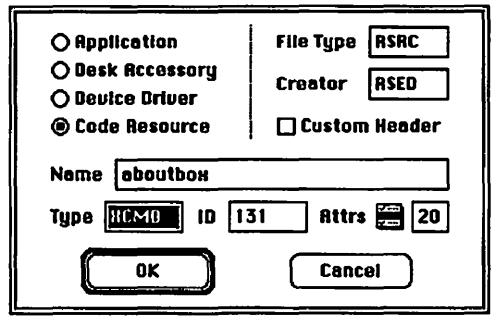


Figure 1: Project type dialogue for aboutbox XCMD

I have set the creator of the resulting file to RSED. This way you can launch ResEdit by opening the code resource file. Now that you have created the project, type in each of the files *as a separate document* and save it in the same folder with the project document. This ensures that the compiler can find all the included files quickly. Then use the "Add" command to add each file to your project. (**Working.xcmd.h** should be in the folder but not added to the project.) Figure 2 shows the files that should be included in your project.

Finally, choose "Build Code Resource" from the Project menu and copy the resource from the file LSC created into your Hypercard™ stack. You should now have a new command in your stack. Entering the command into the message box or running it in a script will draw the about box and wait for a mouse click or keypress. The command is:

aboutbox <PICT number>

➥ 54

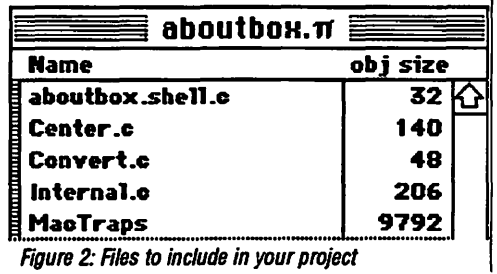


Figure 2: Files to include in your project

13 ➥ GameSIG

The regular monthy GameSIG meeting on November 3rd featured a surprise reappearance of Ron Wartow, our Chairman Emeritus and favorite ninja. Ron suddenly materialized wielding a nasty-looking hard disk and ready to demo **Legerdemain**, his new "hypercard fantasy/role playing all-text all-graphics adventure database spreadsheet telecommunications and desk accessory" program. Despite technical difficulties (only partly remedied by Jeff Stetekluh, David Porter, and David Romerstein), Ron gave us a good look at the game and signed up playtesters. More details on **Legerdemain** will follow (since Ron is a little paranoid about revealing too much too soon!).

Ron and current chairman Charles Don Hall also shared news on recent and forthcoming games, including **Neuromancer, Might & Magic II** and **Wasteland II**, all due to be released shortly for the Apple II series, along with **Dungeonmaster** for the Apple IIGS (a "must buy"). **Times of Lore** and several of the new Infocom games are already out. Charles distributed the following programs for review:

Quarterstaff: The Tomb of Setmoth (Infocom, Mac + or better): Infocom's first fantasy/role-playing game;

Deja Vu: The Nightmare Comes True (Mindscape, Apple IIGS): conversion of the famous detective "MacVenture," this time with *color* graphics;

Uninvited (Mindscape, Apple IIGS): icon-based "haunted house" graphic adventure game in the same popular "MacVenture" series;

Shadowgate (Mindscape, Apple IIGS): third in the GS conversions of the "MacVentures," set in an enchanted castle where you battle an evil warlock.

The meeting ended with the monthly **Robot Tanks** tournament, in which Davy Hakim's "Crystal Raider" defeating all other contenders (David Porter, Jamie Kowalski, Jeff Stetekluh, and Richard Clark); Jeff's program is now up to Version .6, and he is still looking for beta-testers.

Sorry, folks! We forgot to compile our annual "Suggestions for Santa." If you're desperate for advice the November issue of **Computer Gaming World** has an extensive Christmas Buying Guide.

Aboutbox XCMD

```
/*************************************************************/
/*      File: Working.xcmd.h
       Information ©Apple Computer, Inc. 1987
       Abbreviated version of XCMD header info */
typedef struct XCmdBlock
{
       short       paramCount;     /* We are only concerned */
       Handle      params[16];     /* With the first half of the */
       Handle      returnValue;    /* XCMDBlock in this project */
       Boolean     passFlag;

       char        *entryPoint;    /* to call back to HyperCard */
       short  request;
       short       result;
       long        inArgs[8];
       long        outArgs[4];
} XCmdBlock, *XCmdBlockPtr;

typedef struct Str31
{      char guts[32];
} Str31, *Str31Ptr, **Str31Handle;
/*************************************************************/
/*************************************************************/
/* File: aboutbox.shell.c                                    */
/* Simple XCMD shell by Paul Potts                           */
/* Needs MacHeaders turned on.                               */

#include "working.xcmd.h"       /* needed to define XCmdBlock, etc */

void Internal (XCmdBlockPtr paramPtr);      /* prototype for Internal*/
pascal void main(XCmdBlockPtr paramPtr);    /* prototype for self */

pascal void main(paramPtr)
       XCmdBlockPtr paramPtr;
{
       Internal(paramPtr);
}
/*************************************************************/
/*************************************************************/
/* File: Internal.c                                          */
/* Function to display a specified "PICT" resource as an "about  */
/* box" type of dialogue.  The input argument, pointed to by the  */
/* handle in inArgs[0], is the ID of a PICT resource, which should */
/* be contained in the calling stack.  Needs MacHeaders on.      */
#include "working.xcmd.h"

Rect Center (Rect the_rect);
long Convert(Str31Handle c_han);
void Internal (XCmdBlockPtr paramPtr);      /* This function */

void Internal(paramPtr)
       XCmdBlockPtr paramPtr;
{
       long                which_pict;
       EventRecord         theEvent;
       Rect                bounding_rect;
       WindowPtr           theWindow;
       PicHandle           AboutBox;

       FlushEvents(everyEvent, 0);
       which_pict = Convert ((Str31Handle)paramPtr->params[0]);
       AboutBox = GetPicture(which_pict);
       bounding_rect = Center ((*AboutBox)->picFrame);

       theWindow = NewWindow (0L, &bounding_rect, "\P", TRUE,
                              dBoxProc, -1L, FALSE, 0L);
       SetPort(theWindow);
       DrawPicture (AboutBox, &theWindow->portRect);
       while (1)
              {
                     GetNextEvent (everyEvent, &theEvent);
                     if (theEvent.what==mouseDown) break;
                     if (theEvent.what==keyDown) break;
              }
       DisposeWindow(theWindow);
       ReleaseResource(AboutBox);
       KillPicture(AboutBox);
       DisposHandle(AboutBox);
       FlushEvents(everyEvent, 0);
}
/*************************************************************/
/*************************************************************/
/* File: Center.c
/* Needs MacHeaders turned on.  This function accepts a rectangle   */
/* represented in Global Coordinates and centers it on the screen,   */
/* using the Window Manager to determine the size of the screen.     */

Rect Center (Rect the_rect);          /* self-prototype */

Rect   Center (the_rect)
              Rect          the_rect;
{
       GrafPtr       wp;
       short         width, height, new_top, new_left;

       GetWMgrPort (&wp);                    /* Gets the whole screen */
       width= wp->portRect.right;
       height = wp->portRect.bottom;

       new_top = ((height / 2) - (the_rect.bottom - the_rect.top) / 2);
       new_left = ((width / 2) - (the_rect.right - the_rect.left) / 2);
       OffsetRect(&the_rect, new_left - the_rect.left, new_top - the_rect.top
);
       return the_rect;
}
/*************************************************************/
/*************************************************************/
/* File: Convert.c
/* Needs MacHeaders turned on.  A prototype is provided.             */
/* This function accepts a handle to a c (zero-terminated) string and  */
/* returns a long int containing the number represented by the string  */
#include "working.xcmd.h"      /* needed for Str31 types */

long Convert(Str31Handle c_han);      /* this function */

long   Convert(c_han)
              Str31Handle       c_han;
{
       long                thenum;     /* the longint to return */
       StringPtr           pstr;       /* pointer to a pascal string */
       pstr = (StringPtr)CtoPstr((char *)*c_han);     /* convert to Str255
*/
       StringToNum(pstr, &thenum);                    /* convert to a long
*/
       return thenum;
}
/*************************************************************/
```

In Search of a Little Number Crunching:

MathView Professional

by Lou Pecora

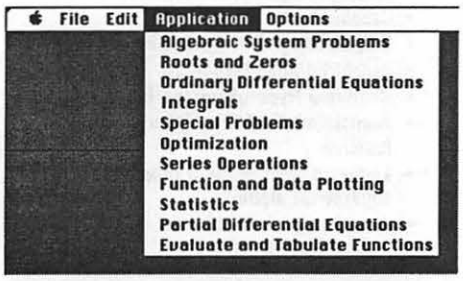
Many technical people often desire a working collection of standard numerical algorithms, ready to go to work when they need them, but without the necessity of programming. They just want these numerical tools available at any time. This can include anything from statistical analysis of data, algebraic manipulation of quantities (including matrices), evaluation and tabulation of arbitrary functions, plotting of functions and data, and much more.

MathView Professional is an attempt to give Macintosh Users just such a collection without the pain of programming. It is a large (601 kilobytes) collection of numerical programs gathered under one roof by an overlying Macintosh interface. In my opinion, it's a flawed attempt. The collection of algorithms is a good one, but their integration into a workable whole falls short. It can be very useful in certain situations, though, and I've found that people who can't or won't program like it a lot. So read on.

Below I list many of the inner sets of routines that MathView Professional provides. If you're not interested in a particular set, just skip it. Be sure to read the last section, however, if you're interested in this program.

Features

The graphic displays the main menu selection of Applications from MathView Professional. It summarizes the available categories of numerical analysis. The Options menu item simply allows for some flexibility on choosing numerical precision and plotting options. All the real action is under Applications. Here are some of the details of how you use MathView Professional to accomplish these things.



Data Input and Output

You often want to input and output data from any calculational program. Programs of this type rarely live by themselves, but often have to communicate their results to other programs (e.g. plotting programs or spreadsheets) or other calculational features within the same program so you can do further analysis or better display the data.

In MathView Professional data is input and output through standard ASCII or text files. One nice feature of MathView Professional is that you have a great variety of data file types to choose from. Mainly the choices come in the type of delimiters. A delimiter is a character that comes between two data in a file. This enables a computer program to know where one datum leaves off and another begins. Typical delimiters are tabs, spaces, and commas. Many computer programs allow only one type of delimiter and are very strict about it. Do not have other delimiters mixed in! If you do, you often simply get a bomb. No warning, just a bomb (e.g. Cricket Graph). MathView, mercifully, accepts a great variety of delimiters and seems to handle them well. It also give you the choice of delimiter in your output file.

Data for matrices are handled in the following format:

n,m: a11 a12 a13 ... a1m a21 a22...a2m...anm

Here I have represented the dimensions of the matrix by n (number of rows) and m (number of columns) and the elements by aij. The matrix elements are separated by spaces.

MathView Professional also handles a wide variety of data, from fixed point to floating point. The floating point is written in the usual x.xxxxesxx notation, where x's are numbers, e is the character "e" and s is a sign , + or –, with + optional.

Functions in MathView

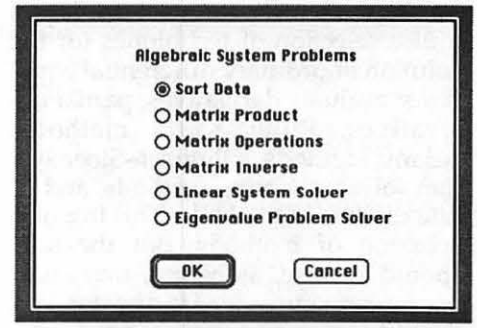
Writing functions in MathView Professional is so similar to many other computer languages that anyone with even the slightest amount of computer programming experience will only need to glance at the manual. Anyone else will have to read some, but function writing is really very simple. The only thing you would have to get used to is using "^" for exponentiation, viz: for xy write x^y .

There is one warning, and it is a flaw (not a bug, a flaw) in MathView Professional. When writing floating point numbers in functions, you can not use the floating point "e" notation (see above). You must use 10^exponent notation. For example to use 2.5116 x 10-5 write 2.5116*10^(-5). I struggled for some time with MathView Professional telling me I had a function error, until I finally figured out that I was writing floating point values in my function like they were written for data, and that was a no-no. I had read the manual, but it is easy to miss. The reason for this is, presumably, because "e", in a function, stands for the base of the natural logarithms (2.78...) and so cannot be confused with 10^... . I think this should be changed. The "e" floating point notation is everywhere on computers, even in MathView Professional's data. The natural logarithm base can be written by the common, mathematical notation exp(...) which is used like sin(...) is used for the trigonometric function sine.

Algebraic Systems Problems

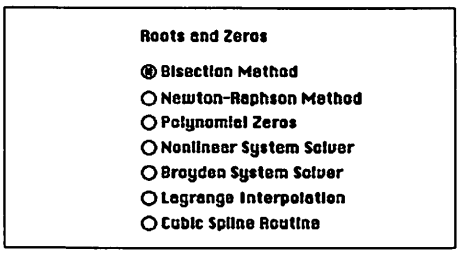
Except for Sorting, this category includes mostly matrix operations. The dialog box you get when selecting Algebraic Systems Problems is as follows:

The topics are self-explanatory. The matrix values can be entered either manually or from a data file with a "matrix" structure (see above). The results of these calculations can be copied to the clipboard or stored in a file of your choice. All the operations appear to work well. Since you're limited only by your computer's RAM, you could work with quite large matrices (eg. 100 x 100), although you might spend a good bit of time staring at the screen while the Mac does its thing.



Roots and Zeros

What this means is that MathView Professional can numerically attempt to find solutions to systems of nonlinear equations. This is no mean feat and anyone who has attempted to write a program to do this will appreciate that this is a tough problem to solve. MathView Professional offers several techniques to try.



Beware, though, that you should not use these blindly. If your work dearly depends on the solution, I highly recommend you acquaint yourself with the technique you choose and know its limitations, especially its expected errors.

Ordinary Differential Equations

This is something that not everyone feels comfortable with. It involves calculus and, therefore, leaves some in the dark. If this is the case with you just skip forward to a section that applies to your work, but be aware that solutions to differential equations are incredibly useful and necessary. From the trajectories of space shuttles, to the behavior of bending beams, to atomic processes, they are all governed by differential equations. These are important mathematical systems to be solved.

MathView Professional offers you a nice selection of techniques for the solution of ordinary differential equations: evaluate derivatives, partial derivatives, Runge-Kutta methods, Adams Methods, a Bulirsch-Stoer system solver, shooting methods, and finite difference methods. This is a nice selection of methods. But the user should beware, as before, that blind use can sometimes lead to disaster. You should know something about your system (Is it a "stiff" equation? Does it have chaotic solutions?).

Up to 75 simultaneous differential equations can be solved with some of these techniques (although I'd hate to hold off lunch to wait for a Mac Plus—or any PC without a math coprocessor—to get the solution).

You can get a trajectory (or table, if you like) of solutions for single differential equation solvers. This is a nice feature. Getting a trajectory of solutions for systems of differential equations, however, cannot be done. This is a shame because it is often the way that solutions to differential equations are best viewed. One set of solution numbers usually tells you nothing.

This is something that not everyone feels comfortable with. It involves calculus and, therefore, leaves some in the dark. If this is the case with you just skip forward to a section that applies to your work, but be aware that solutions to differential equations are incredibly useful and needed. Trajectories of space shuttles, behavior of bending beams, and atomic processes are all governed by differential equations—important mathematical systems to be solved.

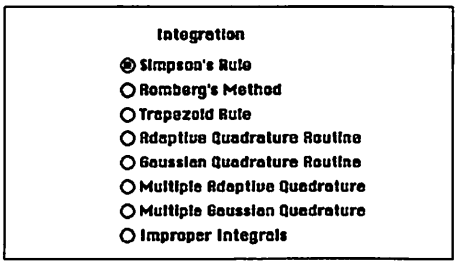
MathView Professional offers you a nice selection of techniques for the solution of ordinary differential equations: evaluate derivatives, partial derivatives, Runge-Kutta methods, Adams Methods, a Bulirsch-Stoer system solver, shooting methods, and finite difference methods. This is a nice selection of methods. But the user should beware, as before, that blind use can sometimes lead to disaster. You should know something about your system (Is it a "stiff" equation? Does it have chaotic solutions?).

Up to 75 simultaneous differential equations can be solved with some of these techniques (although I'd hate to hold off lunch to wait for a Mac Plus—or any PC without a math coprocessor—to get the solution).

You can get a trajectory (or table, if you like) of solutions for single differential equation solvers. This is a nice feature. Getting a trajectory of solutions for systems of differential equations, however, cannot be done. This is a shame because it is often the way that solutions to differential equations are best viewed. One set of solution numbers usually tells you nothing.

Integrals

This, in a sense, is the other calculus side of differential equations. Integration is actually more difficult than differentiation. For this reason alone numerical methods have come to have great importance in the application of calculus to science and engineering. MathView Professional allows the following integration schemes:



Special Problems

This is sort of a catch-all of useful routines covering complex powers and roots, special functions, and fast Fourier transforms. Fast Fourier transforms are a well-known technique for signal analysis—this is a nice addition. But limitations of MathView Professional (see the final section, below) surface when you want to modify the Fourier transform and see the resulting function.

Special functions show up everywhere in science and engineering. MathView Professional offers a nice collection. I find these especially useful to test routines I write myself to be used in my calculational programs. Some of these are especially complicated and it's nice to have such a check. One nice feature of MathView Professional is that all its special functions can be used in a calculation requiring a user defined function much as one might use the simple trigonometric functions sin(x) and cos(x).

It would really be nice if the user could add to this list his own special

Special Functions

- Chebyshev polynomial of order n
- Gamma function
- Complement of Error Function
- Error Function
- Legendre polynomial of order n
- Hypergeometric function
- Hermite polynomial of order n
- Modified Bessel function K
- Bessel function of the first kind
- Modified Bessel function I
- Bessel function of the second kind
- Jacobi Elliptic function sn
- Elliptic Integral of the 1st kind
- Jacobi Elliptic function cn
- Elliptic Integral of the 2nd kind
- Jacobi Elliptic function dn
- Confluent Hypergeometric function
- Associated Confluent Hypergeometric function
- Laguerre polynomial of order n and superscript alpha
- Jacobi polynomial of order n and superscripts a and b

functions which would then always be available.

Optimization

This is simply a set of techniques that seeks to find the minimum or maximum of a function. That's the meaning of optimization here. There are several methods used here, some allowing constraints, too: steepest descent, conjugate gradient method, simplex method, Wolf quadratic method, Raleigh-Ritz method. Again the user should know which method best applies to his/her problem.

Series

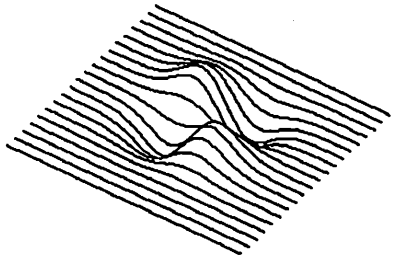
Here, series is a power series of the form a[0]+a[1] x +a[2] x2+a[3] x3+... . The a[j]'s are numbers input by the user. The program can take a finite series like this and manipulate it to produce a ratio of two series, a series to any power (even irrational), composition of two series, the reverse of a series, and inverse of a series. This would have been a big help to me back when I was taking calculus.

Function and Data Plotting

MathView has the capability of plotting 2D or 3D user defined functions (see Functions section, above). This I find useful only for pedagogical purposes. What most technical types want is plotting of data. MathView does some raw data plotting, but it is limited. Unfortunately, it does not plot 3D data. It also uses a hidden line algorithm to do its 3D plotting.

It would seem to me to be better to use the Mac's Quick Draw ability to draw overlapping polygons on the screen to do a "hidden line net" surface 3D plot. However, it does a passable job of 3D function plotting and for getting the feel of function surfaces as defined by a real function of two variables it would be useful to a student.

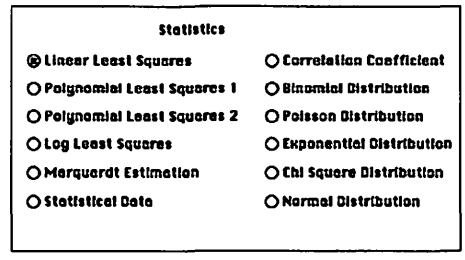
An advantage of MathView has is that all its special functions can be used in the definition of a new function to plot, just as one might use sin(x) to generate numbers for the trigonometric function sine, in another function.



Statistics

MathView offers quite a bit of statistical analysis.

I do think that for hardcore statistical types, one of the Macintosh statistics programs (like, say, StatView) would be much better suited. For technical types who only occasionally need statistical routines, but good ones, MathView offers a useful choice.



Partial Differential Equations

This section, while sounding high powered, is not useful. It offers a few solutions of common linear partial differential equations. The real problems are often nonlinear partial differential equations, which are outside the scope of any program like this, and in fact any Macintosh, except perhaps a Mac II or Mac IIx with lots of memory. This section would have been better left out, with the plotting section enhanced instead to handle more data plots, especially 3D and/or the ordinary differential equations section having solution for a trajectory of points for a system of equations.

Evaluate and Tabulate Functions

This section is much like the plotting section in that it handles only user defined functions. It is marginally useful to technical types and best for students who have to learn about functions such as sin(x)+3 e-y +z2. I personally think that even a computer-phobe would be better off biting the bullet and learning BASIC to program simple functions and generate tables of values. The flexibility and (in the end) efficiency of programming is well worth it over this section of MathView. The only advantage I see in MathView is that all its special functions can be used in the definition of new functions to tabulate, as in the plotting section.

Should you get it?

Despite all these features, MathView is a program that is difficult to recommend to everyone. Its myriad of choices are countered by its rigid structure. Although one can take output from one calculation and use it as input to other calculations, most features remain isolated. The program seems to be just like its foundation—a collection of separate numerical algorithms.

What is really needed here is more true programming ability. This, I realize, is a tall order, but without some simple form of linking calculations together automatically, MathView, at times, seems crippled. If the user could define his own functions and in some sense automatically pipeline results from one calculation to another, this would be a dandy package.

At the minimum the author should consider the following. Drop the Partial Differential Equations feature and perhaps other little used sub-features and beef up what's left, like the plotting capabilities—especially the plotting of 3D data, or systems of differential equations. Make the dialog boxes for the calculations less hierarchical. As it is now, if you make a mistake in a dialog box you've already "OKed", you basically have to start all over. There should be a quick way to go back without having to type everything in again. This is important since many calculations have to be done over and over with slightly differing parameters (see how "looping" would help? That's the programming that's missing).

I would recommend it to students needing to get a numerical feel for the topics covered in MathView, to programmers needing to check their number-crunching work, and to computer-phobes who can't program, but who need to calculate some of the things MathView can do. It is somewhat expensive, though ($145 from MacConnection). And, unless you already have a good Basic, Fortran, C, Pascal, or whatever compiler, I'm more tempted to tell you to get one of these and learn to program what you need.

But then, remember what I said. Where I work, those who can't or won't program thought MathView was a gem. Consider your needs, time, and skills carefully and check out MathView. It may be for you.

Lou Pecora is just a guy with a Macintosh who knows his math.

Macinations

What's NeXT Apple?

by Robb Wolov

I have a warm spot for Apple Computer. After all, the company, with the Mac, gave me an alternative to my old IBM, and with it I do ALOT of work. They have shown more innovation then the competition, which has been their major weapon in the marketplace. But, companies are like animals. They evolve. And, they must adapt to their environment. Those that adapt prevail. Those that don't... The environment just changed!

> ***"Until now Apple had only to compete against MS-DOS. . ."***

On the 12th of October, Steve Jobs released his NeXT computer. After what seemed an interminable wait, filled with rumor, delay and enough industry gossip for a soap opera, Jobs took his new computer out of the vaporware category—sort of... The NeXT is an interesting product. And, it will be good for us as Mac users *and* for Apple (though they may not think so at this moment!) It will force Apple to respond and evolve.

Until now (the Amiga notwithstanding), Apple had only to compete against the MS DOS world of the Intel 80x86. The best they could throw against Apple was sheer clock speed. Don't underestimate, 80386 computers running at 25 MHz are powerful pieces of hardware. But, they are different animals, and I feel they lose it with their operating system. MS DOS as well as OS/2 just don't hack it—I've used them both and it's a jarring experience!

They have their supporters. But, it was because of the operating system that I left the IBM world for the Mac in the first place. Bench testing a Mac II against a Model 80 is like racing a Corvette against a Rolls Royce. Both are great performers in their respective categories, but the working "character" of both systems are not directly comparable.

For computer users, both families seem to travel parallel paths, but not the identical road. Thus Apple did not feel threaten except where their paths crossed—at the user interface of the operating system. In the NeXT machine, we now have a major competitor (at the product level at least) which does seems to travel the same design path as the Mac (we may be catching a glimpse of the next generation Mac, code named this week "Four-Square").

Jobs went to universities, Apple's home turf, asking them for their dream specs for a "Scholars' Workstation". What resulted is a machine, while not revolutionary, packs an incredible amount of hardware and performance for the price. The NeXT is based on the Motorola 68030 running at 25 MHz (the Mac IIx clocks at 15.7 MHz) with a 68852 math coprocessor. The graphical operating system is a variant of Unix called Mach, developed at Carnegie-Mellon University.

Jobs, being a big believer in CD-ROM technology, has his machine sporting a 256 megabyte *erasable* (optomagnetic) CD-ROM drive by Canon, with removable media as its mass storage device. A 17" high resolution gray scale monitor is driven by Display PostScript rather then QuickDraw. This allows a true WYSIWYG (what you see is what you get) screen. No more working with an image destined for a 300 dpi (dot per inch) printer on a 72 dpi screen.

There is an optional 400 dpi laser printer for $2000 that uses the Display Postscript language built into the computer to layout pages for printing the same way that the GCC Technologies (formally General Computer Corporation) Personal Laser Printer and Apple's own LaserWriter II SC use QuickDraw within the Mac.

The NeXT contains a stereo digital sound processor, the 56001 DSP which does not require the computer to be used through a MIDI interface to control a musical synthesizer. The computer BECOMES the synthesizer! This is not a gimmick, but an important tool for those researchers doing work in sound and speech analysis.

Without getting too technical, Jobs has unloaded much of the data management activities off of the CPU, resulting in more speed.

Like the original Mac introduction, the NeXT machine comes bundled, ready to run with some very sophisticated software. A "digital library", includes Webster's Unabridged Dictionary (with illustrations!), The Oxford Dictionary of Quotations, Webster's Thesaurus, and the complete works of William Shakespeare.

Bundled software also includes the Mach operating system with NeXTStep, Jobs' vision of what he would have done with the Mac's Finder had he remained with Apple. WriteNow (a word processor), Mail (Unix mail with voice capability), Mathematica (a symbolic mathematics application), Sybase (a high performance database package), and Franz Common Lisp are also thrown in. With 8 Megs of RAM standard, at $6500 (university price), you may have a real challenger to one of Apple's traditional markets.

There are problems for NeXT. Don't forget, this was an unveiling of just one machine. It remains to be seen if Jobs can deliver his computer in numbers *and* at the announced price...*and* on time. Having worked in the electronics industry, it is a long way from demonstrating a one-off prototype to delivering a mass produced product. Jobs is still not promising delivery until the end of 2nd QTR 89. NeXT, for the sake of speed, has forged off on its own from the IEEE standard, with unilateral changes to its NUBUS buss. Jobs has now made a standard, nonstandard! Just what third party board makers need—another standard. The NeXT machine is tailored to work as part of a network. This means shared software. More than one programmer has already expressed coolness for writing for such a system.

> ***"If Jobs pulls this off. . .Apple will have to respond in both price and performance."***

If Jobs pulls this off, making NeXT a real company (sorry Steve, but I can't take you seriously until I see product actually shipping), Apple will have to respond in both price and performance. Until then, NeXT can still act as a spoiler. There may be academic customers hesitant to purchase anything until the dust settles.

Competition will hopefully drive down prices—especially after the recent price hikes. We could see a Mac Plus at IBM clone prices, to bolster the low end of the academic market. I think

we can expect more performance with a beefed up 24/32 bit Color QuickDraw in response to Display PostScript. Erasable, rewritable, CD drives look like an inevitable evolutionary progression from the fixed, hard disk, as the hard disk supplanted the floppy as the mass storage device of choice. Technically, we will probably see Apple taking other steps to unload the CPU (such as utilizing graphics coprocessors) to improve performance.

> *"...the Finder may have driven a few of you to quiet exasperation."*

Bill Gates of Microsoft will be losing sleep if the Next comes to fruition, since he has been one of the biggest promoters of CD-ROM (read ONLY memory) technology. This will be a dead technology if rewritable CD's are merged to personal computers at affordable prices.

In other words, NeXT, by creating a machine that is more closely comparable to to the Mac, will force Apple to become more aggressive in performance and pricing—and less complacent. As users, we would all benefit.

It's Not a Bug... It's a Feature Dept (Part II)

Considering what the Finder and System are called upon to perform, it is amazing that things work as smoothly as they do. I say this in spite of all of the bug reports for the new System (6.0... 6.01...6.02...).

I have been using 6.02 for the last couple of months (as well 6.0 and 6.01 preceding) and confess that if pioneers are the ones with the arrows in their chests, I have been struck by relatively few (knock on wood!) I mention this only because over the last few months, Apple has given me more excuses to install and reinstall "updated" system versions and have encountered a particular failing of the Finder that may have driven a few of you to quiet exasperation. That idiosyncrasy was manifested by the "Application Unable to be Opened or Missing" dialog box.

Between logging on to various services for my E-mail, researching literature searches through my medical school's library computer, or just taking a glimpse at the latest shareware, I do quite a bit of telecomputing. It was this last activity, downloading shareware, that I first noticed the problem. Ray Lau's compression/decompression utility, *Stuffit* resides on my system's main hard disk. Yet, I noticed that compressed, "stuffed" programs—the form that most new files come into my system off of Compuserve, MacNet or the Twilight Clone—did not recognize the presence of the application after installing successively newer System/Finders. A bug? Number sixty-one of an admitted sixty bugs in 6.0? Stackware also lost track that HyperCard was on line. A return to pre-version 6 System/Finders was to no avail.

I must thank Bob Pulgino on the Twilight Clone for the answer. It seems that this phenomenon, the "forgetful Finder", occurs any time you add an

Create Professional Quality Circuit Diagrams With

MacSchematic

from Thinking Tools

MacSchematic is a library of 800 Electrical and Electronics symbols for creating schematic diagrams on the Mac.

MacSchematic symbols are in both PICT format for MacDraw, MacDraft, or other CAD/Draw programs and as MacDraw II libraries.

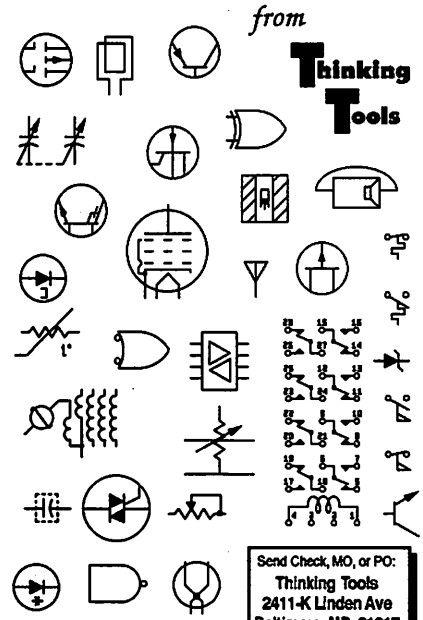
MacSchematic symbols are object oriented for superior plotter and laser output. They can be rescaled without losing their high resolution.

MacSchematic symbols are designed to snap to grid so their external connections fall on grid points and lines connect to symbols "on the dot".

Also Included: Microfont

Not Copy Protected

All Macs



Contains symbols from ANSI Standard Y32.2 including:
- Analog Components
- Gates and Digital Devices
- Residential/Industrial Wiring
- Ladder Diagrams

Symbols are shown at 50% Normal Size

MacSchematic: $80
Demo Version: $10
plus $5 s/h for program or demo

Send Check, MO, or PO:
Thinking Tools
2411-K Linden Ave
Baltimore, MD 21217
Dealer Inquiries Welcome

For Information or Visa/MC Order, Call (301)-383-6490

Desktop Publishing and Printing .....

A relationship that was BOUND to happen

Bringing desktop publishing and printing together is a natural..... finding someone who does both successfully is a challenge.

At HBP, we do both!!!

High Resolution Output of IBM™ or MAC™ files
Page Composition Services
Graphic Design Services
Scanning of text, graphics, halftones
Authorized Adobe Software™ Dealer
..... and of course full service printing.

Call us today and find out more about our services .....chances are you're bound to use them.

Ask for Brian at EXT.25
1-301-733-2000 1-800-638-3508
Hagerstown Bookbinding & Printing Co., Inc.
952 Frederick Street, Hagerstown, MD 21740

Best of the Mac TCS

by David Gursky

HyperCard

From Robert Platt on 10/01

Suppose you had two background fields in each card: requirements and referenced. You can then have a button for "Set new requirement" and "Delete requirement":on mouseup

- ask "What requirement?" with "200"
- put it in req
- put req after background field "required"
- put the short name of me into x
- push card
- go to card req
- put x after background field "referenced"
- pop card
- end mouseup

From Paul Chernoff on 10/17

Here is what I hope is a simple question.

I am writing a script to import a tab-delineated file. I have most of the script written out based on Goodman's Hypercard Developer's Guide but I am left with one question. I will be needing to add some of the imported data into an field which already has data in it. I want the new data to follow the old. One way I though of doing it would be to put the old and new data into variables, combine them into a 3rd variable and then put them into the field. I was wondering if there might be a cleaner way of doing it, such as putting the new data into line (last + 1)?

From Annapolis Slice on 10/17

If I understand your question correctly, Paul, I believe the answer in appending text to a field that already has text in it, it to use the 'put <it> after <field name>' command. No need to keep track of line numbers or use a 3rd variable.

This is assuming you are using a recent version of HC. This just puts any new text read in into <it>, directly AFTER the field named in <field name>. No need to even keep track of what line you're on, unless that's important to another part of your stack.

From Paul Chernoff on 10/18

Thanks. Also just 'put <it> in last line of field <x>' (or something like that) seems to work. That's what I did yesterday but I think something else went wrong. I am getting more impressed with Hypertalk as I get to use it.

Telecommunications

From Bill Baldridge on 10/08

Unless you need FULL Hayes compatibility or some of the built-in error checking schemes, most (if not all) modems are usable with most (if not all) BBS's and Networks (CI$, GEnie, et al). The main things I look for are features (on-off switch on front, volume control, etc.), and looks (same color as Mac, fits under my external drive). The Anchor 2400 we sell through the PI filled most of these, so I bought one. I've since found it doesn't have auto-redial (or I just haven't gotten around to reading the manual), but this is a minor point (for me). For $155, I'm not griping.

From Bill Baldridge on 10/08

Call the PI office during business hours and ask about the group purchase modems.

From Bill Baldridge on 10/16

Is this one of those ZOOM modems or the $107 "Black box" specials from Taiwan? I've seen 2400 baud modems advertised recently for as little as $105, but have to wonder how good their error correction is, and how long they'll last. What kind of warranty comes with the modem? (This too is a bit of a scam, if the company goes bye-bye next year) If the modem is from someone like Anchor, who has been in the business for some time, then a 5-year warranty carries good weight. *Caveat emptor...*

MS-DOS

From Nick Tillotson on 10/25

Does anyone know or have any suggestions on software that will allow me to operate my MS-DOS based box at work remotely using my Mac at home. Software that comes to mind is P.C. Anywhere / Carbon Copy / etc. I have heard rumors of version written for the Mac that are used on both machines to accomplish this. Any ideas, experiences or information would greatly help before I go pricing software and finding out about my options. Can this be done? Will applications work running through these softwares? Any information I could greatly use in accomplishing this goal would be helpful.

From Paul Chernoff on 10/26

P.C. Anywhere does have a Mac version to allow a Macintosh to control a MS-DOS computer, but not the other way around. One way of running IBM software on a Mac.

From Richard Brosnahan on 10/26

We use P.C. Anywhere at my place of business. It works, for the most part. We use it to access our network, since you can do many things the PC can do. You cannot, however, run things that use IBM graphics, such as Windows. That could have been interesting, Windows on a Mac.

It is not without faults. The Mac end of it is not thought through, and took some fiddling to make it work. The dial up routine does not work at all. Tell it to dial, and it sends and unknown init string to the modem, and dials. You get a dialog box that should dismiss when you get a connect. It doesn't. you can dismiss it yourself, but what you have then is a modem that has been improperly initialized, and give you more garbage than you have ever seen on a screen in your life. The guys who wrote this thing are idiots. You can use the "Emulate dumb terminal" mode to dial using ATDT and go from there. That way it works well. You could also use another terminal program, but the PC Anywhere product gives you access to the F keys on the Boat Anchor end. PC MacTerm is the name of the Macintosh end of the line. Just now thought of it.

We did call the company who got back to us the next day. They did not give us the correct solution. That was left to us. We got stuff from them like "Is the modem turned on?" and "Is it Hayes Compatible?". We also got an init string to try. Trouble is, that string is dumped when the dial up routine is called, since the first part is an ATZ.

---

application to your hard disk without letting the Finder "know about it". This comes about when you download and decompress a stuffed application or restore an application from a backup with an automated backup program.

Normally, when the Finder adds an application to your hard disk, it recognizes that it's an application and copies its creator code to a special table. When a document with that code is opened, the Finder knows where its corresponding application can be found without having to search every folder on your disk. After more then seven years, I'm still waiting for Big Blue to duplicate this trick with MS DOS!

When you try to open a document the Finder checks this table. If it fails to find the document's creator, it will search every open folder for applications which match.

Stuffit and other such programs that have the ability to copy files to your disk do not add an application's creator to the Finder's table. Therefore the Finder does not know that the application is available.

To cure the problem, simply open the folder where the application is located and either open the application, or move it to any other folder. To prevent the problem from recurring, if you are using MultiFinder, always unstuff to an *open folder*. If not, unstuff to the root directory, and then place everything in its proper folder manually. Moving an application to a new folder in the Finder causes the location table to be updated for that application. Note that rebuilding the desktop does *not* fix the table (though it will clean it up, erasing old icon resources from deleted files reducing wasted storage space and speeding up redrawing the desktop).

Until next time...

From Holger Sommer 10/26

Does run MS-DOS software with EGA graphics on the Mac II... I am looking for a program like this.

From Paul Chernff on 10/27

As RCB mentioned you will not get PC graphics mode. It was written up not too long ago in *PC Magazine*. I will see if I can find the reference.

Programming Languages

From Larry Stedman on 10/01

Maybe I'm in over my head, but in what way do I edit the FREF, BNDL, and signature resources?? What should these things have in them?

From Bill Baldridge on 10/02

There are four items required for an Icon to properly be recognized and displayed by the Finder: BNDL, FREF, ICN#, and a unique tetragraph conjured up by the creator. All can be created/edited with ResEdit. In fact, ResEdit and REdit (the euro version) are the only two I'm aware of that can accomplish this task — why doesn't someone do an 'Auto-ICON' application? I don't think Icon It! can do this... Anyway, there's a good article in the April '88 issue of Mouse Droppings (the Corvalis, Oregon MUG) that details the in's & out's of icon creation. Some day...if I feel ambitious, maybe I'll condense it for posting here. (It's two-three pages long)

From Louis M. Pecora on 10/03

I may have found the answer to my own question. Putting in a call to System Task appears to handle FKEY's. Any commennts?

From Jim Donnelly on 10/04

I'm just beginning MPW, using the TML Pascal II compiler, First mystery:

I set up some menus in ResEdit and set the enable flags the way I wanted them, but DeRez arbitrarily changed the last two bytes in all of them. "Well," I figured, "what do I know?" so I ran it anyway, using DeRez's version in a resource file. Everything was totally screwy, of course, but luckily "Quit" happened to be enabled so I could get back and type in the flags the way they originally were.

Why did DeRez do that?

From Louis M. Pecora on 10/04

Note that a call to SystemTask does not always FEKYS. It does so on my Plus at home and the Mac II at work, but NOT on my Plus at work. Can't find any conflicting QuicKeys macros, or other INITs not already on my home computer. Any Ideas? Rich Norling, are you there? Is there something I should know about how Language Systems Fortran handles SystemTasks, FKEYS, and events in general?

From Louis M. Pecora on 10/04

On the Mac (and other computers) one often encounters tab (or space) delimited data files. These can be generated as input to or output from Data Base, Spreadsheet, Plotting (e.g. Cricket Graph), or other programs. They can be thought of as tables of data with, say, n rows and m data (delimited by tabs or spaces) in each row. My question is in Basic is there any way to write a general routine to read a file of this nature when the number of items (tab- or space-delimited) in a row are different for each file? That is, you would input this number (as well as the number of rows) when you ran the program and the program would read the values into an array (e.g. DAT(100,100)). The Basic file reading command INPUT requires comma delimited data AND you have to know the number of data points per row when you write the programs.

In other languages there are constructs that allow for this variable number of data points/row case as well as for data separated by "white space" (tabs, spaces, etc.). Basic appears to be missing this. Or is it? Have I missed something? Let me know, please.

I have developed a way to do what I want, but only with rather exotic string parsing routines. I fear I may be missing something simple and am doing things the hard way. If not, I will probably write this up as a WAP Journal article, since I can easily envision someone (like me) writing a general Basic program to analyze data and then wanting to apply it to arbitrary output from a program (Spreadsheet, Database, or whatever) without having to write a special version of the Basic file reading routines for each case.

It seems to me that since Basic is such a commonly used language and that files of this type are so common on all sorts of computers, Basic should have a general way of reading them. But I haven't found it. Help and comments appreciated. If anyone wants, I'll upload my routines (done for True Basic). That is, if there's not a simpler way to do it.

From Russ Bradley on 10/15

What exactly is CAPP? I've noticed they have one for LSC as well.

From Curt Harpold on 10/16

CAPP is a text editor workshop by Steve Capps. The C version is kind of buggy (some files won't compile as supplied), and source isn't provided for everything, but it's still quite instructional. I haven't actually seen the Pascal version yet, so I don't know if it shares the same problems.

From Thomas Inskip on 10/19

I am using Light Speed Pascal to do some programming, and right now am having a quite weird problem.

If I declare a variable as (for example):

Thing: str255 or as

Thing: string[255] or any high index number, and then try to access it, it will only let me access some of the characters in the string.

If I do:

```
for num:= 1 to 255 do
thing[n]:='a';
```

sometimes n will reach each time a different number, but never 255.

Before getting to 255 it will give me a "String range error (trap 2)" which is supposed to be posted if you try to access an element out of the string's index.

Does anybody know why?

From Fernando Salazar on 10/20

Possibly, its only letting you access characters within the length of the string, though I can't see why it would do such a thing. Try doing:

```
thing[0]:=chr(255);
```

before your for-loop, and see if that has any effect.

From Thomas Inskip on10/20

The string has a logical size of 255 characters (the maximum), and it won't let me access all of them, each time I get a different result, sometimes I can access up to 100 and something, some times less; it varies each time I run It.

I don't think it makes any sense at all, and I am still here trying to get it to work.

From Thomas Inskip on10/20

I have also discovered that if I declare the string (string[255], str255, or whatever), and then, right at the beginning of the program I ask for length(TheString), it gives me a value other than 0, which should have, since I haven't put anything in it yet, and if I print it with WriteIn (TheString), it displays a bunch of junk (which I haven't stored in there).

I think that is a rather abnormal behavior for such a simple thing, and I have no Idea of what it can be due to.

From Fernando Salazar on 10/21

What I am saying is that you may have to initialize the string. When you run your program, a string is just an address pointing to some bytes; those bytes contain whatever they had BEFORE your program started. The fast that the length you can access varies each time suggests that the length-byte of the string contains a random number.

Try some experiments. Explicitly set a string to some length by doing something like:

```
My_String:='Hello, world!';
```

then see how many characters you can access.

I agree that if a variable is declared STR255, you should be able to set any arbitrary byte it contains, regardless of what the length-byte contains. But from what you are describing, that's the only thing I think off being the cause.

Focal Point

From Ron Mann on 10/26

It is my understanding that there will be a second version of Focal Point coming out within the next month. I hear that it will be called Focal Point II an is a separate program and will *not* replace current version of FP. It is supposed to have many features that you would expect to find on a project management program - including the price. I was told it would go for $200 but if you bought standard version of FP you could upgrade for $90 if you later decided you wanted FPII. However, if you are a registered owner by Nov 1,

1988 you could upgrade to FPII for $40. If anyone is interested *Make sure you get your Registraction Cards sent in now!!!* Or, buy FP now and get a $200 program for about $100 — Current version is $59 from MacConnection and the $40 upgrade. Considering what you can do with the current version of FP this might be a good value.

Invisible Files

From John White on10/02

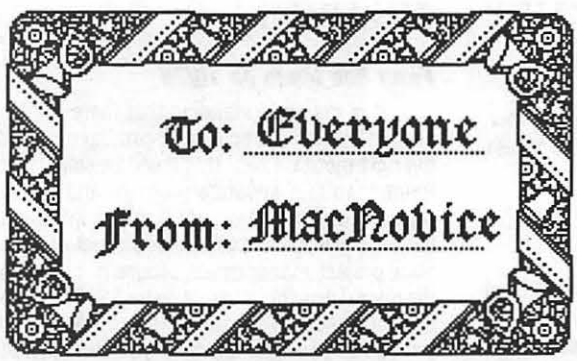
When I use DiskQuick to catalog my files, there is a list of about 15 files that are invisible and range in size from 2k to 118k. When I used ResEdit to see what they were all but two said that they did not have a resource file. For the two files that did, I opened up the information section and the boxes that were checked were: Locked, Invisible, and File Lock. The title of these files were: {}-162248964, {}-1622528749, etc. The numbers did not seem to increase in any specific pattern. There type was ZXVY and the creator is listed IBOP. Are these files important or can I trash them?

Also, the size of my desktop file is 192k. Is this a "Normal" size? Thanks in advance for any help.

From Bill Baldridge on 10/02

As usual, I (we) need more input to answer your question: What Mac? Hard disk? If so, how big? How many files? All these are needed to give a proper answer.

Invisible files are not necessarily anything to worry about, unless they're called SCORES, and reside in your System Folder (this was one of the "symptoms" of infection by the SCORES virus). Many applications create invisible files for use in housekeeping chores while they're being used. Most, if not ALL, should be removed once you Quit from the application, but some may leave invisible files for keeping track of usage or user parameters — this is very sloppy, and usually indicative/prevalent in freeware/shareware programs (not that this is any indictment of the genre). I wouldn't worry about it unless your Mac starts acting screwy or bombing regularly. The size of the desktop should not be much over 256K - this size would indicate around 1000 files and/or applications resident on a good size hard disk. If you do a lot of downloading/file swapping/garbage collecting it would probably pay to rebuild your desktop every once in a while.



MacNovice Column

by Ralph J. Begleiter

Now that the holidays are nearly upon us, here's part two of the annual *MacNovice Holiday Gift-Givers' Guide.* Last month, we highlighted a wide variety of gifts for the Mac costing less than $50. This month, the *Gift-Givers' Guide* offers suggestions for those prepared to spend more to make their Macintosh user's dreams come true.

(Comments asociated with all products are strictly my personal views. Price estimates are based on recent mail-order prices.)

- Keyboard ($140) - One of the major improvements in Macintosh hardware in the last year or so has been the availability of non-Apple keyboards for the Mac. The CE-105 or the Datadesk MAC-101 each offer better "feel" for the computer typist and many more keys than the original Mac keyboard. These keyboards improve functionality of your Mac, and, in combination with software like CE's QuicKeys ($55) can automate many routine Macintosh activities.
- Memory upgrade ($220 - $500) - As I've noted in past years, a memory upgrade is probably the most valuable gift you can give a Macintosh owner. These upgrades are available from several companies, notably Dove. They offer a noticeable improvement in speed of operation, and, in many cases, allow Mac users to take advantage of newer software which simply won't run on a smaller-memory Mac. Go for as much memory as you can afford. Don't stop at 1MB. You won't regret your decision.
- Accelerator Board ($600) - This is "computerese" for an electronic add-on which usually replaces the existing computer chip with one which is significantly faster, e.g. the Radius card for the Mac replaces the 68000 CPU with a 68020 with clock speeds of 16 or 25 mHz. By doing this, it "accelerates" the performance of the Mac noticeably. These usually come with extra RAM memory, too. For Mac users who hate to wait, an accelerator is a nice gift.
- Ergotron McTilt ($70) - This handy Macintosh support stand raises the height of your Mac about four inches and allows virtually unlimited swivel and tilt, making the screen much more comfortable to view. A solid piece of hardware.
- Modem ($125 & up) - Help your MacNovice discover the fun and utility of communicating over the phone by computer. Gain access to oceans of information on subjects from scuba diving to medicine and law via one of the major computer information services (such as CompuServe and GEnie). Modems are easy to use and to hook up. Don't buy one with a transmit rate lower than 1200 "baud" (never mind what "baud" means, just use it as your guide to purchasing a modem.) Modems costing $175 or even less are just fine. More expensive ones work faster and are a bit more reliable about transmitting data accurately. But unless you're transmitting critical corporate records, a beginner can get along just fine with a less expensive modem. Warning: A modem is useless without appropriate "communications" software (see below).
- Communications software - I strongly recommend MicroPhone ($120) or MicroPhone II, ($230) but good, less expensive software is available. These two programs offer the combination of ease-of-use and ease-of-learning plus the capability to handle much more complex data transfer sessions automatically later on.
- Hard Disk Drive ($400 & much higher) - This is a device capable of storing huge amounts of data. A good hard drive virtually eliminates the need for swapping disks in and out of the Mac's floppy disk drive. These drives are available in sizes ranging from 20 megabytes *(1 MB equals one million bytes)* to more than a hundred MB. As with computer memory, go for as much space as you can afford. You won't regret it. Don't stop at 20MB. Your Mac user will really appreciate this gift! Jasmine and PCPC offer drives with

1988 Gift-Givers Guide

excellent reputations for reliability and quality.

In the software category, there are so many choices available now that a gift-givers' guide can't possibly cover all the best programs. What follow are some software choices I especially recommend.

• FullWrite Professional ($275) - FullWrite is probably the most featureful word processor available for the Macintosh today. It contains many "Desktop Publishing" features and produces outstanding documents. It includes an integrated "outlining" program. FullWrite's disadvantages are its relative complexity and its computer memory appetite. If you want to produce truly elegant documents, complete with footnotes, multiple columns (even multiple column formats on a single page!), spell-checking, thesaurus, and similar features, FullWrite is a good choice. If, however, you must work with a Mac with less than 2MB RAM, do not get FullWrite.

• More! 2.0 ($175) A truly ingenious tool. Randomly enter thoughts, then reorganize them any way you like at the click of a mouse. Instantly creates organization ("tree") charts, and chart display presentations. Use it to create boilerplate language to sort and enter in your word processor. Creates and sorts lists. Strong "find" function locates text quickly.

• ReadySetGo! (4.0) ($279) - This desktop publisher includes all the bells and whistles you will need, and some you won't even need. Produces good-looking publications, and handles the LaserWriter well. It's fairly easy to learn.

• FileMaker II (Recently renamed from FileMaker 4) ($175) This program is an outstanding database. Flexible, easy to learn and use. Handles graphics extremely well. Duplicates and creates forms, form letters. Fast retrieval of records. (Virtually) no limits on the size of databases, records, fields within records, etc. Allows changing any characteristic after creation of a new file, without loss of previously-entered data. Easy exchange of data and graphics with word processors, graphic programs, other databases, etc. This is an excellent program.

• Canvas (Version 1.0 available, but includes free up grade to version 2.0 shortly) ($109) - Canvas combines the ease of drawing of "MacDraw" with the detail work possibilities of MacPaint into a single program. What makes Canvas stand out is that it comes in two formats, including a regular program as well as a "desk accessory." This means that while you are working in your word processor (or any other program) you can instantly call up Canvas at the same time to create or modify a graphic. Shares files easily with MacPaint and other programs.

• MacDraw 2.0 ($225) - This old standby drawing program has become a Mac industry standard. Newspapers use it to create their graphics and send them to other papers. MacDraw is easy to use and very flexible.

• SuperPaint *(version 2.0 available soon)* ($79) - Another graphics program which combines "draw" and "paint" features. Easy to use. Shares files easily with MacPaint and other programs.

• FullPaint ($69) - An excellent "paint" program, but lacks the ease-of-creation which is found in "draw" programs.

• Excel ($249) - Excel has set the standard for Macintosh spreadsheets. An extremely powerful spreadsheet, with macros and charting capabilities. Disappointing in its ability to make a "dressy" page presentation, but a new version is expected to be available within a year. Files easily exchangeable with other Mac and IBM spreadsheets. Highly recommended for any serious spreadsheet user.

• MacCalc ($79) - This simple spreadsheet program is a big step up from Microsoft's original "MultiPlan," but is not as full-featured as Excel. Files easily exchangable with other Mac and IBM spreadsheets. For the spreadsheet user who doesn't need all the power and macros of Excel, MacCalc is a real value.

• QuicKeys ($54) - This valuable utility allows any user to create "macros" (automated commands which perform common actions in series) in any Macintosh program. A "must" for any Mac user with an extended keyboard.

• Works ($179) - This popular Microsoft program "integrates" word processor, spreadsheet, database and telecommunications software into one program. Of all the elements, the word processor is the strongest. The database and telecom programs are quite limited in their abilities. Better spreadsheets are available for less. But, Works is a terrific program for a new Mac user and it's a good value.

• PowerPoint ($249) - One of the new genre of "presentation" programs, PowerPoint gives users the ability to create dressy overhead presentations as well as slides and slideshows on the Mac. An excellent program.

• ReadySetShow ($289) - Another version of the "presentation" genre by the makers of the page layout program called ReadySetGo! Also very capable.

• SUM ($59) - A valuable collection of utilities for the Mac user who ownes a hard disk drive. This collection can recover "lost" files and "crashed" disks. It even includes a program designed to keep track of the contents of your hard disk to speed recovery.

• WriteNow ($109) - A word processor one big step up from MacWrite. Does limited columns and has a spelling checker.

Any of these gifts will please a Macintosh user this holiday season.

Mac Q&A

OmiGawd !

My Hard Disk has a virus. What do I do ?

Q. What can I do when my hard disk has a virus ?

A. The first thing you should do is run to the WAP office and get, if you don't already have it, the latest disk of Anti-Virus Utilities (#16.07A). Read its documentation in depth and recognize that the only practicable solution for non-technically-oriented persons to rid themselves of the virus is to reinitialize their hard disks and floppies which may, in any way, have been affected. Of course it is painful for you to destroy your major application copies, but we believe that it is the only sure way to "un-virus" your disk.

Remove your critical files – and only your critical files, not your applications or System Folder contents - and reinitialize using the latest initialization software which you have.

- Use Apple's hard disk SCSI initializer (HD SC Setup 2.0,) if you do not have specialized initializing or formatting software which came with your hard disk.
- Drag copy the System Folder from Apple's System Tools, Version 6.0.2 onto your hard disk. If you are using a 512K or 128K Mac, use the earlier System/Finder version which came with your machine.
- Restart your hard disk and immediately install all of the anti-viral utilities – especially Virus Detective1.2 - into your System using the Font-DA Mover (currently version 3.8). Place Vaccine into your System Folder and restart your Mac. Use these and other virus detectors frequently.
- Check all of your original application disks to confirm that they are clean of viruses and then install them onto your hard disk. Do that with anything else you put on your hard disk.

Having a viral infection in your hard disk is one of the most stressful, anxiety-provoking things that can happen to you and your Mac. We urge you to take the hard and only safe way to rid yourself of this problem. In the future, though, know from whom you are receiving things and viral-check everything thoroughly before placing it in your machine.

Q. What can I do to get color slides or color output from my Mac even if I don't have a MacII or IIX which displays color ?

A. Dealing with color and color output is a specialized arena for most of us. IF your application is capable of providing "color separations" of your work, you can print a "picture" of each color's output. So if you are producing something for four-color printing, you will probably want to output up to four "colors." If you are producing something for color display on slides or projectors, you will probably be more interested in Red, Green, Blue (RGB) "separations."

There are numerous speciality shops that can inform you about color output. Decide which form of color medium you wish to output, speak to the "pro's" who deal with processing that kind of output, or take a course offered by WAP or another organization, and follow their instructions. For instance, many of the Desktop Presentation programs, such as Standout, PowerPoint and Persuasion, have tie-ins with slide producers. You can send your saved "slide files," either by modem or floppy, to them using their specialized software and receive your completed slides back within a very short time. Costs vary from about $6 - $15 for most normal slides for this service.

Q. Why do I get variations in fonts when I try to get something produced at a Service Bureau or when I use another Mac ?

A. Fonts have a long and honorable history with which the computer world is only beginning to catch up. Every typeface and size, generally simply called fonts within the Mac world (although that is technically incorrect,) is markedly different. Each font is a marvelous blend of technical proportion and esthetic artistry involving things such as X height, descenders, ascenders, and baselines. Let us apologize in advance for the lengthy response which our answer requires.

Within the Mac there are basically two types of fonts, those designed for output to the ImageWriter generally referred to as bit-mapped fonts, and those designed for output through some sort of page-description language usually using the specialized language known as postscript.

[A third kind of font uses a "hard-copy printer" rather than the Imagewriter or postscript fonts. These are the native fonts within the printer rather than those within the Mac. In other words, your Mac sends ASCII code or "straight text" instructions to the printer and uses those fonts built into the printer.]

Bit-mapped fonts need as many different point sizes as you can fit into your system. (A point is roughly 1/72th of an inch and a pica is 1/12th of a point; both terms derive from centuries old printing terminology.)

The Mac uses a point size which is twice as large as that which you want to have printed in "best" mode on the ImageWriter and sends these instructions to the pinheads contained within the printhead of your Imagewriter. WYSIWIG (What You See Is What You Get) is relatively accurate in that what you see in front of you on the screen is what your printed output will look like.

There are some very minor imbalances because there are slightly more than 72 points per inch while the normal Mac screen is only capable of producing 72 horizontal points of light (pixels) or dots on the screen.

The Imagewriter LQ uses three times the size of font desired and most non-postscript LaserWriters, such as the LW II SC, use four times the font size requested.

Laser fonts are a different world and can be separated into two types of font discussion, screen fonts and print fonts. Screen fonts can be of a very limited range of sizes because what you see on the Mac screen at 72 dpi (dots per inch) cannot be faithfully replicated on the postscript machine which uses 300 dpi, or 400, 1270, or 2450 etc., dots per inch. Even if you see "jaggies" on your screen, the postscript

language print font only remembers mathematical relationships and proportions for each letter and scales it to the size you request. In other words, you can request that a letter be laser-produced at 5 points or 127 points, and you will still get a rather clean, smooth version of that letter produced.

LaserWriters have specific print fonts written onto their permanent memory chips (ROM's) and you need not worry about having those print fonts within your Mac. These normally constitute about 11 families of typefaces and some 35 differing font styles (bold, oblique, etc..) There are thousands of other fonts also available to you and, while some of them are shareware and are on WAP disks, most of them are commercial.

When you purchase commercial or shareware LaserWriter (LW) fonts you need both the bit-mapped Screen Font and the Postscript description Print Font. The Screen Font is installed in your System (using the Font/DA Mover 3.8, or Suitcase, or Master Juggler,) and the Print Font is placed elsewhere in your machine – usually within the System Folder.

Complicating this world is that there are different versions of PostScript and different versions of fonts, and it is very difficult to tell which is the latest. For this reason, we recommend that you use the latest screen fonts contained within the latest System Tools Version6.0.2 by stripping out the older same-named fonts in your machine, and replacing them with the newer ones. If you send your output to a Service Bureau, they would prefer your sending them straight postscript versions (hold down the Option and F keys when you click OK to print on the LaserWriter print driver.) Alternatively, you can send them a copy of your System containing the screen fonts you used, although they may charge you more for the extra work this imposes on them.

Above all, if you use more than one Mac in your work, make sure that all of the Macs involved have the same, hopefully latest, versions of both screen and print fonts.

Q. What are Font ID's and how many are there ?

A. Virtually everything within the Mac has a unique resource ID number. Originally there were only 256 Font ID's controlled by a print manager. Occasional font ID conflicts occurred and some of us have had the problem of using a different point size of a font and having it show up as a completely different font, or installing a new font and having an older font "disappear."

To some degree this has been remedied by the use of new print Manager called NFNT, which expands the number of ID's which can be assigned to well over 32,000. Older screen fonts then need to have their assigned ID numbers updated to the expanded font ID numbers to avoid almost all chances of ID conflict.

Utilities such as Suitcase, Master Juggler and Fontastic have utilities which "fix" such ID numbers.

More recently programs such as MacDrawII and ReadySetGo!4.5, incorporate font names in addition to ID numbers to avoid any possibility of font ID conflicts. We will have to see if the font ID conflict issue becomes fully resolved by this technique.

Q. Can I clean my keyboard myself? I spilled coffee on it and it doesn't work any more.

A. If there is "foreign matter" in your keyboard, AppleCare will not cover its cleaning or replacement as this condition is deemed to be user abuse. Technically, you violate Apple's warranty if you open your keyboard.

If your Mac is out of warranty and you do not have AppleCare anyway, we recommend that you go to it. Turn the keyboard over, remove the three screws holding the board together and lift the "guts" of the keyboard out very gently. Remember this is a delicate piece of machinery, so be careful how you clean it. Pry off one keycap at a time (it takes some tugging sometimes.) Gently remove any debris and clean the keyboard with a Qtip and some alcohol. Replace the keycap. Repeat this for all keys; reassemble and try it out. If it doesn't work, you probably will have to buy another keyboard.

We recognize that our more technically oriented friends wince when they hear that we use alcohol. To placate them, we further recommend that you go to an electrical supply house (Radio Shack?) and get some terminal cleaner or a cleaner that does not leave a residue. Use that instead of alcohol.

Q. When I'm in Multifinder, and I copy something to the clipboard then bring out the scrapbook and Paste it, why doesn't it always appear? Generally it works the first time, but then if I bring the document back to the front, do another copy, click on the Scrapbook and try again, it usually doesn't work. Why not; what's going on?

A. Desk accessories are handled differently under the new system, especially when working in Multifinder. When you bring out a DA in Multifinder, look at the icon in the upper right hand corner. It will change from the icon of the currently opened application to that of a little suitcase. The DA is not being loaded into your application; rather it is being loaded into an Apple system program called the DA Handler found in the system folder. Put the DA away. Hold down the Option key and bring out the DA again. This time, you will see that the icon hasn't changed to that of the DA handler. If you are in Word, you will still see the Word icon even though the DA is open. This is the way to insure that the Copy and Paste will work between your application and the Scrapbook when using Multifinder. Bring out the DA with the Option key down.

COLOR PRINTING
QMS ColorScript™ 100
full-color Postscript copies, separations & transparencies, plus black & white LaserCopies
supported by the *NEW* Apple Scanner &
a Shiva NetModem AppleTalk port

PC RESOURCES LTD
1850 Centennial Park Drive • Suite 300
Dulles Access Rd. at Wiehle Ave. Exit
Reston, VA 22091 • (703) 860-1100

On the Trail of the Apple III

By David Ottalini

Apple III SIG Co-Chairman

Happy Holidays and Happy Birthday WAP!

As Washington Apple Pi celebrates its Tenth Anniversary, I'd like to take a little bit of this column to look back at our own roots within the club.

WAP was barely a year and a half old when the Apple III was introduced at the National Computer Conference in Anaheim in May, 1980. The III was the first computer to be designed in-house by Apple Computer. It was supposed to be a replacement for the Apple][, which Apple was afraid would not continue to sell well. The III was specifically designed as a business machine and Apple sold it in "bundles" with software and hardware.

For Washington Apple Pi, the first mention of the Apple III occurred in February, 1981 when Burton S. Chambers III wrote an article entitled *Flavors: Little Tidbits*. Orange was the color of his III comments. He said he wanted to wait before making a final decision on the machine until there was more software and bugs were worked out ("I'm sure it will be a useful machine some day"). III user Mark Cheren wrote the following month ("Here So Slowly Comes The Apple III") that he had gone through three Apple IIIs (due to early production problems) but still felt the machine had excellent potential. He wrote: "So, have I made a mistake? Frankly, I don't know yet."

The first call for a III SIG within Washington Apple Pi was made by Charles N. Dow, in the April, 1981 Journal ("The Not-Too-Slow Apple III Is Great!). Dow, untainted by the Apple][, was a bit more exuberant over the III and its possibilities, writing that "the Apple III, I have confidence, will be a great business asset, developed from the experiences gained from the Apple I, II and all other sources."

It took ten months more, but in February, 1982, Dow (the first "Pro Temp Chairman) gave the official announcement that a III SIG within WAP had been formed ("Update On the 'Big Apple' III"):

So herewith we unilaterally establish a group and invite all of the members who are interested in learning more about the newest APPLE and the smallest Users Group (there are six members that I have been in touch with personally).

The June, 1982 Apple III article came from Ronald Askew. He reported the third meeting of the SIG occurred April 15th at the Walter Reed Army Medical Center, adding that 11 of the 20 IIIers in WAP had attended. Askew also reported that SIG librarian Michael Konvalinka had "collected virtually every important article, ad and publication referencing the Apple III and relevant hardware and software."

In March, 1983 came the first, and only, complete review of the III done in the WAP Journal. "A Report Card On The Apple III: Does It Merit A Passing Grade? was written by William C. Jacobson. The bottom line for him was that the (now) two-year-old Apple III got a "qualified passing grade." He was particularly upset that the III had such a poor implementation of CP/M and called for an upgraded emulation disk to handle 64K and upper and lower case.

> ***"WAP was barely a year and a half old when the Apple III was introduced"***

By May of the following year, Bill Hershey had been elevated to SIG Chairman, the first "official" leader of the SIG. In July, Hershey reported that the SIG now had 73 members! He also reported that an Apple Rep assured the members of Apple's "continuing commitment to the III."

Midway through 1984, the SIG had gained a Co-Chairman in Jerry Chandler. And in January, 1985 Bill Hershey officially made way for Bill Rosenmund as co-chair. Throughout 1985, SIG Secretary Charlene Ryan kept the III's flame burning in the Journal. She reported in January that despite the bad news about the III being discontinued, the SIG was alive and well and members felt the III was still a great computer. Over the course of the year, the club continued to meet, held a few tutorials and even surveyed members by mail. June, 1985 marked the debut of this author in the WAP Journal. Since that time, he has not missed publishing at least one article each month!

By 1986, the author had also taken over for Bill Rosenmund as co-chair and Jerry Chandler quit. Tom Bartkiewitz ultimately agreed to co-chair. In July, 1986 SIG Librarian Al Lambert announced our first four public domain disks. We now have a total of 40! We've also gotten 3 Apple IIIs donated to the club for use by the SIG along with additional hardware and software.

The Apple III may be an orphaned old lady, but she continues to work just fine, thank you. We continue to gain new members as companies sell their IIIs to home users. Providing support is our best opportunity for service and we look forward to working with all III SIG members in the future, as we have in the past!

III SIG Christmas List

Since my good friend (and fellow CNN co-worker) Ralph Begleiter offered his holiday gift-guide for the MAC folks last month, I thought it only right to do the same for our III members this month. The universe of Apple III products is still large and the prices are excellent compared to what new equipment and software costs today. Here are some of my hardware choices:

- 512K Memory Upgrade (ON THREE). Sold now with options of 0K of memory, 256K and 512K. ($159.95/$299.95/$399.00)
- Seikosha Color Printer with Interface Card and Color Graphics Manager (ON THREE). At $259.95 this is a great buy for IIIers interested in an inexpensive way to print in color.
- Titan III+IIe (SUN REMARKETING). The Titan cards are an excellent investment in the future, allowing you the luxury of running most IIe software on your Apple III. RAM disk software in our PD library makes it even more useful. ($299.00)
- Hard Disk Drives. Your Apple III was made to sing with a hard drive. Many are still available, including 5 and 10 MB ProFiles, the Quark QC20, and the Sider 20MB (SUN REMARKETING/ON THREE). Check the papers and the back of Computer Shopper for better deals.
- 800K Disk Drive. If a hard disk is too expensive, how about an 800K drive instead? ON THREE sells

both the Apple II UniDisk drive with interface card and software ($499.00)(or just the driver alone if you want to buy it locally)($50.00). A better deal may be the Central Point Software 800K drive and card with software (also ON THREE) that lets you hook up any 2 MAC 800K, 400K or Apple II 140K drives ($399.00). Card and software alone also available ($149.00).

- Modem. Any modem now on the market will work with your Apple III. One that is "Hayes Compatable" would be best. Check the WAP Office for their group sale price for a 2400 baud modem.
- Trackball III. Developed by Dale Sykora, this is a Mouse substitute that will work within ANY Apple III application. Great for graphics programs.(ON THREE $89.95)

On the software side of things, my choices would include:

- Just about any disk from our III SIG PD library (the best bargain in town at just $3.00 each!)
- ThreeWorks. This is an encyclopedia of Apple III information on four double-sided disks. Requires 3EZ Pieces or (on the Apple II) AppleWorks. (ON THREE $39.95)
- SUN REMARKETING sells a number of commercial Apple III software products at discount prices. Among them is AppleWriter 2.0 that contains all the excellent manuals for the program. 4.1 version is available in our PD library.
- ON THREE sells a number of excellent programs, including the Desktop Manager background utility, Selector III for hard disk users, a number of games, Draw On III and Graphics Manager graphics programs. A new offering is Sideprint, a program that will print spreadsheets sideways. Also, for new users, the Beginners Pack is an excellent buy at $99.00. New Public Domain Disks

Your III SIG PD library grows by four disks this month. That brings our total offerings up to 40. The additions this month are described in detail in a separate article. But in the meantime, here's what you'll find:

- Three.SIG.1037 CustomFONT Manual
- Three.SIG.1038 CUSTOMFONT Program Disk
- Three.SIG.1039 Font Disk #1
- Three.SIG.1040 Ottalini Articles Disk#1

All are available now in the WAP office for only $3.00 each. I think you'll find CustomFONT to be a fun program to use. It will allow you to create custom fonts for your III and (with specified printers) even print them out. The Font disk will let you see on screen all the different fonts we've included for you. There are two sides full of fonts, including some converted Apple][fonts and a number of foreign language fonts. The 1040 disk includes many of the early articles this author published in the WAP Journal. More compilations will be forthcoming.

Looking to the future, the new year will bring with it CAP'N MAGNETO, a game program that makes heavy use of fonts, some additional disks by Dr. Al Bloom, two Apple II emulation disks, more Basic utilities programs and much, much more. I am also working on a disk with Apple III repair articles, tips, etc. Any contributions welcome!

Basic Extension Revisited

Our PD Disk 1031 contains a number of useful Basic utilities that can help you speed up and improve your Business Basic programs. As relayed on the III section of MAUG (Micronetworked Apple Users Group) on CompuServe, they are powerful utilities you Basic programmers should get to know.

As an example, Pair Software's Frank Moore says he "set up the MATRW.INV module, which writes BINARY files, to write 100 records to disk, then read them, followed by a WRITE for a data file for 100 records, then READ back in. The results were:

- MATRW.INV DATA File (WRITE 100 RECORDS)
- 13 seconds (!!) 47 seconds
- (READ 100 RECORDS)
- 6 seconds 19 seconds.

The disk also contains many other invokables you'll find very useful.

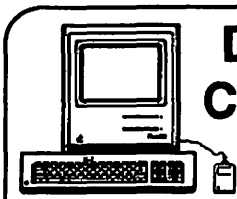
Speaking of Pair Software, the SIG recently received another flyer that indicates continued support for the Apple III. Pair offers a long list of public domain software (although prices are higher than from other sources) as well as commercial software products. For more information, write Pair Software, 3201 Murchison Way, Carmichael, CA. 95608. Phone number is (916) 485-6525. As I have mentioned in past Trail articles, Pair has had its troubles over the past couple of years. I would appreciate any feedback from SIG members who gain "new" experience with the company.

III's Company BBS

Ed Gooding's III's Company BBS has been down of late. Ed wanted to upgrade to a 2400 baud modem and change BBS software. But Infonet, the new BBS program, couldn't handle 2400 baud. So, Ed had to do a little hacking to make it work. He says things are back to speed now and you can logon without any problems. It was going to take a bit longer to port (move) all the old III's Company files over. That should have been accomplished by the time you read this, however.

Finally. . .

I want to wish everyone a joyful holiday season and a happy 1989. The WAP has a number of challenges to face in the coming months. Let's all work to ensure the health and future of our user group!



Desktop Publishing Comes To Bethesda!

Desktop Perfect™

A Division of BackOffice Publications, Inc.

Newsletters Pamphlets
Logos Announcements
Business Forms Resumes
Flyers Business Cards
Advertisements

Call 654-4130

Apple Pi members get a 15% discount!

Apple's Taylor Pohlman and GS Basic: Part 2

Transcribed by John Lomartire
Edited by Dave Ottalini

(This is the second of two articles detailing GS Basic by one of its developers at Apple Computer, Taylor Pohlman. His comments were made during a session at the Phase III Conference (October, 1987) in Chicago.)

GS Basics

We tried our best to be backwards compatible with Apple III Business Basic. In that regard we support all the key features of that language including the data file structures (as well as the) INVOKE and PERFORM interface. We support CONSOLE, .PRINTER, and all sorts of character-oriented IO devices so you can do the redirection you know and love. That way, you are able to go to printer or go to disk, within the limits of ProDos at least.

We built an interface up so it looks a lot more like SOS in ProDos from the standpoint of usage. We added a lot of new features in the command language, for example a COPY command, a built-in RENUMBER, a number of other utilities that make the command line interpreter in GS BASIC a very friendly way to work the operating system. Much nicer than standard ProDos usage. The language is also fully compatible with the FINDER so we can launch BASIC applications. By clicking on the program file it will automatically launch the interpreter for you and boot the application.

In fact, at this time we don't even have the standard HELLO-type program interface. But we revamped the Business Basic EXEC capabilities and a lot of these features. You can now also have an EXEC startup as well as an HELLO startup. It's possible to start up an EXEC file at boot time which is pretty handy if you're doing serious business applications.

There are a lot of commands and a lot of language features that parallel Business Basic. We continue to support 64 bit integer type, for instance, scale function and all the rest of the stuff for math. We've considerably enhanced the numerics environment by putting in a number of new data types. We support, for instance, a 32 bit integer type which enables you to deal with pointers directly and makes a much nicer interface to the rest of the system, not to mention the fact that a lot of arithmetic, integer arithmetic, now works.

We also integrated the math in such a way that you don't have to worry about real-long integer types being compatible. Now complete mixed mode operations work. The MOD function works everywhere. We built the whole numerics environment on top of SANE. I think it was done in a very clever way. In expression evaluation now, in the language, we maintain a concept called the "type of the expression". That means that if you're doing integer expression with just small numbers, say small scale constants, it's going in the integer math pack in the GS. It's extremely quick. We also tokenize this function now at entry time, so constants don't have to slow the machine down.

In fact, you get a real payoff in this machine for using the integer type. For/Next loops execute six times faster if they are integer than if they're floating point. That makes a significant difference compared to the performance on the III in that mode.

In fact, on the III you paid a performance penalty for using integer, although not a lot of people knew that because the system first converted the integer to floating point and then did the calculation and converted it back to an integer. In this expression evaluator we don't drop into 32 bit integer or in floating point until we have to. So any complex expression will be evaluated at the lowest common denominator or arithmetic until it's time to pump up. We actually started calling that degenerative arithmetic but it's sort of the opposite. Actually it's sort of a smart expression evaluator.

The other thing we've done is data types. I already said we implemented the different integer types. We implemented 32 bit floating point arithmetic. We have a 64 bit floating point type so you get the accuracy. You deal with this basically with all the same tools inside the GS. We also, internally at least, support the full 80 bit extended type. So you can store and restore that in expressions and do comparisons (but there's not an extended type in the language). In addition, there's one other data type in the language you assembly guys will enjoy and actually almost anybody else, too, which is a concept called "structure" that is basically an unsigned byte array.

One of the important things about arrays in GS BASIC is we've removed some of the old Apple III limits. Arrays can now be 4 megabytes in size. You can have as many of these as you have memory. That's handy because with block file access to the disk you can then have a COPY command. You can write about a five line program which sucks an entire disk into memory and spits it out on another one. You can structure arrays. It's kind of cute. This is pretty fast too. The idea of the structured data type and a command called SET you have like the old GET and PUT in Microsoft BASIC, basically allows you to store any kind of structure including strings or numeric type into structured arrays in various spots. It gives you a general idea, like bit maps for instance, because you can declare a structured array to enter into the memory. We have an extended PEEK which basically lets you (instead of PEEKing one byte at a time you can) PEEK a type or you can PEEK a structure. Your ability in BASIC itself begets you other kinds of data and manipulates them a lot nicer.

PEEK and POKE are back in the language. Actually you can assassinate me for that. I had PEEKs and POKEs ripped out of Business BASIC on the theory that the first invokables that anyone would write would be PEEK and POKE invokables. Sure enough that is what you did. The second thing was I really wanted to encourage — the Apple III and the GS like it — are very complex machines. You kid yourself if you think you can PEEK something and expect that value to be worth anything, except maybe at zero page, for any length of time. In particular in GS BASIC implements, it's very comfortable within the memory management structure of GS. That means, for example, there's a program segment, several data segments, anything else it uses, memory segments, as opposed to grabbing the machine like Business BASIC did. That means for example, when there's an ability to run multiple applications in memory, we can mix. In fact, it enables us to run multiple COPY's in GS BASIC.

So we had to cooperate with the memory manager. That means that there's no way to predict where a par-

ticular program is going to be because it can get moved around. So we have this giant disclaimer in the thing that says, well you can do PEEKs and POKEs if you like it but don't believe anything you hear. Particularly don't use any value more than a few microseconds at a time. Yea, there's PEEK and POKE in the language.

Particularly there's also support for C strings, Pascal strings, and other kinds of string-based structures. In using the structure type we can basically map onto other kinds of string structures. That means you can CALL the ROMs like they ought to be CALLed using automatic interface. In fact, invokables now are truly string quantities, which you can handle using a string parameter. To do that, we do all the fix-up between what the ROM knows about strings and what we know about strings and what BASIC knows about strings. There's quite a bit of work in there to make sure that all that, sort of fuses. Anyway, I think you will enjoy the "Structure" type and it does give a nice interface to some of the other capabilities.

We did not expand the string pool. It's still 64K, maximum number of strings available, but there are structures for storing string-like arrays if you want to do that construct and quickly convert back and forth. And for people who need access to the system (if you remember Business BASIC had a few short hooks that let you get out from assembly language and find some things that you needed), GS BASIC has a complete set of entry points and a well documented zero page. You can call the floating point accumulator, call the math pack, you can do the kind of invokable, for example, from matrix arithmetic that people really wanted to do with Business BASIC but couldn't.

In fact, you can even call the interpreter, ask it to find a particular line number for you and execute that line and then go back to the assembly language routine. That's fairly good control back and forth. In fact, this is one of the ways Taskmaster works. I'll talk about that in a minute when I get to access to the ROMs and tools. Basically we've taken Business BASIC and in the area of data type and access to memory and so forth, extended it significantly. By building a sort of SOS-like character file interface on top of it, we've been able to convert programs a lot easier than you would if they had to say, "Oh my gosh, now I have to deal with ProDos" which is sort of a different animal, as we are all aware.

We mentioned just a minute ago access to the ToolBox and ROM. Basically what we've done there is extended the concept of PERFORM which was the old way to get to results of the module, through a new service called CALL. And CALL can be either spelled out or simply underlined. So if you want to write programs that actually look like you see them in the ToolBox reference, you can do that. We support parameter passing and there is a mechanism through something called the TDF file, which is a new concept we introduced in this language. TDF file, or ToolBox Definition File, enables BASIC to know what the structure of a CALLing mechanism is for Tools. And there are TDF files available for all the currently available tools.

What that does is allow BASIC to know what the parameter list looks like, what the types are, so it can check your CALLs to the ToolBox and it can also fix up the parameters in such a way that the ToolBox gets the proper stuff it is expecting. And that interface, basically, allows us to support any tool as it comes out with proper tools and direct ROM. And we CALL the Tools Locator and do all the right stuff so we're compatible in that environment. We use that same mechanism in the capabilities of the H & W Assembler to extend INVOKE/PERFORM in such a way that PERFORM can now do the same type of thing (parameter type checking and so forth). So that, your odds as a programmer using somebody else's invokable incorrectly and not being able to figure out what's going on, are greatly reduced.

The other thing that we've done to the language that will help people use it in more friendly ways is to really rebuild the syntax checking completely. I know those of you who have typed in a line noticed that GS BASIC really doesn't care where you put tokens. [Tokens are the so-called "reserved words" in BASIC like PRINT, LOAD, LIST, etc. — J.L.] You can just throw them anywhere. If you use the right word it doesn't matter what the order.

We've completely redone the interface. Now we have a concept of nouns, verbs, and adverbs in terms of the way the syntax of the language is used. And if you screw up the language it will tell you how. (Going to the GS Now) I think this will work. OK, good old familiar prompt. For those of you who have been around we didn't change that. We thought you'd feel happy, besides we couldn't come up with anything we liked any better. Worst decision of a Product Manager or other to bring up is, "What shall we use for a command prompt?" "I don't know. What do you think?" OK, something you'll like.

We've got an edit line now that is actually three lines long, can edit three full BASIC lines, and guess what, all the insert stuff works, and when I decide what I want to do with this I just hit RETURN and it accepts that line as entered. So you have complete add-line capability built into this. You can even do multiple edits, you can do auto-renumber, and you can enter lines like that. You edit back and the line is returned.

Notice the little caret. We drop the err message down one line and we put a caret where the syntax scanner finds the problem. For those of you who are jocks that helps a little bit, but for people who use the language like students and so forth, they're going to find that a lot more friendly. And because we do adverb, noun, and verb kind of checking, we know where things are out of sequence. You will catch a lot more syntax errors than were ever caught before.

Notice the "Library" command. That's our way of loading into memory the ToolBox Definition File. Libraries allow you generalized access to interface definitions for external tools. Once a library is loaded in, the TDF file by the way of APPEND continues to build a giant library of all these entry points. Once those entry points to tools are defined (notice the "Dispose All Desks", "Start Up Window", "Start Up and Refresh Desktop"), you use those names. The names are present in the TDF files, and how to CALL that tool, all that information is in TDF. So once we do that you can begin to use those ToolBox CALLs as if they were just new parts of the BASIC syntax.

The GS Tool Members Guide is an indispensable tool honestly in writing this kind of stuff, because we don't document it in the BASIC manual. We just tell you that this stuff exists and go there to find out the definitions. All these things are available.

In fact, notice another thing too. ON-BREAK/NO TRACE can go to shutdown. Couple of things you might be interested in, in that light. One is,

ON-BREAK is the CONTROL-C disabler. You can build exceptions on BREAK and you can do BREAK-ON and BREAK-OFF. CONTROL-C now interrupts an input statement without you're having to press the carriage return and all that other nonsense you never can remember to do. Notice it goes to shutdown.

We implemented LABELS, that can be used anywhere a line number can be used, in any jump statement. In fact, you can write your program in such a way that no line number references are used at all. In fact, Tom Leonard of TML Systems, of whom you may have heard, has actually demonstrated a prototype compiler already.

Now that this syntax is set we can think seriously about doing acompiler for this language. And I think that's pretty neat too. The pointis we built, in effect, LIST options that allow you to list out without linenumbers then you can pass it by the compilers. We also eliminated a numberof features from the language so the compiler could be portable. Forexample, there's more Delete Lines on the fly. It takes an immediate modecommand. I argued with them back in 1979. That should have been taken outthen. It's a pretty terrible idea. There's a number of other minor thingslike that that we've eliminated that would fit the immediate mode command butyou could also do them in deferred mode, that will enable the compiler tomake sense of what is going on. It's a little tough to tell a compiler to read a number of lines of code for itself and merge a few more infrom a file and so forth. A lot of thought has gone into this to make sureit would be reasonable to build a compiler. We made a run-time system aswell. So we would be able to create programs and ship pre-labelled ones. Infact, a run-time system will do two things.The first thing it will do is pack the program and replace all of thereferences, line number and LABEL references, with absolute addresses. Excuse me, I should have said relative addresses, anyway, offset. So itmakes it a little tough for people to figure out what's going on. It alsomakes it EXECUTE significantly faster. There's a token there for anabsolute jump as opposed to a line number/label reference. We do a lot ofpre-scanning too, on LABELS especially, certain kinds of LABELS.In addition to implementing the CALL mechanism through the library, westill need to INVOKE and PERFORM as I said before. We have a couple of new mechanisms that make structured programming handy. First there's a real PROCEDURE capability. A PROC with multiplearguments, a multi-line procedure including multivariables and you can useglobal variables, of course by not declaring them Local in the procedure. Allarrays are global throughout the entire program, so it's very easy to doargument passing, set values, and so forth. Multi-line procedures are very handy. Finally there's always been a classic problem with GOSUBs, or whatever. How to give people interesting things to use without them screwing them up very much. Well now you can do three reasonable kinds of procedures. These procedures can CALL functions and CALL other procedures in a recursive way. It can CALL itself too for that matter. So we do support recursions essentially at any level.

In addition to procedures, we have multi-line FUNCTIONS with argument passing. An external function interface, the old EXFN interface in Business BASIC, has been beefed up significantly so that external functions can now be typed and used almost in any environment. In fact they can return strings, for instance. They can return any data type. So there's a lot of stuff that enables structured programs from a procedure-oriented standpoint. The other thing we've done that really helps with structured programming is implement DO/WHILE and UNTIL. So you have a full capability there to impact decisions. You can do DO, DO/WHILE, WHILE logic expressions and UNTIL logic expressions in relatively any combination of those. In addition we are supporting in a limited way, multi-line IF/THEN/ELSE. As long as a follow up line starts with a THEN or ELSE you can NEXT any logical level. It's explained fairly well in the manual. The old Business BASIC would let you NEXT IF/THEN/ELSE statements but after about 150 characters or so you sort of lost track of which was which and so forth. This will allow you to build things so they will look nice in the program. We've really tried to modernize the syntax of the language, bring it up to (the present). (Business BASIC at the time was one of the most advanced BASICs on any micro, I'd say. I liked it a lot better than Microsoft BASIC A for a number of reasons.) So we tried to do the same product response in 1987. What did this BASIC have that wasn't there before? In a way it's pretty familiar. The old standard implementation. People who have used other BASICs will notice these things work kind of like you expect them to. IF and ELSE isn't quite as nice as it could be but it's a lot better than it was and it's really straightforward to implement. BASIC by the way, has grown. Those of you who are used to the old 25K assembler file — interpreter file — will now discover Business BASIC is right at 60K at this point and growing ever so slightly with every beta version.

In terms of beta release Apple has it now. It's pretty stable. We haven't really seen a major crash, bug, or anything like that in some time. And so, for development purposes, just as long as you sort of judiciously save, chintzing is no serious problem. ToolBox interface looks pretty solid too. The only thing we can do for this is work with it.

I think I mentioned in talking about the ToolBox and ROMs, structured programming and such, that one of the most important parts of being able to give the kind of program I just showed you with reals and so forth is our interface to TaskMaster. And the way TaskMaster works, once you've set up your window definitions, your menu definitions and basically your environment, then it manages the events for you and interrupts you only when certain things happen. Now what we've done is built an interface, GSMaster, that allows you to put BASIC line numbers or LABELS into an array. And so when TaskMaster has something for you that your program needs to deal with, it will appropriately jump to the right part of your BASIC program, makes it do a GOSUB or a CALL to do effectively a GOSUB to whatever routine you provide to link into that key development. Let's say, for example, in the case I showed you, I have on one of the menus Windows #1, #2, #3, #4. Now there are routines that basically handle that message. So they bring to TOP — the Window command can be issued by picking up the menu pick and then dispatching again the appropriate Tool CALL. In that way we've enabled a very fast, clean interface to TaskMaster while leaving most of the tricky stuff in the interface behind. Otherwise there would be no way to really do it in an interpreted language like BASIC. On the other hand if you judiciously use the capabilities, it's really pretty straightforward.

Seekin a PC?

Now virus-protected 3 ways!

Choos Smart Computer

by Bud Stolker

] you shopped for an IBM-compatible computer lately? Then you] ay have noticed how difficult it has become to select a PC these days.

Buying decisions used to be a breeze: color or monochrome, hard disk or floppy, AT or XT. Now you must choose from among four different microprocessors. There are two operating systems with several branches and "environments." Three system busses with a fourth just announced. Four kinds of floppy disk drives. Four graphics standards running on six kinds of monitors. A bewildering array of hard disk options. And dozens of tape backup systems, none of them standard.

The multiple paths of personal computing, which for a time appeared to be converging around IBM and Apple, are beginning to branch and twist once more.

Wherever you shop, you wind up comparing apples with oranges—and lemons.

No wonder confusion reigns.

We can help you make an intelligent choice. Our specialty is custom-tailoring computer systems to the particular needs of our clients. We can help you sort through the clutter and plot a future course for you and your system. We can help you determine where and how to draw the line—and stay within budget. We can help you pull together a top-notch working system that does not compromise value or performance.

In the lingo of the personal computing industry, Landmark Labs is a Value-Added Reseller (VAR). We make sure your computer requirements are appropriate. We then take standard parts and build or modify a system to your specifications. We provide and install appropriate programs, and help you understand them—without charge. We back our systems with free training, ongoing support, extraordinary warranties, personal service, and a strong commitment to value and satisfaction.

We do this at prices as attractive to home computer users as they are to business, government, and institutional buyers.

We'll be around after the sale, too, to make sure you stay up and running. We believe in our systems and we believe in our clients. Our success is due to people like you: intelligent, computer-literate, value-conscious.

We stay in touch with PC technology in order to serve you. Our goal is to give you the greatest payback from your investment in a PC. Whether you want the hottest new computer or a basic floppy disk-based PC, we take pains to make sure you get your money's worth.

So give us a call when you're ready to buy a personal computer or upgrade your existing system. Ask us for a free consultation. We may have a solution just right for you. (If not, we'll tell you.) Check with us and see if you agree that *a custom-tailored personal computer from Landmark Computer Labs is the best buy you can make.*

Landmark Computer Laboratories
Suite 1506
101 South Whiting Street
Alexandria, Virginia 22304

Telephone (703) 370-2242 ☎ SourceMail TCB076

IBM PC, PC XT, PC AT, and Micro Channel are registered trademarks of International Business Machines Corporation.

MacHeaven™

Your source for all things Macintosh !™

- We ***BUY & SELL*** used Macs & Mac peripherals
- We ***RENT*** Mac systems
- We ***SERVICE*** Macs
- We also sell ***NEW*** Mac peripherals*, including:

- **SuperMac**
- **Jasmine**
- **Levco**
- **Everex**
- **Seikosha**
- **Olympia**
- **Dynamac**

The Best Prices in the Metro Area !!

* Call us if you'd like ***your*** product featured...

(703) 263-2567

14101-D Parke-Long Ct, Suite 206, Chantilly,VA 22021

"Providing Good Homes to Experienced Macs Since 1987"™

Exploring Fractals and Chaos

Six programs reviewed

by Fred Seelig

If you've been awake this decade you've probably bumped into the word *fractal*. You've read about long-haired math professors getting glassy-eyed looks when a New York Times science reporter asks them about fractals. You've browsed the Post Science column that talks about how fractals are related to knots and strings and superstrings and black holes, and other sewing terms, and why they could explain the Big Bang theory. You've been thinking that you perhaps ought to get the jump on your seven year old kid who may be learning about fractals any day now, and who may be asking you a fractal homework question. You'd look awfully foolish if you didn't at least know if a fractal was a noun, a verb, an adjective, or if it could be painted or taxed or bought at a Hechinger's.

Another term you may have picked up is strange *attractors*. You may have wondered it this refers to the SWM Seeks OversexedYF ads in the back of the *Washington Times*. It does not.

Perhaps you've decided, over a morning coffee, that it's finally time to learn what a fractal is, and whether it would make for good bridge club conversation. You suspect it probably won't, unless your bridge partners are all Bell Laboratories rocket scientists. Your suspicions are well-founded.

Well. This is not fractal primer, but you are going to learn about public domain programs that illustrate what fractal shapes look like. You can download them off an electronic bulletin board and experiment with them at your leisure. Pretty soon you'll be dropping phrases like the Hausdorff set, Duffing's equation, the attractor of Hénon, and Feigenbaum's constant, which every pimple-faced U. Maryland computer science freshman knows is equal to 4.66920160910299097... and which is of absolutely no use to anyone. You'll know that Poincaré maps are not what you pull out of the glove compartment when someone asks, "Do you know the way to Poincaré?" You will want to go get yourself a handsomely illustrated coffee table book, like reference [1], and see what fractals are all about.

Reviewed here are six programs: MandelSANE, MandelZoom Mac, MacMandelbrot 0.9, SuperMandel-Zoom 1.01, 3DFractal, and Chaos 1. They all explore aspects of the new branch of mathematics which includes fractals and strange attractors. If you've read the recent best-seller *Chaos*, by James Gleick [2], you're already familiar with these terms.

Before we get started, you're probably wondering why all these crazy programs have Mandel in their titles. The reason is that almost all of them are named for a pudgy French mathematician by the name of Benoit Mandelbrot, who wrote a primer on fractals [3]. Lots of mathematicians, as I understand it, kind of snicker when his name is mentioned, since they think he's not really a 'correct' sort of mathematician. Benoit Mandelbrot is a fiftyish year old mathematician and IBM Fellow who got the ball rolling in the 1970's with his work in fractal geometry. The only thing incorrect about him, far as I can tell, is that he's a Fellow for the Wrong Computer Company.

Ready? Okay, let's look at what's available out there in public domain-land.

MandelZoom Mac

MandelZoom Mac is the most lean of all of the fractal programs. It was based on A.K. Dewdney's article in the Computer Recreations column of the August, 1985 issue of *Scientific American* [4]. OPT-CNTL-P

It doesn't have much of a user interface. To get started you select the Start command under the Run menu. The dialog box of Figure 1 appears. You can change the coordinates of the upper left hand corner and the length of the drawing appearing in the graphics window.

The Mandelbrot set is drawn, pixel by pixel, over the area of the complex plane defined by the dialog box settings. Each drawing takes over two hours to create on a Mac Plus or SE. You can pause and resume the drawing at any time.

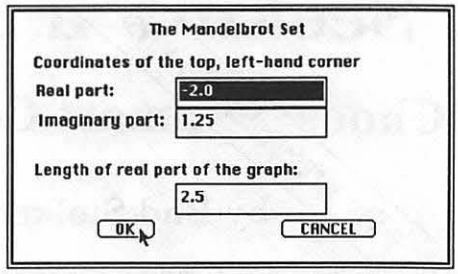


Figure 1. MandelZoom Mac dialog box.

You can change the drawing window dimensions, in pixels, using the Resize command. You can't change the criteria for convergence (the crucial part of the fractal algorithm).

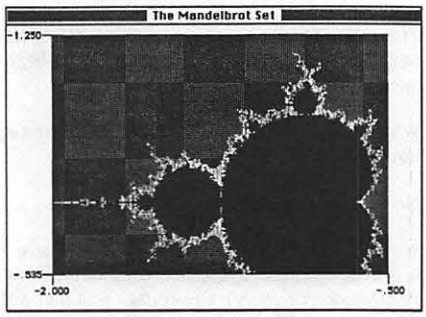


Figure 2. MandelZoom Mac fractal drawing. Drawing time: over two hours on a Mac Plus/SE.

You can't save the finished drawing directly, nor can you place the drawing onto the clipboard. See the section entitled, "Saving Your Work Using Screen Dumps."

A nice touch is that images are saved in an off-screen memory buffer. This means that you can open DAs and other windows on top of MandelZoom's drawing window, and when you close them the window will not have been erased.

MandelZoom Mac
Glenn R. Brown
6532 Opal Drive
Odessa, TX. 79762

MandelSANE

MandelSANE does the same things that MandelZoom Mac does, and it adds a few more bells and whistles. Like MandelZoom Mac, it was inspired by Ref. [4]. OPT-CNTL-O

As soon as you open MandelSANE a window appears with the title x:[-2.10,0.75];y:[-1.50,1.50]. The title tells you the range of complex numbers over which MandelSANE is calculating. It automatically begins drawing into the open, initially blank window. You can stop the drawing by clicking anywhere

We Have Great Prices on Linotronic Output with 24 Hour Service

No Contracts No Hassles No Kidding

301/424-3942

MacTography & P.M. Graphics Inc.

326 D North Stonestreet Avenue, Rockville, MD 20850
FAX: 301/217-9780 BBS: 301/424-6150

on the screen. Continue and Restart commands are found under the Calculemus menu.

Drawing times are slow, especially where there are large areas of white spaces (where the fractal algorithm does not converge). Figure 20 minutes to over an hour per drawing.

which it will draw, and it will begin drawing. Help notes tell you to use a small window to gain speed at the cost of resolution.

As with MandelZoom Mac, you cannot save any work using the Clipboard. See "Saving Your Work Using Screen Dumps."

MacMandelbrot 0.9

MacMandelbrot 0.9 has lots of menus and looks like it should be pretty good. Figure 4 shows MacMandelbrot 0.91's version of the fractal landscape. It uses different shadings to separate differing regions of convergence. The

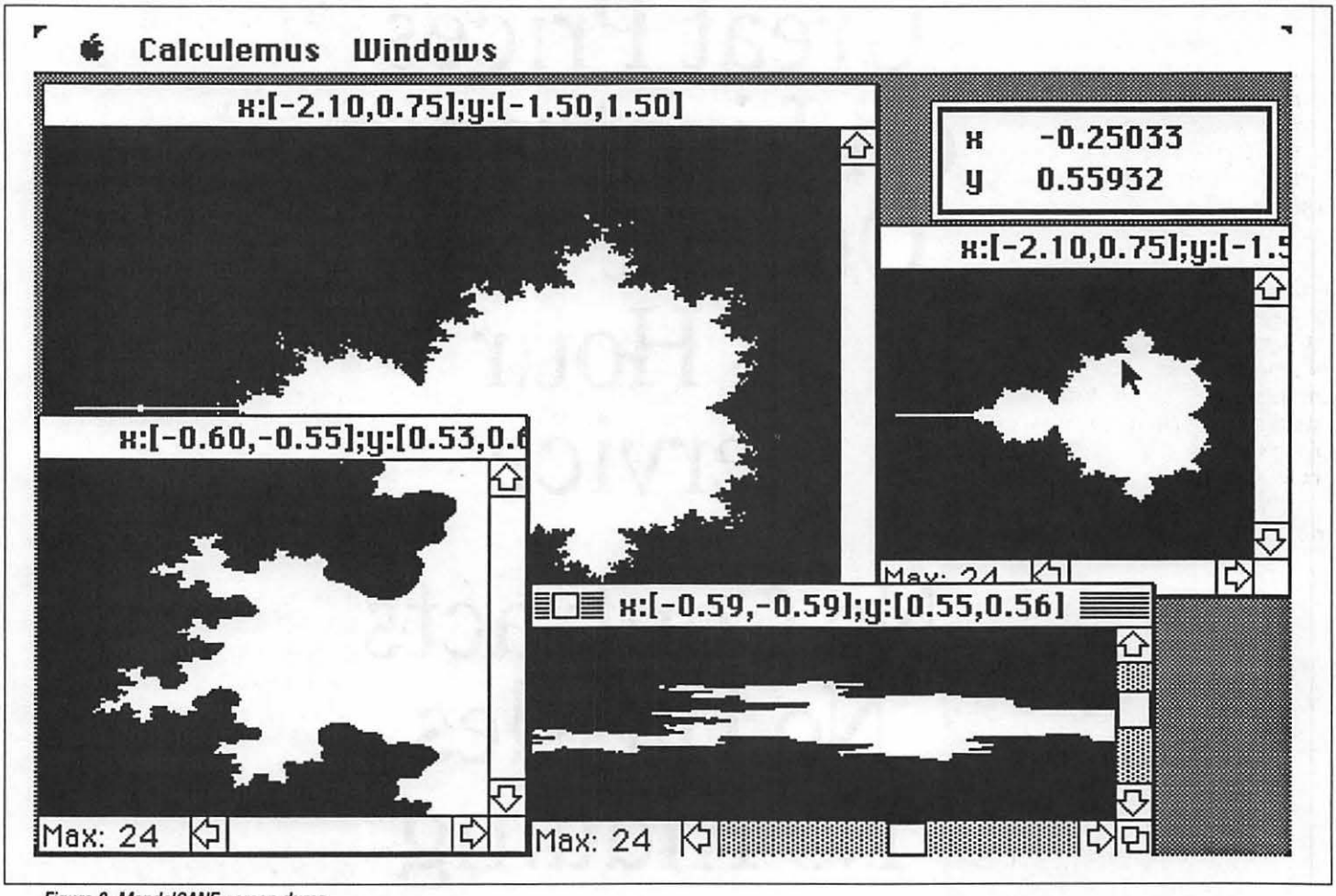


Figure 3. MandelSANE screen dump.

Resizing a window with a fractal drawing in it stretches the drawing to fit in the window. This happens virtually instantaneously.

You cannot close the original window. You can open new windows. These new windows can be closed and resized. A new window opens with a copy of the previously active window's contents and dimensions. For example, if a fifth window were added, in Figure 3, it would open with the same fractal picture as does the topmost, active window.

To zoom into a subregion of an active window, you can click drag over a region of the active window's drawing. The window will blank, the title bar will tell you the new area over

MandelSANE calculates floating point operations per second (flops). It has a mouse coordinates feature so that you can point to a drawn feature and see the (x,y) coordinates of that feature.

All window contents are buffered so that opening a DA on top of the window, and then closing it, does not force the window to be redrawn.

For Mac Plusses and Mac SEs pixels are either on or off. There are no shadings to denote differing regions of convergence. MandelSANE is Mac II compatible. On a Mac II MandelSANE can draw regions of differing convergences in different colors.

MandelSANE
Stephen Eubank
Department of Physics
University of Texas, Austin, TX.

author attributes his inspiration to Reference [4].

MacMandelbrot 0.9 (actually version 0.91, for you version aficionados) has five custom menus: Options, Side, Display, Count, and Corner.

The Options menu has five commands: Create a New Plot, Continue Existing Plot, Save, Load and Quit.

The Save command saves not only the settings controlled by the other menus, it also saves the current picture. This information is saved in a file called Mandelbrot.dat. The Load command reads the Mandelbrot.dat file, redraws the fractal picture, and restores the picture settings.

The Side menu has seven settings which control the scaling factor of the square fractal picture: 2.5, 0.25, 0.025, 0.0025, 0.00025, 0.000025, and 0.0000025. The larger the number, the higher above the complex plane is your vantage point.

The Display menu has four commands: Plot Data, Equalize Gray Scale, Invert, and About Gray Scale Equalization...

When you select the Equalize Gray Scale, a histogram pops up and gives you a little column chart. Its relevance is totally mystifying, and of course there is no explanation for this feature. Perhaps it is useful on a Mac II. Equalizing the gray scale did not noticeably change anything on my SE.

The Count menu has five settings which control the maximum number of iterations tested per pixel. The settings are: 16, 32, 64, 128, and 255. (Numerologists take note: which number does not follow the pattern established by the other numbers?) The lower the count setting, the faster the drawing.

The Corner menu specifies the coordinates on the complex plane of the upper left hand corner of the square frame. The Corner settings are: [-2.00, -1.25], [-0.75, 0.24], [-0.95, 0.25], [0.12, -0.77], [-1.5, 0.0], [-2.0, -1.25], [-0.6, 0.5], -0.25, -0.75], and Let Me Set It... The Corner and Display settings completely specify the coordinates of all four corners of the frame.

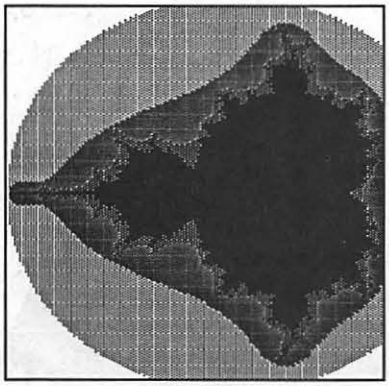


Figure 4. MacMandelbrot 0.9 fractal drawing. This picture took over two hours to create. Settings: Side = 2.5, Plot: Equalize Gray Scale, Count = 32, and Corner = [-2.00, -1.25]

Speed is not an operative word here. MacMandelbrot is S-L-O-W. Also the screen isn't buffered, so don't call up a DA, since a DA window will wipe out the portion of your drawing covered by the DA's dialog box, and all that time you spend doing your drawing will have been for naught.

The MacIntosh Clipboard is not supported by MacMandelbrot 0.91. To save fractal images done within MacMandelbrot, see the MandelZoom section for tips.

MacMandelbrot version 0.91
Michael Alterman
© 1985

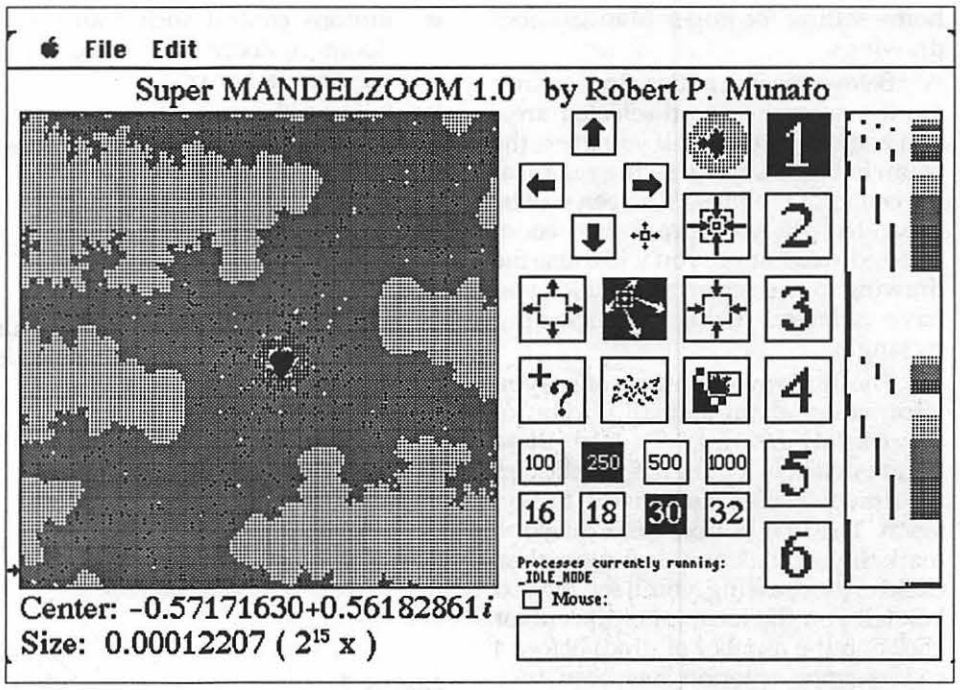


Figure 5. SuperMandelZoom 1.01 fractal drawing. The drawing is updated continuously as you change the settings by clicking inside the boxes. You can select a region of the drawing and enlarge it to get a more detailed look.

Super MANDELZOOM 1.0

SuperMANDELZOOM version 1.01 is a genuine blockbuster tool for a fractal investigator. This is a useful program, and it's a fun one. The button icon designs are lessons in why these things are best left to professional graphics designers, but all is forgiven when you compare this program's speed with that of its competitors. The software designer, Robert Munafo of Rhode Island, is to be commended for an incredibly well-executed and stable application. The best of the lot—no question about it.

SuperMANDELZOOM starts out drawing, in a matter of seconds, the classic fractal picture shown in Figure 2. It draws large pixels and then successively smaller pixels so that you get visual feedback much quicker than you would with a raster-scan (top-to-bottom or left-to-right) type drawing such as used by the programs: MandelZoom Mac, MandelSANE, and MacMandelbrot.

The four direction arrows move your drawing up, down, left, or right. Super MandelZoom has an intelligent drawing update feature that freezes parts of the picture that have been drawn already, and quickly draws those portions of the picture which have just been called into view by the arrow movements. A small black arrow on the left side of the drawing screen shows you which portion of the picture is being redrawn. It's a great feature, since it hops around quite a bit the more you move around the complex plane.

When you click in the Mouse box, you activate the mouse coordinates feature that tells you to which coordinates of the complex plane the cursor is pointing.

The numbers 1 - 6 denote how the shading of each pixel denotes convergence regions. You go from many shadings at the 1 setting, to only two shadings (black or white) at the 6 setting.

Clicking inside the cardioid figure causes default settings to override existing settings, and is in a sense the

home setting for Super MandelZoom drawings.

Below the four direction arrows are the zoom in, zoom selected area, and zoom out buttons. If you press the zoom in button, the drawing region at the center of the present screen will be expanded. If you press the zoom selected area button, you will cause the drawing to enlarge an area which you have selected using a click-drag rectangle.

The third row of buttons offers you information about a small portion of the fractal drawing. To use these buttons, click in a button, then click on the drawing, then click on the button again. The first button has a question mark. If you click on this button, then click on the drawing, you'll see the text box tell you the location of the cursor click and the number of times before a convergence criterion has been met. See Figure 6.

Figure 6. Text box showing cursor location, count before convergence, and period parameter.

```
Point = -0.765+0.203i
Count = 14                    Period Undefined
```

The second button allows you to see the Julia set of any point on the screen. Incredible! I was not able to take a screen dump of this process, since the Julia set-drawing process disables - Shift-3. Clicking anywhere on the screen converts the drawing back to the regular fractal drawing. This feature alone will have Benoit Mandelbrot wriggling in his seat with excitement, if he ever finds out about it.

The third button's function is left "as an exercise to the student," which means that I don't know what it does.

The fourth and fifth rows are convergence parameters. Fast drawing settings are on the left, slower ones are on the right.

The only drawback to this is that drawings can't be saved. Otherwise, an incredibly awesome application. A copy should be handed out with every copy of Refs [1], [2], and [3] sold. It is also a good example of how all Mac programs should be written.

A summary of key features:

- Best user interface of all of fractal applications reviewed here
- Fast-moving "movie" with pixel sizes getting smaller during the course of the plotting.
- Buttons control such features as Zoom In, Zoom Out, Move Viewing Area left or right
- Julia set shown
- Mouse coordinates (on the complex plane) can be shown.
- 2 types of Convergence criteria
- 6 types of shading showing convergence regions

The author has offered to share his source code. Send him a SASE (it needs two stamps).

SuperMandelZoom 1.01
Robert P. Munafo
8 Manning Drive
Barrington, RI 02806
401-246-1814

Chaos 1

Chaos1 draws the famous bifurcation plot shown in Figure 6.

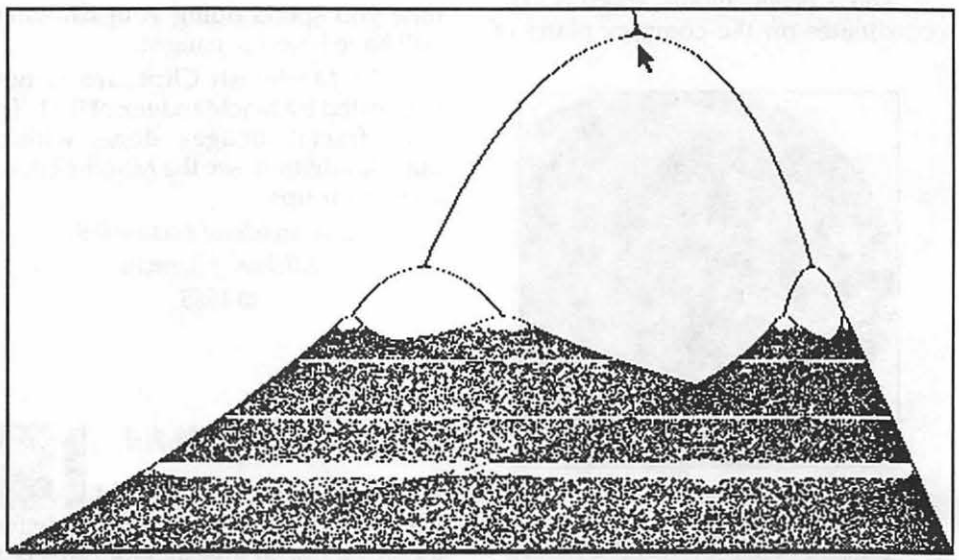


Figure 7. Chaos 1 drawing.

Chaos 1 draws the 'attractors' of the paraboloid y = r*x*(1-x). Begin and end values of r can changed. Figure 7 has 2.95<r<4. See Douglas Hofstadter's superb column in Reference [5] on "strange attractors". You'll see Figure 6 there, as well as a great explanation of what it means, and why your mind should be boggled.

Chaos 1 is a very simple-minded program. It would be nice to see attractors of other polynomials.

Chaos 1, version 7/20/87F. J. Condo, Jr.
(BITNET CONDOF@CLARGRAD)

3-D Fractal

3D Fractal draws a three-dimensional surface based on a 3-D fractal algorithm. You give the program a random seed number and the number of computing levels. The 3D mesh is computed, and then the mesh surface is drawn. Lower computing levels yield coarse meshes but faster drawing times. The recommended number of levels is 6, and the maximum number of levels is currently 7. Time per computing/surface draw cycle is about 4 minutes for 6 levels, on a Macintosh SE.

Excerpts from the program's introductory notes: The program "bisect[s] each of the sides of an equilateral triangle to create another four equilateral triangles in the center. The number of levels defines the number of times the program creates four new triangles per triangle. The number of triangles increases exponentially. The triangles are then tilted up or down according to the fractal equation and a random number generated from the seed number..."

It was created by Pierre Padovani in Reston, VA., who used Microsoft Basic to create the program. He has offered to send interested readers the program source code.

Pierre Padovani
11621 Clubhouse Ct.
Reston, VA. 22090

Where Can I Get These Programs?

CompuServe has them. But if you want a disk containing all of these, simply write the nice people at Diskette Gazette and ask for Disk V4. You can send them $5.75 per disk ($25 minimum order) and they will send you these jewels. And then you, can become a recognized expert in the wonderful world of fractals.

By the way, the Diskette Gazette has other fractal applications which I have not reviewed here. Their Visuals disk V1 contains two: Fractal Contours ("Demonstrates how fractals work in nature, generating scenes of mountains and water"), and Fractal2 ("generates elaborate mathematical curves... even lets you design your generator"). Visuals disk V2 contains MacFractals, Julia ("draws fractals... historic and mathematical information"), and Recursive.

International Datawares, Inc.
2278 Trade Zone Blvd.
San Jose, CA. 95131
1-408-262-6660

Fractals in Music

It's a shame, in a way, that everyone remembers Douglas Hofstadter's article in *SciAm*, but no one remembers two antecedent articles by Martin Gardner, (references [6] and [7]). If they had, they would have written not just visual programs, such as those reviewed above, but musical ones as well.

Mr. Gardner wrote a fascinating account of music produced by random computer generated sequences in Ref. [7]. It turns out that not all random music sounds the same to the human ear. Some sound better that others. An IBM researcher by the name of Richard Voss did this acoustical research a decade ago.

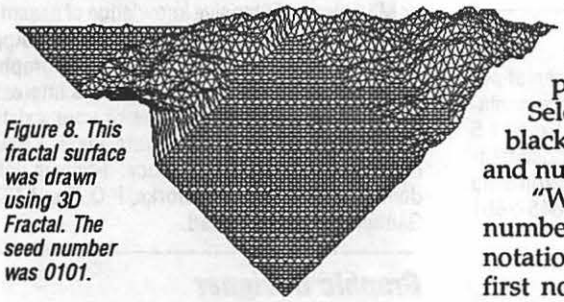


Figure 8. This fractal surface was drawn using 3D Fractal. The seed number was 0101.

Randomly generated music based on what engineers call white noise (or $1/f^0$ noise) was found to produce the least interesting music. Music based on white noise "will sound just like what it is: random music of the dull kind that a two-year-old or a monkey might produce by hitting keys with one finger."

If brown noise is used (called shot or $1/f^2$ noise by engineers) "sounds musical if you listen to any small part but random and uninteresting when you try to grasp the pattern as a whole."

Dr. Voss made an interesting discovery: that noise having a power spectral density (another engineering expression) which is a compromise between the white and brown noise would be more pleasing to the ear. This noise is called of 1/f noise. "Tunes based on 1/f noise are moderately correlated, not just over short runs, but throughout runs of any size. It turns out that almost every listener agrees that such music is much more pleasing than white or brown music."

Richard Voss earned his Ph.D. in physics at UC Berkeley, and then joined IBM's Thomas J. Watson research center where he teamed up with Benoit Mandelbrot to do fundamental research on fractal geometry. He was the prime mover behind computer-generated graphics that created eerily real looking landscapes based on random fractal sequences. The article that appeared in *Scientific American*'s April, 1978 issue predated the appearance of the Macintosh by five and one-half years. Too bad. With the Mac's musical capabilities, the machine cries out to have randomly generated music applications written for it.

Voss's algorithm is described as follows:

"The method is best explained by considering a sequence of eight notes chosen from a scale of 16 tones. We use three dice of three colors: red, green and blue. Their possible sums range from 3 to 18. Select 16 adjacent notes on a piano, black keys as well as white if you like, and number them 3 through 18.

"Write down the first eight numbers, 0 through 7, in binary notation, as shown [in Figure 9]. The first note of our tune is obtained by tossing all three dice and picking the tone that corresponds to the sum. Note that in going from 000 to 001 only the red digit changes. Leave the green and blue dice undisturbed, still showing the numbers of the previous toss. Pick up only the red die and toss it. The new sum of all three dice gives the second note of your tune. In the next transition, from 001 to 010, both the red and green dice change. Pick up the red and green dice, leaving the blue one undisturbed, and toss the pair. The sum of all three dice gives the third tone. The fourth note is found by shaking only the red die, the fifth by shaking all three. The procedure, in short, is to shake only those dice that correspond to digit changes."

	Blue	Green	Red
0	0	0	0
1	0	0	1
2	0	1	0
3	0	1	1
4	1	0	0
5	1	0	1
6	1	1	0
7	1	1	1

Figure 9. Binary chart used in Voss's 1/f random music algorithm (Ref [5]. p. 22)

This sort of algorithm is quite amenable to a quick hack by suitably inspired late-night Mac coders. If you want to take up the challenge, may I make a suggestion? Write a Desk Accessory that will allow this 1/f music to run in the background while Jo/Joe Average Mac User is typing a Word 3 document or using an Excel spreadsheet.

I will be more than happy to send reprints of Reference [7] to anyone interested in writing a Mac program to implement Voss's algorithm. Send a SASE to Fred Seelig, P.O. Box 244, Vienna, VA. 22180 ATTN: Random Music Reprint.

Saving Work Using Screen Dumps

In many public domain applications you cannot save graphics. What's worse, the Cut and Copy commands under the File menu don't work, or aren't even present.

But you can still save pictures of the screen in one of two ways. The first is to print the screen directly to an ImageWriter I or II printer, if the printer is not on an AppleTalk network. You do this by pressing -Shift-4. The second is to save the picture as a MacPaint file by pressing -Shift-3.

When you save a picture electronically, the file is called SCREEN 0, SCREEN 1, ... or SCREEN 9. It is usually saved on the top-most level of whatever disk is your startup disk. (Some programs route these screen dumps into folders. You might want to use the Find File DA to find them.

The numbering system allows you to save at most ten screen dumps. If you

rename the screen dump files you can save more, of course.

If you have a color monitor, color and gray scale settings must be off.

You can modify screen dump files within MacPaint, SuperPaint, FullPaint, ComicWorks, GraphicWorks, or any other graphics application capable of opening a MacPaint file.

References

[1] H.-O. Peitgen and P. H. Richter, *The Beauty of Fractals*, © 1986, Springer-Verlag Berlin Heidelberg. With 184 pictures, many of them in color. Contains the definitive "zoom-in" sequence of pictures of the Mandelbrot set with breathtaking clarity. Available cheapest through Science News Book Service.

[2] James Gleick, *Chaos*, © 1987, Viking Penguin, Inc. Far and away the most interesting and readable account of the history behind a new branch of mathematics. Gives the human aspect of mathematical discoveries. Techies: don't think this book is just for laymen. It's a great read for technical types, too!

[3] Benoit Mandelbrot, *Fractals: Form, Chance, and Dimension*, © 1977, W.H. Freeman and Company.

[4] "A Computer Microscope Zooms in For a Look at the Most Complex Object in Mathematics," A.K. Dewdney, Computer Recreations column, *Scientific American*, August, 1985, pp. 16-24.

[5] "Mathematical Chaos and Strange Attractors," by Douglas Hofstadter, pp. 364-395 of *Metamagical Themas*, © 1985, Basic Books. This selection is a reprint of the November, 1981 reprint of the Metamagical Themas column in *Scientific American*. Excellent explanation of the mathematics behind strange attractors. Also explains Feigenbaum's number and the attractor of Hénon.

[6] "In Which 'Monster' Curves Force Redefinition of the Word 'Curve,'" Martin Gardner, Mathematical Games column, *Scientific American*, December, 1976, pp. 124-133.

[7] "White and Brown Music, Fractal Curves, and One-Over-f Fluctuations," Martin Gardner, Mathematical Games column, *Scientific American*, April, 1978, pp. 16-32.

Mr. Seelig has trouble concentrating on anything anymore since his two year old has discovered the joys of lap sitting. He wrote this article in between having wet fingers poked in his ear, and sticky, wet hands searching his shirt pocket. What's more, his five year old is lusting after her own time slot on the Mac, ostensibly to use some educational software. He thinks that she really wants to edit some of his articles to make them more readable.

••• Classifieds ••• Classifieds •••

For Sale

MacProject 1.2 $75. Complete in sealed package. Call Rob at 301-428-9207.

For Sale

Mac II, 2 MB memory, 1 800k drive, HD 40 MB Internal Hard Drive (from Apple), 1 Apple RGB color monitor and Apple video card. $5,700. Call Rob at 301-428-9207

For Sale

Apple High Resolution RGB color monitor, monitor stand and Apple video card $1,250. Call Rob at 301-428-9207.

Wanted

Inexpensive used external hard disk for my Mac Plus. Call 654-1745.

For Sale

Apple Macintosh II's - new in unopened, factory sealed boxes. Each with 1x800K internal floppy, 1 Meg RAM, list $4869 + 244 tax = $5,113. Sell $2,979. Chevy Chase 654-1745.

FOR SALE:

New Macintosh software. Pagemaker 3.0, $29; MacPaint v. 2.0, $50; MacDraw II, $165; CricketDraw v. 1.1, $140; and SilverServer, $80. All above are latest versions still in factory shrinkwrap. Also, used copies of Adobe Illustrator (not "88"), $125; Microsoft Word v. 3.02, $95, Power Station v.2.5, $30; Microsoft Excel v 1.5, $125. Also selling like new 60 MEG external hard drive for Macintosh for $675 o.b.o. Call for details. Paul at (703) 47-9305.

For Sale

Apple IIGS with two 5 1/4 inch and one 3 1/2 inch drives, monochrome monitor, and 1.25 Megs memory— $1399. Call John Willis, day: 301-353-4095, night: 301-694-9410.

For Sale

PageMaker 2.0a with original documentation-$150. Word Perfect 1.0 with original documentation-$125, PowerPoint 2.0 - $125. Excel 1.5 Upgrade Package (includes some new documentation but not original manuals) $50. Cauzin Strip Reader, $50. Call Lynn Trusal 301-845-2651 evenings before 10:30 p.m.

For Sale

Mac software. Double Helix][relational database package, Geoquery mapping program by Odesta, Full Impact spreadsheet from Ashton-Tate. Call David evenings 301-972-4263.

For Sale

Apple Lowest Profile SIMMS for SE&II. Toshiba 120 nanos will install in Mac II for free (or SE if you provide tools). Four Megs available @ $350/meg or all four for $1,300. Call 656-6832 evenings and weekends.

For Sale

SuperMac SuperView II. 19" mono monitor and card (for MacII). Only five months old, perfect condition. $1,500 for set. Call 656-6832 evenings and weekends.

For Sale

"Paintworks Plus + ClipArt Gallery" for //GS. Raffle prize but no //GS. List $110; asking $45. Call Eric at (703) 557-2522 (w) or 525-5188 (h).

Commercial Classified

For Sale

Everex SCSI Hard Drives for sale! HD-20D, $469. 40M and 92M also available. 2400 baud modem, $219. Call Rusty at Sum Data Corp. (301) 565-8007.

Job Mart

Exec. Assist. to Pres. of PR Firm.

Energetic, experienced individual with excellent skills and desire to grow, to serve as Executive Assistant Secretary to President of small PR firm. Send Bio to E. Fraser, Public Affairs Group—Suite 1100, Washington, D.C. 20006 (Phone: 785-6713).

Computer Programmer

Games Programmers with experience on IBM PC or Macintosh. Extensive knowledge of assembly language and competence in C required. Applicant must have experience in real-time graphics or simulation programming. We are interested also in receiving submissions of your existing games or productivity software ideas. Salary commensurate with experience. Reply in confidence to: Bethesda Softworks, P.O. Box #7877, Gaithersburg, MD 20898.

Graphic Designer

The PLS Group, a Telecom consulting firm in Potomac, has an opening for a Graphic Designer proficient in MacDraw II, Power Point and Pagemaker. We have two Mac SE's with a Big Picture and a Laserwriter II. We offer health insurance, free parking and competitive salary in a pleasant, non-smoking work environment. Contact Ginger at 983-8508 to schedule an appointment.

Disketeria

Name _____

Address _____

_____

City/State/Zip _____

Phone (day) _____ (evening) _____

Number of disks _____ x fee _____ =

Total for disks _____

Postage _____

Discount taken _____

Total enclosed $ _____

Member Number _____

Disk name: _____ *Disk name:* _____
Disk number: _____ *Disk number:* _____

Class name: _____ *Class name:* _____
Class date: _____ *Class date:* _____

Disk name: _____ *Disk name:* _____
Disk number: _____ *Disk number:* _____

Disk name: _____ *Disk name:* _____
Disk number: _____ *Disk number:* _____

Mail this form with your check to:
Disketeria
Washington Apple Pi, Ltd.
8227 Woodmont Avenue, Suite 201
Bethesda, MD 20814

Tutorials

Name _____

Address _____

_____

City/State/Zip _____

Phone (day) _____ (evening) _____

Number of classes _____ x fee _____ =

Total enclosed $ _____

Member Number _____

Class name: _____
Class date: _____

Class name: _____
Class date: _____

Mail this form with your check to:
WAP Tutorials
Washington Apple Pi, Ltd.
8227 Woodmont Avenue, Suite 201
Bethesda, MD 20814

Volunteer

Name _____

Address _____

_____

City/State/Zip _____

Phone (day) _____ (evening) _____

Comments:

_____

_____

_____

I would like to help the PI with:

_____

_____

_____

_____

Mail this form with your check to:
Volunteer Coordinator
Washington Apple Pi, Ltd.
8227 Woodmont Avenue, Suite 201
Bethesda, MD 20814

WAP DISKETERIA

New /// SIG Public Domain Disks

by David Ottalini
/// SIG Co-Chairman

As promised, we are adding ***four*** new Apple /// disks to our growing public domain offerings this month. With these disks, there are now a total of 40 to choose from. And at only $3.00 per disk, they offer an excellent source of low-cost Apple /// software. Our new disks include:

The New Disks

THREE.SIG.1037
CustomFONT Manual

CustomFONT is an excellent font utility program for the Apple ///. CustomFONT has been placed into the Public Domain by its vendor, Swenson Associates. This manual, transcribed to disk by Dave Ottalini, contains complete instructions on how to use the program and get the most out of it. On side two, you will also find a subdirectory full of additional programs you can use to pull or manipulate font files from other programs. Full documentation provided. PASCAL required for some programs. As with other /// SIG disks, THREE.SIG.1037 is self-booting on side one and files may be read or printed using the Menu.Maker program.

THREE.SIG.1038
CustomFONT

This is the CustomFONT program disk. Originally sold as a commercial program by Swenson Associates of Boston, Massachusetts, CustomFONT is a font utility program for the Apple ///. Use it to create custom fonts for your programs. It can enhance your word processing (and any other) document with multiple fonts, business logos, footnotes, simple graphics, mathematical formulae or foreign language characters. The program includes a file of ready-to-use symbols for mathematics, engineering, report formatting and games. CustomFONT is self-booting on side one and is PASCAL based.

THREE.SIG.1039
Font Disk #1

This /// SIG PD disk contains two sides of nothing but FONTS, FONTS and more FONTS. Gathered from many sources, this disk includes a number of foreign language fonts, weird and very strange fonts, even upside down fonts. Two subdirectories include converted Apple // font files that can be the basis or inspiration for additional font files (while successfully converted to /// format, they do not exactly match /// font files and need some work). Additional font information is provided on side two in both 3EZ Pieces/ AppleWorks format and as an ASCII file. Self-booting on side one, Menu.Maker allows you to read any of the fonts on this disk and display them on screen! Simply hit <ESCAPE> to return to WAP.STANDARD font. Documentation included.

THREE.SIG.1040
Ottalini Articles #1

Our final offering this month is the first disk in a series to contain a compilation of past articles by /// SIG Co-Chairman Dave Ottalini. Includes many of his "WAP Journal" articles prior to the "Trail" column. May contain some useful information (!)

Mac Disketeria

by David Weikert

New Telecom. Series

To complement the November meeting program theme of Telecommunications, we are issuing the Telecommunications disk series in the 800K functional series format. Over half of the programs in this eight disk set are either new or revised. Except where noted, the programs have been tried successfully on a Mac SE using System Software version 6.0.2 (System 6.0.2, Finder 6.1). The eight disk set labeled Mac Disk #13.01 through #13.08 is now available for $28.00.

Revised Disk Catalog Still Available

The 84 page Mac Disk Catalog, containing comprehensive information about the entire WAP Disk collection, is current through the disks released last month. The catalog is available now for $4.00 at the office or general meetings or by mail for $5.50 including postage and handling. The catalog is organized into four sections as follows: (1) list of disks by disk number and name, (2) descriptive listing of files on each disk by disk number and name for the functional series of disks, (3) descriptive listing of files on each disk by disk number and name for the serially numbered disks and (4) alphabetic listing of files across all disks. We have discontinued the production of the mini-catalogs that were offered with each full functional disk series as we expect to revise the catalog every two to three months.

More HyperCard StackWare and Externals

We have new StackWare (Mac Disk #19.16) and HyperCard Externals (Mac Disk #21.04) disks this month thanks to David Condit, our HyperCard librarian. David compiled and annotated the HyperCard Externals disk while Chase Ridgely (father and son) compiled and annotated the StackWare games disk.

Apple System Software V6.0.2

Version 6.0.2, Apple System Software is available on four disks for $5 per disk. One disk includes an updated System, Finder, MultiFinder and associated System folder files. The next disk is dedicated to printer drivers. The remaining two disks contain the Apple utilities including two new ones, a macro recording and playback capability and an expanded screen image for the visually impaired. This System Software package does not include any documentation. If you need documentation, you can get the full package from your local Apple dealer at a list price of $49.00; ask about a discount for WAP members.

The New Disks

We have 10 new 800K disks this month, eight Telecommunications Series, one HyperCard StackWare Series and one HyperCard Externals. This month's submissions are brought to you by David Condit, Marty Milrod, Chase Ridgely (father and son) and Dave Weikert and the efforts of all the duplicators listed under the masthead. Thanks to new duplicator Tony Salerno, who again has assumed the brunt of the duplication activity this month.

Mac Disk # 13.01:
Telecommunications 1

ArcMac.Arc *f*: **ArcMac.Arc** (v1.3b) and **ArcPop.Arc** (v1.2a): ArcMac.Arc is an "archive" file created by ArcMac and containing **ArcMac, ArcMac.Updates, ArcMac1.Doc, ArcMac2.Doc and XARCMAC.EXE** (in the *contents of ArcMac.Arc* folder). ArcPop.Arc extracts the files from the archives. ***Shareware – $25 for ArcMac, ArcPop.Arc is free.***

How to Read MacDisketeria Descriptions

- The folder information, where appropriate, precedes the listing of program contents.
- Folder information is underlined
- **Program and file names are printed in bold**
- ***Shareware information printed in bold italic print.***

ASL Talk *f*: **ASL Talk:** A simple communications package in a DA. See the MacPaint documentation for guidance. **ASL Launcher** is an installer for ASL Talk. (Font/DA mover or Suitcase will work as well.) **ASL Font 8** is a font necessary to ASL Talk.

AutoDial: This DA allows you to dial your modem from within MacTerminal. ***Shareware – "Any contribution greatly appreciated."***

Autolog 3.2 *f*: **Autolog 3.2:** A DA which performs log-on macros while a terminal emulator such as MacTerminal is active. Autolog should work with most terminal emulators. See the **Autolog Doc** documentation (for version 3.0). ***Shareware – "what you think its worth."***

BackDown/Delta+2 *f*: **BackDown/Delta+2:** A background XMODEM downloader DA. Downloads while you are working within an application. **BackDown Manual** is the BackDown documentation in the form of a comprehensive manual.

BinHexv5.0: Latest version of the utility to convert applications to and from hexadecimal format from the binary format used for disk storage on most non-Macintosh computers. Especially useful if you transfer files directly from other computers in binary. ***Shareware – $10.***

BusinessLog *f*: **BusinessLog:** A Macintosh log-in program that is a take-off from "Autolog" (Jan Eugenides, NIBBLE MAC, Vol 1, 1985) and it contains several features that will be of great utility for the user who wants to keep track of the time of computer use for specific jobs, job categories or users. One of the distinguishing features of BusinessLog is the capability of flagging a particular session as being business-related or non-business-related. **AutologConvert** is the conversion program to convert from the Autolog program to BusinessLog. **BL Docs** is the standalone documentation for the program, and **Business Log Docs.txt** is the text file required for the help feature. ***Warning:*** do not change the name of Business Log Docs.txt.

Charger 1.1: A timer and calculator to compute the costs of long distance calls, on-line services, etc., with an alert when a preset time or dollar limit is reached.

CheckSum *f*: **CheckSum:** This DA performs a CheckSum function on a file. It is useful for making sure that a file transfer was successful. **ChkSum.doc** explains how it works.

CIS Commands: A lo-o-ong list describing the commands available on CompuServe.

CIS Help: Another lo-o-ong help file to assist CompuServe users in learning the new forum menus.

Mac Disk # 13.02: *Telecommunications 2*

CIS Navigator 1.31 *f*: **CIS Navigator 1.31:** The first "Mac-like" program which can make it easier and less expensive to use the CompuServe Information Service. You can get the Navigator to quickly sign on to CompuServe, read or summarize messages, get descriptions of the files available to you in the data libraries, save it all in a disk file, and sign off. Then, with the CompuServe billing clock not running, you can use the Navigator to read the messages and compose replies, scan message summaries and select the discussions you want to see in full, and scan the library listings and select files you wish to transfer into your computer. Finally, you can tell the Navigator to quickly sign on again, send your replies, get any new messages you asked for, and download the files you want. The Navigator knows all about CompuServe, and does these things as quickly as possible. The goal is to minimize the time you are actually signed on to CompuServe, in order to save money. This shareware version no longer works with CompuServe due to changes in the forum names but the program is now sold commercially as CompuServe Navigator (version 2.11 as this is written). You could manually make the type of changes to CIS Navigator as described in **Nav Maug text** but much less work would be expended if you buy the commercial version with the latest changes. Future changes to maintain currency with Forum name changes come as CompuServe downloads such as **Nav HYPER Update** and **Nav MAUG Update** which automatically install the changes into CIS Navigator.

Clipper DA 1.0b2: Sets the line width and adds or strips returns on any text that is in the clipboard. Useful for extracting text from a word processing document and using it within a telecommunications program.

Clipper Key 1.6 *f*: **Clipper Key 1.6:** As the author says: This FKey has one purpose in life – to make things easier for telecommunicators using desk accessory word processors. It processes text pasted into the clipboard by Desk Accessory word processors, inserting carriage returns at word breaks nearest to a user selected line length. It also translates characters that most bulletin board service will not accept to acceptable ones. Not tested. Read **Clipper Key Doc** for details on other features. (FKey #6).

Commander 2.0: This full screen of information displays the Hayes modem (and compatibles) AT commands and S Registers.

Compress It: This DA allows you to compress or decompress files for archiving or uploading/downloading. ***Shareware – $15.***

ConSITer DA 1.2.1 *f*: **ConSITer DA v1.2.1:** A DA to make life easier for folks using Auto UnStuffIt 1.00 It converts SIT files to Auto UnStuffIt and back again by changing the file type to APPL or SIT!, respectively as described in **ConSITer DA 1.2.1** ***Doc. Shareware – Free if you've paid for Stuffit, but send a message to Sewell.***

CRC 1.10: Calculates the Cyclic Redundancy Check, CRC (a means of verifying that a block of data arrived intact) for data and resource forks of any file.

CSS 1.4 *f*: **CSS 1.4:** Communications Services Summary helps you monitor your on-line time and charges with commercial telecommunications services. You may have up to ten services, each of which may be individually configured. **CSS 1.4 Manual** describes the operation and features of CSS.

DeskDialer: Lists phone numbers and dials them in tones to the sound port. ***Shareware – $15 for an update and a hardware adapter for the phone.***

DisplayRLE: This DA displays RLE graphics which can be found on CompuServe. File to screen, screen to inverse screen and screen to file conversions are provided.

DivJoin 1.0d9 *f*: **DivJoin 1.0d9:** Allows large files to be transported via floppy by dividing big files into multiple floppy sized pieces, later rejoining those pieces into a single file. Despite the title, **09-DivJoin doc** is the documentation for version 1.0d8 of DivJoin.

DL>Delimiter 1.07 *f*: **DL>Delimiter 1.07.** Import CompuServ Data Library downloads into your database. This program deletes spaces, inserts a tab or delimiter string, converts dates, reads almost anything that includes a CompuServe DL Scan/des and converts only the File info into a Delimited Text File for importing into a data base as described in **DL Delimiter.Docs.**

Ez-Mail 1.10 *f*: **Ez-Mail 1.10:** Maintain multiple files of names and E-Mail addresses for up to four different services for frequent E-Mail or bulletin board users. **EzMail (READ ME NOW!)** is the documentation. ***Shareware – $15 for full featured version.***

Face Manager/Fixer *f*: **Face Manager and Faces Fixer:** Supports management of the pictures or "faces" of the telecommunicators using CompuServe Navigator.

File Splitter.APP/DA *f*: **File Splitter.APP** and **File Splitter.DA:** Lets you split large files into small ones. **File Splitter.APP** is the standalone application, **File Splitter.DA** is the same thing in a desk accessory and **File Splitter.DOC** briefly describes the process. ***Shareware – $3.50.***

FModem 0.97 *f*: **FModem 0.97:** This is similar to TermWorks but has a few more advanced features, such as the FModem file transfer protocol macros and repeated dialing across up to five phone numbers. Has fine documentation and is easy to use. ***Shareware – $20.***

Forum Help!: A DA with help screens for CompuServe's new commands.

Mac Disk # 13.03: *Telecommunications 3*

FreeTerm 2.0 *f*: **FreeTerm 2.0:** This simple terminal emulator supports ASCII file transfers. The XModem protocol is supported as is the Macintosh MacBinary II format. It will work on asynchronous communications devices that support data transfer rates from 300 to 57600 baud. If you have a Hayes-compatible modem, there is support for auto-dialing and hang up commands. The **FreeTerm 2.0 Doc** describes all of its features and lists a number of the XModem error messages.

GEnie Helper 3.4 *f*: **GEnie Helper 3.4**: This is a un-compiled Red Ryder 10.0 [or later] procedure file. When run with Red Ryder, it will log you onto GEnie, get your mail and save it in a TEXT file and perform a number of other useful functions. Source code and sample files are included as described in **GEnie Helper 3.4 Docs (Read Me)**.

GEnie Master II *f*: **GEnie Master II**: This is a Red Ryder procedure that permits navigation around the GEnie Round Tables much as CIS Navigator permits with CompuServe Forums. This is described in **GEnie Master II.Doc.**

Grafterm 2.4 *f*: **Grafterm 2.4**: Grafterm is a terminal emulation program that supports DEC VT-100 text style capability and Tektronix 4010/4014 style line graphics, each in separate windows. Menus allow the selection of communications parameters, scaling of graphics and printing. The Edit menu supports only desk accessories and provides no ability to cut and paste text to the clipboard or scrapbook. **GtermDoc.Wrt** is the rather sparse documentation of Grafterm that assumes that you already are familiar with DEC VT-100 and Tektronix 4010/4014 terminals and protocols. ***Shareware – $50.***

IBS *f*: **IBS**: InterMac Bumper Ships is an interactive game played between multiple Macs over AppleTalk, direct connection or one of three communication services (Delphi, GEnie or CompuServe). Not tested. **Star Fleet Impulses** is a supporting file for IBS. ***Shareware – $10.***

IDOD 2.3.PROC *f*: **IDOD 2.3 PROC**: This (I Dream Of Downloading) Red Ryder 10.3 procedure will download a batch of files from GEnie based on a list which is created by you or by GEnie. **IDOD DOX 2.1 (MacWrite)** is the description.

Kermit 0.9(40) *f*: **Kermit 0.9(40)**: Kermit is a virtual terminal and file transfer program that can send files between two micro-computers, or a micro-computer and mainframe, when there is a version running on both ends. **MacKermit Doc** is the early "Mac-ized" with MacWrite documentation file and **KERMIT-0940-DOC.TXT.1** is the more recent Columbia standard text material.

LegalTerm™ for LEXIS® *f*: **LegalTerm™ for LEXIS®**: Both the desk accessory and standalone application provide access to the Mead Data Central LEXIS® legal data base using the familiar Mac interface. The Desk Accessory version gives access to LEXIS® from inside another application such as a word processor so that your do not have to leave your place to research a case. LegalTerm™ for LEXIS® includes all of the most commonly used buttons on the Deluxe and Ubiq terminals, represented by on-screen buttons that work just like their LEXIS® terminal counterparts. These buttons are provided for your convenience. You may still use typed commands if you prefer. Menu items provide access to all of the other functions on a dedicated LEXIS® terminal as well as two special printing functions. The **LegalTerm™ for LEXIS® Doc** is the comprehensive manual while the **LEXIS Flyer (Write)** is a descriptive summary of features. ***Shareware – $30.***

Mac Disk # 13.04: *Telecommunications 4*

LegalTerm™ for WESTLAW® *f*: **LegalTerm™ for WESTLAW®**: You can access the West Publishing Company WESTLAW® legal data base using the familiar Mac interface using either the desk accessory or standalone application. The Desk Accessory version gives access to LEXIS® from inside another application. LegalTerm for WESTLAW® provides all of the most commonly used buttons on the WALT® terminal, represented by on-screen buttons. The buttons work like their WALT® terminal counterparts. Typed commands may also be used. The other functions performed by buttons on the WALT® terminal are accessed through menu items in the LegalTerm™ menu. A comprehensive manual and descriptive summary are provided by **LegalTerm™ for WESTLAW ® Doc** and **WESTLAW Flyer (Write)** respectively. ***Shareware – $30.***

MacArc: This file compression and archiving utility is based on an MS DOS program named ARC. MacArc only unarchives files created by MS DOS ARC.

macGEnie *f*: **macGEnie**: This is a terminal program for communications with GEnie. It does not have the full features of a program like Red Ryder but was written to demonstrate alternatives to conventional terminal programs and to show that a terminal program could be "Mac-like." **macGEnie.manual** is the documentation and describes the other supporting files.

MacLoad *f*: **MacLoad**: Allows text files up to 32K to be entered into the Mac through the modem, as from, say, a laptop computer. **Loader Docs** is the documentation. ***Shareware – $5 for registration and upgrades.***

MCS *f* (v1.1): **MCS**: The Multichannel Communications System allows file transfers over satellite links. A proprietary protocol, X.MS (similar to CCITT X.25), is used to eliminate noise and the problem of long delay time that can exist with XModem transfers. MCS allows the simultaneous upload, download and chat using multiple channels. **MCS Doc**: The documentation for MCS. **MCS Edit DA++**: Supporting Desk Accessory for MCS. ***Shareware – $15.***

MiniTerm v2.9.3 *f*: **MiniTerm v 2.9.3**: This is a simple terminal emulation program that provides basic file transfer capability including standard XModem and MacBinary XModem file protocols. **History of MiniTerm (MW)** is the change history of the program. ***Shareware – $15 if you can afford it.***

ModemConnection *f*: **ModemConnection 88V29**: Shows a table of connections for DB-25 (modem) connector to DB-9 (Mac 128K, 512K) connector and DIN 8 (Mac Plus, SE and II) connectors. **TechNote.65R** from Apple shows the pinouts for each connector type.

Ms.LazyCat: Transfer ASCII text between MS DOS and Macintosh computers. Baud rate is selectable from 300 to 19,200 as are other settings such a stop bits, parity, data bits, port and line feed filtering.

News Reader 1.9 *f*: **News Reader 1.9**: Permits you to take the Delphi, Info-Mac and UseNet digests or other bulletin board message files and split them up so that each message is presented one at a time. **News Reader Manual** is the documentation. ***Shareware – £5 or $10 (U.S.).***

Ninja Term *f*: **Ninja Term**: Another terminal program but this one has a novel difference. If you need Hakata or Fukuoka text representation, then this is the only one we have with such a capability. Provides XModem protocols and selectable baud rates from 300 to 57,600 along with the standard settings for stop bits, parity, data bits and port. Also has VT-100 emulation.

Mac Disk # 13.05: *Telecommunications 5*

PackIt III 1.2 *f*: **PackIt III 1.2**: PackIt takes one or more Macintosh files (either applications or documents), and packs them together into a single file. It also unpacks them. It preserves both the data and resource forks of the packed files, as well as general file information (the file name, type, creator, Finder flags, and whether the file is locked). Very useful for keeping related files together on a bulletin board system. **Packit Docs** is the documentation.

Patch Nav 2.01: Updates CIS Navigator version 2.01 to 2.01P (patched) to correct a bug.

PCP Menu Maker: The PC Pursuit Menu Maker allows you to create a logon procedure for the Telenet access service that works with Red Ryder. You enter your user name, user password, baud rate and local Telenet access telephone number. The program creates a macro for Red Ryder that adds a PC Pursuit menu to Red Ryder with all of the cities accessible via Telenet as menu options. ***Shareware – What ever it's worth (up to $15.)***

PGTerm 2.1 *f*: **PGTerm 2.1**: Pretty Good Terminal is a terminal emulation program providing MacTerminal, Macbinary and Xmodem (Christensen) protocols. PGTerm lives up to its name as a terminal communications program. It emulates a larger and useful subset of the DEC VT-100 terminal ANSI X3.64 cursor control commands (more that MacTerminal). It includes programmable function keys (macros). PGTerm is a much smaller program than MacTerminal but includes much of the same functionality as MacTerminal. **PGTerm 2.1 Manual** is the manual which lists the primary screen commands that are supported (but you need to be a VT-100 user to know what the list means). **Unix** and **use printer port** are supporting files for PGTerm. ***Shareware – $35.***

Port Watcher 1.0 *f*: **PortWatcher**: Monitors a serial port for incoming information while telecommunicating, putting up a "string art" screen blanker while you wait. (The blanker

can be used by itself; see the **PortWatcher.doc** documentation.) ***Shareware – What you think it is worth.***

QDial 1.6 *f*: **QDial 1.6:** A DA which re-dials in the background up to five BBSs, rotating them continuously until one is reached. Supports Hayes compatible modems operating at 300, 1200 and 2400 baud as described in **QDial Docs**, a comprehensive manual.

QuickB Download 1.20 *f*: **QuickB Download 1.20:** A DA written for the CompuServe user who downloads frequently. QuickB is a new protocol which allows for significant speed gains and time savings when downloading from CompuServe. **About QuickB Download 1.20** is the documentation. ***Shareware – $20.***

Red Ryder *f*: **Red Ryder 9.4:** This is the last shareware version of this telecommunications classic before the author took it commercial and it is no longer supported as shareware. No unique documentation was ever produced for version 9.4. **The Red Ryder 9.4 changes** documentation merely serves as a supplement to the 8.0 documentation. The original shareware fee was $40. Use this version to get a sense of how Red Ryder works but buy the commercial version if you decide that you like it.

Red Ryder 8.0 Doc *f* contains the documentation (in MacWrite format) for the prior version of Red Ryder.

Red Ryder 9.4 Menus *f* contains very dated menus for a number of bulletin board and telecommunications services.

Mac Disk # 13.06: *Telecommunications 6*

RLE/Paint 0.2 *f*: **RLE/Paint .02:** A utility for converting MacPaint pictures into RLE format, a graphics interchange standard used by CompuServe. **RLE/Paint 0.2 Docs** documentation describes version 0.2 as a pre-release version meant to get ideas and comments from users for the real release.

Scripter 1.0 *f*: **Scripter 1.0:** Scripter generates scripts for Red Ryder and selected host systems to automate downloading of multiple files. This version supports PCBoard, RBBS and GEnie. **Scripter.doc (MacWrite)** describes the procedures for it's use.

ShowDown *f* (v1.10): **ShowDown:** For sysops of BBSs, it provides a message-taking service while the sysop works on other projects. **ShowDown.doc** is the brief documentation. ***Shareware –$5.***

shrink to fit 1.2: A file compression utility for archival and telecommunications use. ***Shareware – $5.***

SMTCM/USRset: A MacWrite document tabulating USRobotics COURIER 2400 Modem DIP switch settings when used with Hayes Smartcom II on the Macintosh.

Stuffit 1.5.1 *f*: **Stuffit 1.5.1:** Permits grouping of multiple files into one ("archiving") and the compression of file(s) to reduce download time and hassle. Based in part on the IBM program Arc and in part on the UNIX program CompressIt. It is appreciably faster and more efficient than PackIt and has built in utilities BinHex ,Hqx encoder/decoder, and a built-in file segmenter/joiner. Offers compatibility with PackIt II/III by unpacking .pit files incorporating the unpacked file(s) into a StuffIt archive. **StuffIt 1.5 User's Guide** tells all about it. Use StuffIt for de-archiving/de-compressing files for free. ***Shareware – $20 for other use, $2 extra for disk of latest version.***

UnStuffit 1.5: An application which allows you to decompress archives in Stuffit format from the desktop.

StuffIt Utilities *f*: **Utilities1.5/User's Guide** is the documentation. ***Shareware – $15 for registered Stuffit owners, $18 for others.***

UnStuffit.DA 1.5: A DA that allows you to decompress archives in Stuffit format from within any application which supports desk accessories.

Viewer 1.5 is a desk accessory which works much like UnStuffIt DA except that you may not extract any entries with it. You may only view the entries in an archive. Useful if you do not have enough free memory to run UnStuffIt DA.

Auto Unstuffit Installer *f* (v1.5): **AutoUnstuffit Installer 1.5** allows you to install **AutoUnstuffit Shell 1.5.1** into an archive. Once installed, the archive can be executed and will automatically extract any non-encrypted entries stored in the archive.

SF Vol1.1 INIT *f*: **SF Vol1.1 INIT** adds a pop up menu dialog box to the menu you see when you select Open... or Save As... from applications and desk accessories. This pop up menu allows you to switch to any other on-line volume instantly and to create new folders.

Telecom Protocols *f*: **YMODEM.DOC and ZMODEM.DOC:** Descriptions of the YModem and ZModem protocols.

Mac Disk # 13.07: *Telecommunications 7*

Term-Plus©6.6 *f*: **Term-Plus©6.6:** A smart terminal program that is designed for users of CompuServe Information Services. It is compatible with the VIDTEX™ terminal control codes and supports CompuServe's B protocol for file transfers. Term-Plus supports MacBinary file transfers and simple XModem so that it may be used with other services. It also has a built-in file text editor. Term-Plus features Macro string capability and the macros may be represented by buttons at the bottom of the terminal window. Term-Plus also has a navigate mode for getting around various CompuServe locations and a scripting capability called AutoPilot that includes goto, gosub, if and then functions; **TermPlus AutoScript** is an example. **TPLM1.WRT** and **TPLM2.WRT** are an extensive document that describes the features and operation of Term-Plus. ***Shareware – Free for Level 1, $20 for Level 2 and $40 for level 3.***

Term Works 1.3 *f*: **TermWorks 1.3:** This is a telecommunications program which supports the basic needs of a modem user. Has macros, file transfers, and a dialing directory. Easy to use. **Manual (MW)** is the documentation for version 1.29 and **SetSerial1.0** is an application to set the serial number for registration. ***Shareware – $20, $5 rebate for each paid registration of your serial number.***

The 9600 BBS List: A long list of bulletin board systems with a 9600 baud modem capability dated 7/1/88.

Ultra Disk Split/Merge 1.1: Splits a disk into a number of files, or restores the disk into a number of files. Useful when transferring a whole disk's contents over the modem.

UnPack.DA/FKEY *f*: **UnPack.DA** and **Unpack.FKEY:** A DA and an FKey to do the same thing; unpack files. Both are included so that you can invoke this function the way you would like to use it. (FKey #8).

Unpit: Unpit is a file packing, unpacking and compression utility primarily used to unpack '.pit' files created by PackIt {I, II, III} or by Unpit. It is partly based on the Unix program 'unpit'. '.pit' or PackIt files are encoded in such a way to include several files that should be kept together (such as a program and its documentation).

vt100 *f*: **vt100:** A VT-100 terminal emulator with a wide range of baud rates. No documentation; you need to know what you are doing. **vt100 font** is needed for the emulator to work.

vt52: Emulates a VT-52 terminal. Supports uploads, downloads, allows selection of printer or modem ports and has baud rate selection from 300 to 9600.

WXModem: A DA to access a modem to send or receive files from within an application. ***Shareware – $25.***

zee Com23 v2.1 *f*: **Com23 v2.1:** For those of you who read French, **Doc. de Com23** describes the capabilities of this telecommunications program. "Com23 est un logiciel de communication fonctionnant en V23 avec modem symétriseur (Minitel, par exemple), V23 avec modem non symétriseur (type Apple Sectrad), V21 et V22. Com23 permet l'importation et l'exportation avec les protocoles XModem ou YModem (en V21 et en V22) ou

How to Read MacDisketeria Descriptions

- The folder information, where appropriate, precedes the listing of program contents.
- Folder information is underlined
- **Program and file names are printed in bold**
- ***Shareware information printed in bold italic print.***

MACDISKETERIA

Kermit (en V21, V22 et en V23) et gére les formats MacBinary et BinHex."

Mac Disk # 13.08:
Telecommunications 8

WW IV BBS 2.2 *f*: **bbs:** This is a complete Macintosh bulletin board system much as MouseHole or RRBBS (Red Ryder BBS). It runs on any Mac with a minimum of 512K RAM and a hard disk is recommended. It supports 300/1200/2400 baud, D.C. Hayes 100% compatible modems and the U.S. Robotics Courier HST 9600 baud modem. A summary of features and capabilities is included in the **wwiv mac bbs 2.2 readme** file, **WWIV BBS Docs** is the large MacWrite description and the utilities are documented in **Utilities readme**. Not tested. ***Shareware – $25 for SYSOPS and $10 donation is suggested for regular BBS users.***

Mac Disk #19.16:
StackWare 16

Games, More Games and a Surprise !

Concentration: This is the old game of concentration using Icons rather than cards. The Icons themselves are interesting. This is a very well designed stack, easy to operate.

Day At The Racetrack: This well laid out stack consists of a racecourse on which two players compete with their moves determined by the spin of a die. The scripting is interesting and the game is straight forward.

HyperCraps 1.02: A limited demo version of the casino game Craps. Version 2.0, which registered owners will receive, permits a full range of betting using the entire Craps table. ***Shareware – $12.50 which brings version 2.0.***

hyperPanic: Here's the ***surprise***. Not a game but an experience. This stack shows how imaginative Stackers can be and at the same time what the "computing habit" can do to us mortals. Enjoy !!! ***Shareware $5 or $10 depending on whether or not you are employed and the quality of your job.***

HyperJotto 1.1: How large is your vocabulary? Here is an excellent way to enlarge it and have fun also. This game is for all the family from 6 year old to the most expert lexicographers, as there are four levels of play for Beginners, Advanced, Wordsmiths and Masters. The dictionary contains 10,000 five letter words. Excellently laid out and very challenging; like peanuts, it's hard to stop playing. ***Shareware – $15.***

Hyperquackey 1.1: This is another excellent word game, with a particularly good stack layout. The game can be played by all the family and is an exceptionally good game to start the young on to learn words. Throw the lettered dice and try to make three, four, five, or more lettered words. As noted by the author, the stack is a bit sluggish.

LottoBlaster: Play this Lotto game and really see how futile your chances are of being a winner playing the real Lotto. You pick 5 Lotto sets of numbers and the Mac will generate the "winning" numbers, if you can win.

puzzles: Four puzzles that are well done with the standard Mac Puzzle being duplicated. Included is the standard 15 number Mac Puzzle, a 9 number version, the standard jumping game, and a pyramid version of it. The nice thing about this stack is that the solutions are included and the stack will walk you through the solutions.

Yahtzee 3.0: From England comes this stack of the game of Yahtzee. Although this stack has many fields and buttons, it does not have that crowded feel. You can really got hooked on this one. ***Shareware – Whatever you think its worth.***

Mac Disk #21.04:
HyperCard Externals 4

Abbreviations: This is a set of XCMDs that replace and extend the hide/show and lock/unlock commands in HyperCard. You can type an abbreviation for the command and optionally hide/show or lock/unlock multiple fields or buttons at one time. It can speed up the operation of your scripts tremendously over doing this in HyperTalk.

About XCMD 1.1: An XCMD that can installs an "About..." and/or a "Help..." menu under the Apple Menu. This XCMD installs the menu items but you still must write the scripts for what the commands will then do. A simple implementation that makes your stacks a little more elegant.

ChooseIcon & CustomFileName: The ChooseIcon XFCN calls a large dialog box displaying icons, much like the "Icon" button in the button Info does, and returns the icon id of the icon the user selects. You can have a custom prompt and limit the icons displayed to the ones in the current stack or all available icons. CustomFileName XCMD is similar to FileName only it returns three lines as the result; the path to the name (just like FileName), the file Type, and the file Creator. Again you can optionally pass a prompt asking something of the user.

Classical Icons Stack: There are over 1400 Icons in this stack in picture form. If you want to use them in your own stacks, you will need to use Steve Fine's Icon Maker or use the Lasso or Marquee tools to transfer them to your stacks and then use a transparent button. ***Shareware – Send a disk full of stacks or public domain software.***

Columns: The **Columns** XFCN was developed to display spreadsheet text files in a HyperCard field, it will read a data list and return the list with spaces appended to form columns in a HyperCard field. You can easily also read data into a variable and then sort it into columns. This stack also includes a ShutDown + XCMD that gives you a choice of Canceling, going to the Finder, or actually using ShutDown.

Development Tools: This stack was written as an aid to HyperTalk programmers. It can give you complete documentation of a card or a stack, lists of global variables in a stack or a sorted global variable cross-reference list. This stack makes use of a pair of external functions, find and sort, for finding a string in a container and sorting a container. The stack is free but the two XCMDs are not. ***Shareware – Stack free, but $15 for use of the XCMDs in your own stacks.***

HC AppleTalk: This file includes three XFCNs for use with AppleTalk networks. Included is an example of each XFCN in use. The LookUp XFCN will lookup who is on an AppleTalk network, the Register XFCN will register an entity on the network and the Remove XFCN will remove an entity from the network. LookUp is a useful function, but the other two are not really very useful.

NewFolder: NewFolder will give your stacks the ability to create new folders from within HyperCard. You will need to write your own script to call the external command, but it works well.

Retriever!: This stack acts as an auto-pasting scrapbook for your HyperCard items such as buttons and fields. You can store often used buttons and fields and use this stack as a scrapbook, when you go to the stack it will automatically copy whatever you click on and you can then paste it back into another stack. ***Shareware – $5 or $10 donation would be greatly appreciated.***

TrapReturn: An XCMD that disables the return key when editing a text field. It sends a message to HyperCard which allows you to tell the user anything you want.

IMakeIcon Stack *f*: **MakeICON Stack:** This stack supplies an external command which enables the user to create ICON type resources in a "fat bits" mode window. You can create your new icon and then install it into your own HyperCard stacks. Included in the folder is the source code for creating the command.

RezMover *f*: **RezMover:** This is a stack for StackWare developers and others that want to copy and delete XFCN and XCMD resources between stacks without resorting to ResEdit. The author has tried to make it's operation as close to the Font/DA Mover as possible to make it easy to use. This stack contains two new XFCNs: "ResList" which lists the resources of a given type in a selected file and "ResDelete" which will delete a selected resource. **RezMover Help** is the documentation and help stack.

XCMD *f*: Four files for use with Lightspeed Pascal in writing external commands and functions for HyperCard.

TpXCMD Info *f*: Thirteen files for use with Turbo Pascal in writing external commands and functions for HyperCard. Included with the folder is a **READ ME FIRST!!!** file detailing the specifics of using Turbo Pascal to create XCMDs and XFCNs, templates for both XCMDs and XFCNs, and the **XCMD.HowToUse** file is Turbo Pascal specific. If you use Turbo Pascal this is a good place to start to create your own externals.

To order by mail use the form on the Member Services page.
5 1/2" disk: $3 member, $6 nonmember.
3 1/2" disk: $5 member, $8 nonmember.
Deduct $1/ 3 1/2" disk after first 5.
POSTAGE: Add $1/disk up to $5 max.

DOS 3.3 Volumes
41 IAC 25 Mach. Lang. Util.
42 One Key DOS
43 IAC 29 Utilities H
44 Utilities I
45 Diversi-Copy
46 French Vocab. Tutorial
47 Tic-Tac-Toe in French
48 Boot for I'Hote
49 I'Hote Story
50 I'Hote Quiz
51 French Poetry Tutorial
52 Apollinaire Biography
53 Albert Camus Interview
54 Tic-Tac-Toe in Spanish
55 Rafel-Boot
56 Rafel
57 Rafel Quiz
58 Matute
59 Lo Fatal
70 Business/Math/Statistics
71 Music
72 Keyboard Games
73 Text Adventure Games
74 Paddle Games
75 Color Graphics for Fun
76 Education
77 Utilities
90 Spreadsheet C Genl. Bus.
91 Spreadsheet D Investment
92 Spreadsheet E Bus. Recd.
93 VisiPlot & VisiTrend
95 Spreadsheet F-Coin Coll.
100 Utilities A
101 Utilities B
102 Games A
104 Business A
106 Science Engineering
107 Games B
108 IAC 10 (Graphics)
109 IAC 11 (Applesoft Tutrl.)
110 Personal/Education
111 Games C
112 Utilities C
113 Business B
115 IAC 12/13 Misc.
117 Picture Packer
118 Utilities D
119 IAC 15 Misc.
120 IAC 16 Misc.
122 IAC 17 Misc.
123 French Vocabulary
124 Utilities E
125 IAC 18 Misc.
126 Sights and Sounds
127 Math/Science
128 Games D
130 Diversi-DOS (rev.)
131 Personal/Educ. 2
132 IAC 19 - Utilities F
133 IAC 20 - Pascal & DOS3.3
137 IAC 21 Spreadsheet A
138 IAC 23 Utilities G
139 IAC 24 Education 3
140 Education 4
141 Special Data Bases
142 IAC 28 Pinball Games
143 Sports
144 IAC 27 Applesoft Prog.
145-147(3 disks)Ap.Logo Util.
150 EDSIG1 (Elem. Math)
152 IAC 31 Miscellaneous
153 Investments A
154 Investments B
155 IAC 33 Miscellaneous
156 IAC 35 Applesoft-AW//e
157 IAC 36 Arcade Games
158 Apple Logo Programs
159 Recipe Files
160 Utilities & Games
161 Wizard Worker
162 Games E
163 Graphs and Displays
164 Games F
165 Happy Holidays
166 Charts and Graphs
167 IAC 40 - Pilot Lang.
168 IAC 41&47 - AW Util.
169 Hayes Term. Prog.
170 Love's Follies (Utilities)
171 Cat-Graphix
172 Print Shop Graphics
173 Riley's Pers. Instrum.
174 Imageworks
175 No Name Yet
500 Master Catalog Listing
501 Util.-Beginner's Choice
502 Util.-Intermediate User
503 DComm
504 Database - LOGIC
505 Reading Fun
506 Astronomy Programs
507 Griffith Observatory
508 Educational Games G
509 Educational Games H
510 Education - Math
511 DOS 3.3 System Master
512 DOS 3.3 Tutorial

Eamon Series Volumes
180 Dungeon Designer
181 Beginners Cave
* 182 Lair of Minotaur
* 183 Cave of the Mind
* 184 Zyphur Riverventure
* 185 Castle of Doom
* 186 Death Star
* 187 Devil's Tomb
* 188 Caves of Treas.Isl.
* 189 Furioso
* 190 The Magic Kingdom
* 191 The Tomb of Molinar
* 192 Lost Isl. of Apple
* 193 Abductor's Quarters
* 194 Quest for Trezore

*Requires disk #181
Eamon disks 195-229 are also available. See description in Member Reference Book.

ProDOS Volumes
802 Utilities (A)
803 Filecabinet
804 Shareware
806 ZAP
807 Imageworks
808 Comm-Term
810 Haunted House
811 Adventures Disk
812 Toddlers and Kids
813 TAWUG-1
814 TAWUG-2
815 TAWUG-3
816 TAWUG-4
817 Telecom
818 1987 AW Tax Template

Pascal Volumes
(See also 133)
300 :ATTCH 1.1/BIOS
301 302 303 304 305 306
307 308 309 310 311 312
313 314

CP/M Volumes
401 Master Catalog
402 Utilities 1
403 Communications
404 Utilities 2
405 Utilities 3
406 ZCPR2 Install
407 ZCPR2 Documentation
408 ZCPR2 Utilities
409 Modem 730
410 Essential Utilities
411 Text Editor
412 Spreadsheet
413 MDM740(SSC&Com)
414 MDM740(7710&A-Cat)
415 Orig. 350 Pt.Adventure
416 Kermit Source Code
417 Kermit Documentation
418 Kermit Running Code
419 Util.-Z83,REZ,VDE
420 Small "C" Compiler

Apple /// Volumes
1000 /// SIG PD Catalog
1001 Games Volumes 1 & 2
1002 Basic Utility Vol.1&2
1003 Footnote ///
1004 Sys. Utils & Data
1005 New Member Disk
1006 Word Proc. & WPL
1007 Games for Kids
1008 The Best of MAUG
1009 The Best of the Source
1010 The Best of TAU
1011 D3. Backup
1012 Sketchpad&Slideshow
1013 A3 Diagnostics
1014 Basic Boot Disk
1015 Best of ///s Company
1016 AppleCon

Pohlman Disks:
1017 Disk 1 1018 Disk 2
1019 Disk 3 1020 Disk 4
1021 Disk 5
1022 Basic XT and Utilities
1023 The Retriever
1024 Power Print ///
1025 Disk Window
1026 Data Window/Source
1027 Power Cat/Basic XRF
1028 ASCIDIF(Bloom)
1029 Ink Well Manual
1030 Ink Well
1031 Basic Extension
1032 TERMINALL Manual
1033 TERMINALL
1034 PowerKeys DM+
1035 The Best of Bloom
1036 RAM+3/2NFRO

Apple IIGS Volumes @ $5
2001 Utilities & Pictures A
2002 Demo Disk A
2004 Slide Show I
2005 Demo Source Code 1
2006 Demo Source Code 2
2007 M18 Courses
2008 Odd Bits I
2009 GS Fonts I
2010 GS Fonts II
2011 GS Fonts III
2012 AW Tax Template
2013 Odd Bits II
2014 Sounds I
2015 Sounds II Nostalgia
2016 Slide Show II
2017 Slide Show III
IIGS Systems Disk

Macintosh (400K) @$5
31.1 Dun.Doom/Eliza Talks
32 Fun & Games II
35 Fun & Games III
40 Mac Videos
41 Cap'n Magneto
42 Studio Session (512K)
44 Boston II Fonts
45 Games IV
46 Games V
47 Fonts IV
48.3 Fonts V
54 Games VI
55 Games VII
56 Games VIII
57.1 New Memb. Disk 86
59.1 CE Sampler II
74 Fun & Games IX
75 Fun & Games X
76 Fun & Games XI
77 Fun & Games XII
78 Fun & Games XIII
79 Fun & Games XIV
80 Fun & Games XV
84 Fun & Games XVI
85 Fun & Games XVII
89 Fun & Games XVIII
91 Fun & Games XIX
92 Education II
93A & 93B Fonts VI
95 Fun & Games XX
96 Fun & Games XXI
97 Fonts VII
99 Inits I
100 Fonts VIII
101 Fonts IX
104 Fun & Games XXII
105 Fun & Games XXIII
106 Fun & Games XXIV
108 Fun & Games XXV
110 Fonts XI
113 Fonts XII
120 Inits II
123 Graphics II
128 Fun & Games XXVI
134 Fun & Games XXV
143 Games XXVI
146 Fonts XIII
147 New Member's Sampler
150 Games XXVII-Arcade
151 Games XXVIII-Strategy
153 Games XXIX

Mac II (800K)
20.01 Graphics I
20.02 GrayView & DAs
20.03 Miscellaneous
20.04 Graphics II
20.05A Ray Trace Programs
20.05B Ray Trace Source
20.06 Color
20.07 Graphics 3

DAs Series
10-disk set $35*
2.01A 2.02A 2.03A 2.04A 2.05
A2.06A 2.07A 2.08A 2.09A 2.10A

FKeys Series
4.1 4.2

Paintings Series
5-disk set $17.50*
11.01 11.02 11.03 11.04 11.05

Sounds Series
9-disk set $31.50 *
12.01 12.02 12.03 12.04 12.05
12.06 12.07 12.08 12.09

Programmer/Hacker
14.01 Love's Labors Lost

Misc. Util. Series
7-disk set $24.50*
15.01 15.02 15.03 15.04
15.05 15.06 15.07

Util. Series
7-disk set $24.50 *
16.01A 16.02A 16.03A 16.04A
16.05A 16.06A 16.07A

Word Proc. Series
3-disk set$10.50*
17.01 17.02 17.03

Adobe Fonts Series
10-disk set $35*
18.01 18.02 18.03 18.04 18.05
18.06 18.07 18.08 18.09 18.10
* Regular price when purchased individually.

HyperCard StackWare:
19.01 (aka 136) Utilities
19.02 (aka 137) Clip Art
19.03 Applications
19.04 Monster Hunt
19.05 Stackware for Children
19.06 Monty Python
19.07 Tutorials for Applns.
19.08 The AIDS Stack
19.09 Music Generation Stacks
19.10 Music and Sound Stacks
19.11 HyperCard Test Team
19.12 Clip Art
19.13 Christmas Stacks
19.14 Neat Stacks
19.15 Miscellaneous Stackware

Apple System 6.0.2
4-disk set @$20
System Tools Utilities 1
Printer Tools Utilities 2

HyperCard Externals
21.01 21.02
21.03 21.04

HyperCard Upgrade 1.2.1
Require proof of purchase

Mac II (800K)
20.01 Graphics
20.02 GrayView & DAs
20.03 Miscellaneous
20.04 Graphics 2
20.05A Ray Trace Programs
20.05B Ray Trace Source
20.06 Color
20.07 Graphics 3
20.08 Utilities
20.09 Miscellaneous 2
20.10 Image .61
20.11 Pixel Paint Picture
20.12 Vision Lab
20.13 Miscellaneous 3

WAP DISKETERIA

Desktop Publishing SIG

Seminar Series

• Seminars • • Seminars • • Seminars • • Seminars • • Seminars • • Seminars • • Seminars •

Nov 16 Wed
7:30–10:30 pm
Nov 19 Sat
9:30 am – 12:30

Color Pre-Press: Learn how to produce color artwork with desktop publishing tools. How to handle registration marks, overlays, signatures, and imposition. How color halftones are produced and the limitations of current technology. Understand the trade-offs between electronic technology and traditional methods and their costs.
Presenter: David W. Buell, service manager of Imprints, a high tech quick printer and dtp service bureau.
Location: Imprints, 1850 K St. NW

Nov 30 Wed
7:30–10:30 pm
Dec 17 Sat
9:30 am – 12:30

Scanning: Learn how to use a scanner for best results with art from various sources (photos, magazines, books, etc.). How scanners work, the meaning and importance of dots per inch and line screens, the do's and don'ts of scanning, and what you can or can't do with a scanner. See actual examples of scanning using a MacScan.
Presenter: Dana Martin is Art Director of Promotion at the Washington Times with lots of experience in scanning and printing scanned art. Dana also has her own graphics company, Martin Graphics.
Location: Nov 30: Washington Times, Promotion Dept., 3rd floor, 3600 New York Ave NE
Location: Dec 17: RGB Technologies, Inc., 6862 Elm St. McLean, VA

Dec 3 Sat
9:30 am – 12:30

Color Presentations: Familiarize yourself with the strengths and weaknesses of desktop presentation packages including: Powerpoint, Standout (Ready, Set, Show), Cricket Presents, Excel, Cricket Graph, PageMaker, FreeHand, MacDraw and Canvas. Also covered will be the use of a Mac II,Tektronix color printer and slide services.
Presenter: Laszlo Berty, owner of A & D Presentations, specializes exclusively in presentation design.
Location: A&D Presentations, 2070 Chain Bridge Rd. Suite 120, Vienna VA

Dec 7 Wed
7:30–10:30 pm
Dec 10 Sat
9:30 am – 12:30

Color Output: Learn the ins and outs of creating and printing color slides and color laser prints. Advice and tips on preparing material so a service bureau can give you what you want. How a color scanner works. Bring samples of your own work to be used during the seminar.
Presenter: David W. Buell, service manager of Imprints, a high tech quick printer and dtp service bureau.
Location: Imprints, 1850 K St. NW

Dec 10 Sat
1:30-5:30 pm
Dec 14 Wed
7:30 –10:30 pm

Design & Production: Learn how publications are designed and conventionally produced. Each stage in a project is discussed—design, type specification, typesetting, galleys, mechanicals, prepress production, and printing. Tips for cost-effective production. *Presenter:* Susan Turk is a publication and production consultant recently relocated from New York where she was production director for Norman Lear's *Channels* magazine. Locally she's worked on *The Washington Dossier* and *The Washington Business Review.*
Location: Electric Logic, 2025 Eye St. NW

The Fine Print

Each seminar costs $25 for members of Washington Apple Pi or Capital PC User Group and $35 for non-members.
Use one form per attendee—make copies of the form if you must.
Classes filled on a first come first served basis. Class size limited to twelve.
In order to be eligible for a refund you must cancel no less than 5 days before the class meeting date. Refunds are batched and mailed quarterly. You may apply your refund to another seminar.
Please volunteer to help with this program.
Make checks payable to the Washington Apple Pi. **Payment must accompany this form.**

Name _____

Address _____

_____

City/State/Zip _____

Phone (day) _____ **(evening)** _____

Number of classes _____ **x ☐ $25 or ☐ $35 =**

Total enclosed $ _____

Member Number _____

Color Pre-Press	**☐ Nov 16**	**☐ Nov 19**
Scanning	**☐ Nov 30**	**☐ Dec 17**
Color Presentations	**☐ Dec 3**	
Color Output	**☐ Dec 7**	**☐ Dec 10**
Design & Production	**☐ Dec 10**	**☐ Dec 14**

Mail this form with your check to:
Thomas J. Piwowar & Associates, Inc.
1500 Massachusetts Ave. NW, Suite 34
Washington, DC 20005

Washington Apple Pi, Ltd.

8227 Woodmont Avenue, Suite 201
Bethesda, MD 20814
(301) 654-8060

Membership dues in the Washington Apple Pi are $32.00 for the first year and $25.00 per year thereafter (in regular US currency,) beginning in the month joined. Applicants are asked to fill in the following form as completely as possible. Information gained here helps the Club serve you better. Please be sure to check the appropriate box concerning release of your name and information through the membership directory. You may elect to have your Journal sent by First Class mail instead of the usual bulk mail, and to avail yourself of access to the WAP bulletin board system (TCS) by checking the appropriate box and enclosing the additional fees.

NAME: _____
ADDRESS: _____
_____
CITY/STATE/ZIP: _____
Telephone numbers Home: ( ) Work: ( )

What types of computer do you own or use regularly ? (Check [✓] all that apply.

☐ Macintosh 128K	☐ Apple II	☐ Apple ///
☐ Macintosh 512K	☐ Apple II+	☐ Macintosh XL/Lisa
☐ Macintosh Plus	☐ Apple IIc	☐ Franklin
☐ Macintosh SE	☐ Apple IIe	☐ IBM-PC or Compatible
☐ Macintosh II	☐ Apple II GS	☐ Other _____

PLEASE INDICATE YOUR OCCUPATION:

Do you want the New Member Packet for the **Apple II computer family** _____ or the **Apple Macintosh family** _____ of computers? (Check [✓] one only.) Indicate if you DO _____ or DO NOT _____ ***AUTHORIZE THE RELEASE OF YOUR NAME, CITY, ZIP CODE AND TELEHONE NUMBER TO OTHER WAP MEMBERS*** through the Membership Directory. (Check [✓] one only.)

NOTE: Club policy prohibits releasing a member's name and associated information unless you release it by checking the appropriate item above.]

If you DO NOT wish to receive occasional "selected" commercial materials, please check here _____ . (NOTE: WAP does not release its membership lists to anyone. Such mailings are done by WAP at a fee to the mailer.)

Signature _____
Date Signed _____

PLEASE ENCLOSE PAYMENT, (CHECK OR MONEY ORDER,) PAYABLE TO WASHINGTON APPLE PI, LTD.
FIRST CLASS MAIL REQUESTS, FOREIGN APPLICANTS, AND BBS USERS SHOULD ADD THE ADDITIONAL FEES.

_____ First Class Mail	$15.00
_____ Mail to Canada, Central American,W. Indies, Mexico Columbia, Venezuela	$16.00
_____ Air Mail to Europe/other S. Amer. Countries	$33.00
_____ Air Mail to Asia and Elsewhere	$43.00
_____ Surface Mail to Europe, Asia and Elsewhere	$14.00
_____ TCS (Bulletin Board) Fee (if elected by you.)	$ 6.00

PAYMENTS MUST BE MADE IN US DOLLARS, PAYABLE ON A US BANK. PLEASE ALLOW 2-3 WEEKS FOR PROCESSING.

First Year's family or individual fee:	$32.00
First Year's student fee (enclose copy of Student ID.)	$25.00
TOTAL FEES ENCLOSED	$_____

WAP TUTORIAL REGISTRATION

Apple II: The following three WAP tutorials are being offered to **Apple II** owners on the first three Tuesday evenings of the month from 7:30 to 9:00 PM, at the office, 8227 Woodmont Ave., Bethesda, MD. We are currently alternating months between the IIgs and other Apple IIs. (The tutorials start promptly at 7:30; if you bring your computer please arrive 15 minutes early to set up.) You may sign up for any or all of the series. They are designed for the "beginner" and will be repeated monthly. The fee for each **session** is **$10**. You are urged to bring an Apple, monitor and disk drive. (Monitors are available for the 1st 5 registrants - call office.) Please note that WAP **does not** have equipment for you to use; if you do not bring your own, you will have to look over someone's shoulder.

- **WELCOME TO THE WORLD OF APPLE** ( ) December 6 (IIgs specific)
- **HOW TO USE YOUR APPLE SOFTWARE** ( ) December 13 (IIgs specific)
- **POPULAR APPLICATIONS** ( ) December 20 (IIgs specific)

Macintosh: Tutorials for the beginners are regularly given on 3 Monday evenings of the month at the office, from 7:15 - 10 PM. They are also given in Northern Virginia on 3 Thursdays of the month (except December) in Room 110 of Fairlington United Methodist Church, Alexandria. The fee for each **session** is **$10**. You may sign up for 1, 2, or all 3 sessions. You are **strongly urged to bring your Macintosh**—WAP does not have equipment for you to use. (Note to Mac II owners: You are not expected to bring your computer, but we do not have a Mac II at WAP.) These tutorials fill up quickly—call the office to verify space before mailing your registration.

( ) Dec. 5 (Office) - Introduction to Macintosh. Prerequisite: Guided Tour and Users Manual.
( ) Dec. 12 (Office) - Intermediate Mac Skills. Prerequisite: Familiarity with Desktop, disk copying, etc.
( ) Dec. 19 (Office) - Personalizing Your Mac for Productivity. Prerequisite: 1st two sessions or equiv.
( ) Jan. 12 (No.Va) - Introduction to Macintosh. Prerequisite: Guided Tour and Users Manual.
( ) Jan. 19 (No.Va) - Intermediate Mac Skills. Prerequisite: Familiarity with Desktop, disk copying, etc.
( ) Jan. 26 (No.Va) - Personalizing Your Mac for Productivity. Prerequisite: 1st two sessions or equiv.

Non-Regular Tutorials: The following tutorials are being offered in the next few months. The fee for these tutorials is $15 ($20 for non-members). A more detailed description is given elsewhere in this publication or was given in a previous month.

( ) **Apple II Telecommunications - Allan Levy, Saturday, December 10, 9-12 AM Office.** Fee $20 ($25). Do not bring computer.
( ) **Macintosh Telecommunications - Allan Levy, Saturday, December 10, 1-4 PM Office.** Fee $20 ($25). Do not bring computer.

Effective January 1989, the WAP Tutorial fees will increase slightly. The regular monthly Beginning Tutorials will increase from $10 to $15 per session for members, and from $15 to $20 for non-members. Special (non-regular) tutorials will increase from $15 to $20 for members, and from $20 to $25 for non-members.

Please use the form on the member services pageand return it with fee(s) made payable to Washington Apple Pi, Ltd.

NEW!

LOW FACTORY DIRECT PRICES!

DEALERS CALL!
UNIV & SCHOOL P.O.'s WELCOME!

MEGABYTE RAM BOARDS!
The Ultimate in RAM Power!

Super Expander GS, a 100% replacement for Apple IIgs 1 meg board. Fully IIgs hardware & software compatible. **ØK** $39

Super Expander E, for U.S. and European IIe. **Licensed by Applied Engineering.** 100% replacement for extended 80 column card. Expands Appleworks **desktop** to **998K** and allows instant switching between Appleworks modules. **ØK** $59

Super Expander C, expands IIc to 1152K and Appleworks **desktop** to **1062K**, plus allows instant switching between modules. **ØK** $69

Super Expander +, operates in any II+ slot, plus 0. Expands Appleworks **desktop** to **1014K**, & allows instant switching between modules. (80 Col req for Appleworks). **ØK** $79

ABOVE w/256K, 512K, or 1MEG CALL

QUIET COOLING FANS!

SuperFan II for the **II+/IIe.** Kensington style w/surge protect. $26

Super Cooler GS for the **IIgs.** No audio line interference. $24

APPLE COMPATIBLE PERIPHERALS!

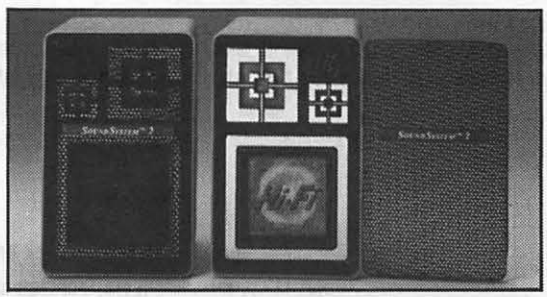
64K/80 Column Board expands IIe to 128K and adds 80 columns & hi-res. $35
Super 64K/80 Column Board w/64K $49
Super 64K/80 Column Board w/256K call
16K RAM Board expands II+ to 64K $34
128K RAM BD expands II+ to 192K. Combine w/Plusworks 2 for II+ Appleworks desktop of 136K. $64
Plusworks 2 Software allows II+ Appleworks operation. (req 80 col). $38
80 Column BD expands II+ display to 80 columns. (Videx compatible). $48
Super Serial Board 100% replacement for the Super Serial card. $48
Z80 CP/M Board opens the world of CP/M for your II+/IIe/IIgs. $34
Graphic Parallel Board w/Cable does text & graphic screen prints. $44
Parallel Board w/Cable for use where graphics is not required. $35
Disk Drive 5¼ w/speed adjust, specify your model w/order. $119

A/B Switchbox parallel or serial $29
A/B/C/D Switchbox (par or ser) $39
Numeric Keypad II for **IIe** $34
Numeric Keypad II for **IIc** $39
Joystick (specify your II model) $17
Joystick III similar to Mach III $24

TWO YEAR WARRANTY ON ALL PRODUCTS
CALL OR WRITE FOR OUR COLOR CATALOG
ADD $3 SHIPPING/COD OKAY/VISA/MC NO EXTRA FEE

SOUND SYSTEM ™ 2

NEW! 2-Way Stereo Amplified Speaker System
for your Apple IIgs, IIe, IIc, II+, and Macintosh



More versatile than the Roommates by Bose, this thunderous amplified speaker set will make all Apple speech, music, games, and other sound programs come to life on any Apple model computer.

Prepare to be blown away when you plug in this super powered speaker system, because the advanced design amplifier of the SoundSystem 2 provides over 3 times the power of any amplifier board.

And the sound? You won't believe your ears, because the built in 2-way stereo super heterodyne speakers, coupled with state of the art filtering, provide an enhanced high quality sound, crystal clear to any listener.

Release the full sound potential of your Apple computer with the versatile SoundSystem 2. You never knew your Apple could sound so good!

FEATURES:

- Built in advanced design amplifier.
- Volume control (you'll need it).
- 2-way super heterodyne speakers.
- State of the art noise filtering.
- No slot operation.
- 100% Apple software compatible.
- 100% Apple hardware compatible. (specify your model with order)
- Complete Documentation.
- Full two year warranty.

LOW FACTORY DIRECT PRICE **$129 (PAIR)**

NEXO DISTRIBUTION (619) 474-3328 10am-6pm/Mon-Fri
914 East 8th Street, Suite 109, National City, California 92050
Apple, Appleworks and Macintosh trademarks of Apple Computer, Inc. Bose & Roommates are trademarks of Bose Corp.

*TEMPEST Macintosh™ II Personal Computer

- Full 32-Bit 68020 Microprocessor 15.7 Megahertz
- 68881 Floating Point Coprocessor
- 1MB RAM, Expandable to 8MB
- 6 NuBus Expansion Slots
- 2 RS232/RS422 Ports
- SCSI Interface
- TEMPEST Mouse
- Detachable Extended Keyboard 105 Keys, 15 Function Keys
- 800K Built-in Disk Drive (Second Drive Can Be Added)
- External Hard Disk Drive, 20MB, 40MB, 80MB (Option)
- 12″ TEMPEST Apple® High-Resolution Monochrome Monitor
- 13″ TEMPEST Color Monitor 800 × 560 (Option)
- 19″ TEMPEST High Resolution Color Monitor, 1280 × 1024 (Option)

Authorized Value Added Reseller

™ Apple, Macintosh, and the Apple Logo are registered trademarks of Apple Computer, Inc.

TEMPEST Products Incorporated

(703) 450-9090 1439 Shepard Drive Sterling, VA 22170

Washington Apple Pi, Ltd.
8227 Woodmont Avenue, Suite 201
Bethesda, MD 20814

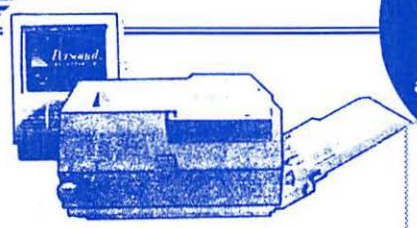
Bulk Rate
U.S. Postage
PAID
Permit #5389
Silver Spring, MD
20910

Forwarding and Address Correction Requested

Mac Corner
The Macintosh Only Store

The GCC Printers Prevail

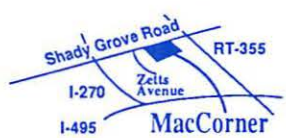
GCC's Printers Outdistance Apple's in all Major Areas! a Comparision Follows:



	PLP (PLP)	Laserwriter SC
Price	$1999 ($2199)	$2799
Outline fonts	Yes	NO
Scaleable/Rotatable	Yes	NO
True Italic & Bolds	Yes	NO
Font Families included	6 (13)	4
On Screen Page Preview	Yes	NO
Darft Modes	3	NONE
Kerning and Tracking	Yes	NO
Quickdraw Extensions	16	3
Reduction or enlargement	25-400%	50%,75%
PPM	6	8
Networking Options	2	1
Envolope Feed	Yes	OPTIONAL
Legal Paper Handling	Yes	OPTIONAL
Cost If upgraded To Posscript	3999	5399

	BLP	Laserwriter NT
PRICE	$4199	$4995
Postscript Version	49	47
Typefaces	39	35 ($375 option)
SCSI Posrt	Yes	NO
Upgreadable RAM	Yes	NO
Appletalk	Yes	Yes
Serial Port	Yes	Yes
Paralell Port	Yes	NO
Envolope Feed	Yes	OPTIONAL
Legal Paper Handling	Yes	OPTIONAL
Toner Cost	$50 (list)	$130 (list)

Buy a PLP or BLP from MacCorner and get up to $500 of Graphics Software Free!
For the duration, when you buy a GCC Laser from Maccorner you can choose one amongst 5 different graphic packages absolutely free, Including Pixel Paint, MacPaint II, Full Paint, Graphic Works or SuperPaint.
Stock is limited so hurry!

MacCorner
Sales & Service
Monday Through Friday
9.30 am-6pm

MacCorner
8653 Zetts Avenue
Gaithersburg, Maryland 20877
(301)948-1538