mini'app'les Newsletter $2.00

the Minnesota Apple Computer Users' Group, Inc.

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July Events

un	Mon	Tue	Wed	Thr	Fri	Sat
				1 MINI'AP'LES 7:00	**2**	**3**
4	**5**	**6**	**7**	**8**	**9**	**10**
11	**12**	**13**	**14**	**15** 🖐 7:00	**16**	**17**
18	🍎 **19** 7:00 4D 7:00	**20** II 7:00	**21**	**22** 🍎 7:00	**23**	**24**
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MINI'AP'LES Board of Directors – *Mini'app'les Members Welcome* – Washburn Lib., 5244 Lyndale Ave. S., Mpls – Greg Carlson, 544-8252

🖐 **FileMaker Pro SIG** – *Open Discussion* – Location pending – Steve Wilmes, 458-1513

🍎 **Apple II/GS Main** – Fridley Branch Lib., 410 NE Mississippi St, Fridley – Tom Ostertag, 488-9979

4D **Fourth Dimension SIG** – Metro II, 1300 Mendota Heights Rd, Mendota Heights* – Ian Abel, 920-5520

II **Apple II Novice SIG** – *Running Your Apple II: ProDOS* – Murray Jr. High, 2200 Buford, St. Paul* – Tom Gates, 789-1713

🍎 **Appleworks SIG** – *UltraMacros* – Murray Jr. High, 2200 Buford, St. Paul* – Les Anderson, 735-3953

⁇ **Macintosh Novice SIG** – *Open Forum* – Location pending – Tom Lufkin, 698-6523

Mac Programmers SIG – Murray Jr. High, 2200 Buford, St. Paul* – Gervaise Kimm, 379-1836

Macintosh DTP SIG – Call for day & location – Bob Grant, 827-6294

* see maps on back cover.

The HyperCard SIG and Macintosh Main SIG have been cancelled until August.

The THINK C Programmer's Workshop has been cancelled until September

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And introducing...

New Club Name!
(Proposal #1)

●mini'app'les

Board of Directors

President	Gregory L. Carlson	544-8252
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& Design SIG	Joy Kopp	440-5436
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Apple eDOMs:	Bill Job, Randy Peterson & Tom Gates
eDOM Sales:	Mac – Allen Mackler & Mary Kosowski
	Apple – Les Anderson

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CP/M	Jim Rosenow	(414) 261-2536
PACER Center	Karen Samuels	827-2966
TC/PC	Gervaise Kimm	379-1836

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♻

Questions – Please direct questions to an appropriate board member. Users with technical questions should refer to the Members Helping Members section.

Membership – Mini'app'les
attn: Bob Demeules, 559-0264 or write
P.O. Box 796
Hopkins MN 55343

All members receive a subscription to the newsletter and all club benefits. New members receive a package of member lists and software catalogs.

eDOMs		At Meetings	Mail Order
Members:	5 1/4" eDOMs	$3.00	Add $1.00 per disk, $4.00 maximum.
	5 1/4" System	$1.00	
	3 1/2" Apple/Mac eDOMs	$5.00	
	3 1/2" System	$3.00	
	3 1/2" System 7.0 (9 disks)	$15.00	
Non-Members:	5 1/4" eDOMs	$6.00	
	3 1/2" Apple/Mac eDOMs	$10.00	

Make checks payable to: Mini'app'les
Mail to Mini'app'les: Attention: eDOM Sales
P.O. Box 796, Hopkins, MN 55343

Dealers – Mini'app'les does not endorse specific dealers. The club promotes distribution of information which may help members identify best buys and service. The club itself does not participate in bulk purchases of media, software, hardware and publications. Members may organize such activities on behalf of other members.

Newsletter Contributions – Please send contributions directly to our Post Office, Box 796, Hopkins, MN 55343 or upload them to our BBS at 892-3317.

Deadline for material for the next newsletter is the 1st of the month. An article will be printed when space permits and, if in the opinion of the Newsletter Editor or Manager, it constitutes material suitable for publication.

Meeting Dates – Please phone calendar dates and changes to: Erik Knopp at 636-3244.

Mini'app'les BBS – 892-3317, 24 hours: 8 data, 1 stop, 0 parity
Mini'app'les Voice Mail – 229-6952
Advertising – *open*

Newsletter Publication Staff –

AppleLink Contributor	Tom Mehle	529-6779
Calendar Updates	Erik Knopp	636-3244
Calendar Layout	Hugh Johnson	780-6053
Contributing Editor	Tom Edwards	927-6790
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Contributing artist	Roy Sorenson	870-7366
Macintosh Editor	James Folmer	646-2003
Design & Layout	Hugh Johnson	780-6053
Publications Director	Hugh Johnson	780-6053

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ADVERTISERS

IF YOU ARE MOVING. . .

. . . please let us know six weeks before you move so we can change your address. Thank you.

Copy your newsletter mailing label showing current address in this space:

I.D.#: _____ Exp. Date: _____

Name: _____

Street: _____

City, St., Zip: _____

PRINT YOUR NEW ADDRESS HERE. ✓

Street: _____

City, St., Zip _____

MAIL TO: mini'app'les, P.O. Box 796, Hopkins, MN, 55343

Yes . . .

I'd like to join!

Please accept my

Mini'app'les MEMBERSHIP APPLICATION.

Please Print or Type:

1. Name _____

   _____

   Address _____

   City _____ State _____ Zip _____

   Res. phone _____ Bus. _____

   Renew ID# _____ Exp. Date _____

2. **Please enroll me as a mini'app'les member.**

   ☐ Individual $25.00   ☐ Foreign $40.00
   ☐ Student* $15.00   ☐ Educational $50.00
   ☐ Sustaining $40.00   ☐ Corporate $100.00

   *(must be a full-time student at an accredited institution)

3. **Please tell us your special interests:**

   Which personal computer do you use:

   ☐ Apple II   ☐ Macintosh Portable
   ☐ Apple III   ☐ Macintosh Powerbook
   ☐ Apple IIe   ☐ Macintosh Quadra
   ☐ Apple IIc   ☐ IBM or IBM clone
   ☐ Apple IIc+
   ☐ Apple IIGS   **Areas of Interest:**
   ☐ Laser - Other _____   ☐ Business Application
   ☐ Macintosh Plus   ☐ Home Application
   ☐ Macintosh SE   ☐ Educational Application
   ☐ Macintosh Classic   ☐ Desktop Publishing
   ☐ Macintosh LC   ☐ Other _____
   ☐ Macintosh II
   ☐ Macintosh SE/30   **Do you own or use:**
   ☐ Macintosh si   ☐ Printer
   ☐ Macintosh fx   ☐ Laser Printer
   ☐ Macintosh IIcx/IIci   ☐ Modem
                                 ☐ Scanner
                                 ☐ Other _____

☐ Referred by: _____

☐ Check if interested in volunteer opportunities.
   Special Areas: _____

☐ Check if you do not wish to receive non-club promotional mailings.

You'll receive your new member's kit in 3 to 6 weeks.

Make checks payable & mail to:

Mini'app'les
P.O. Box 796
Hopkins, MN 55343

AUGUST 1993

Board of Directors	7:00 Thursday, Aug. 5	–location pending–	Greg Carlson, 544-8252
Apple II/GS Main	7:00 Monday, Aug. 9	Fridley Lib, 410 NE Mississippi St.	11
HyperCard SIG	7:00 Monday, Aug. 9	East Lake Lib. 2727 East Lake St.	5
Macintosh Main	7:00 Thursday, Aug. 12	-location pending-	4
Fourth Dimension SIG	7:00 Monday, Aug. 16	Metro II, 1300 Mendota Heights Rd	2
FileMaker Pro SIG	7:00 Thursday, Aug. 19	Highland Park Lib., 1974 Ford Pkwy	20
Macintosh Novice SIG	7:00 Monday, Aug. 23	Highland Park Lib., 1974 Ford Pkwy	9
Picnic	Thurs., Aug. 26	–location pending–	
Programmer's Workshop	No Meeting	Restarts in September	21

1.	Dave Laden	488-6774	6. Melvyn Magree	559-1108	11. Tom Ostertag	488-9979	18. Gervaise Kimm	379-1836
2.	Ian Abel	920-5520	7. Joy Kopp	440-5436	12. Mark Evans	377-9000	19. Daron Applequist	938-7001
3.	Bob Grant	827-6294	8. Bill Langer	937-9240	15. Jim Ringquist	(218) 387-2234	20. SteveWilmes	458-1513
4.	Mike Carlson	866-3441	9. Tom Lufkin	698-6523	16. Tom Michals	452-5667	21. KevinKassulker	535-2968
5.	Peter Fleck	370-0017	10. Les Anderson	735-3953	17. John Hackbarth	(715) 246-6561	22. TomGates	789-1713

Coordinators – Please contact Erik Knopp (on our BBS or at 636-3244) by the 1st of the month to have your meeting listed correctly.
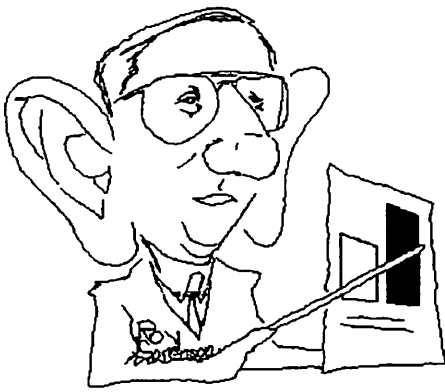
Members Helping Members

Need Help? Have a question the manual doesn't answer? Members Helping Members is a group of volunteers who have generously agreed to help. They are just a phone call away. Please call only during appropriate times, if you are a Member, and own the software in question.

Macintosh	**Key**	PostScript	8	Talk Is Cheap	3	TML Basic	3, 10
Adobe Illustrator	21	Power Point	5	TimeOut	2	TML Pascal	3, 10
Beginners	13, 14, 18, 24	QuickBasic	5, 6	TO Graph	2	Writer's Choice	15
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Freehand	22	**Apple II**	**Key**	**Apple IIGS**	**Key**	**Apple ///**	**Key**
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Helix	16	AppleWorks	2, 23	APW	20, 23		
HyperCard	6, 9	Ascii Express	3	Complete Pascal	10		
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MacDraw	5	Dazzle Draw	23	General Information	3, 10		
MacPaint	5	DB Master	7	Graphic Writer II/III	15		
Mac OS	4, 18, 24	Educational Software	23	GS/OS	3, 10		
Microsoft Excel	5, 6, 17	General Information	23	HyperStudio GS	3		
Microsoft Word	4, 5, 6, 14, 17, 24	Home Acc'n't	20	Merlin 16+	15		
Microsoft Works	11, 17	PublishIt!	23	Mousetalk	15		
Networking	5, 6, 13	ProTERM	23	PaintWorks Plus/Gold	15, 23		
PageMaker	4, 6, 17	Quicken	23	Prosel	2		

> If you would like to be a "Members Helping Members" volunteer, please leave your name & phone number on our BBS or leave a voice-mail message at 229-6952.

1.	Steve Wilmes	458-1513	E	9. Peter Fleck	370-0017	DEW	16. Arnie Kroll	433-3517	E
2.	Tom Ostertag	488-9979	E	10. Randy Dop	452-0425	EW	17. Michael Foote	507-645-6710	DEW
3.	Tom Gates	789-1713	EW	11. Ed Spitler	432-0103	D	18. Richard Becker	870-0659	EW
4.	Tom Edwards	927-6790	E	12. Bob Rosenberg	377-4300	EW	20. Steve Peterson	922-9219	EW
5.	Earl Benser	884-2148	EW		340-0234	D	21. Jodi Roste	933-1698	EW
6.	Dan Buchler	435-3075	E	13. John Hackbarth	715-246-6561	D	22. Nancy McClure	227-9348	DEW
7.	Ann Bell	422-1115	E	14. Jim Horswill	379-7624	DEW	23. Rand Sibet	566-8571	EW
8.	Fritz Lott	377-3032	E	15. Tom Michals	452-5667	DEW	24. Hugh Johnson	780-6053	DEW

D-days (generally 9 a.m. to 5 p.m.), E-evenings (generally 5 p.m. to 9 p.m.), W-weekends (generally 1 p.m. to 9 p.m.).
In any case, call at reasonable hours and ask if this is a convenient time for them. We appreciate your cooperation.

Now, here's th'deal...

by H. Ross Wheeler
(as told to Hugh Johnson)

Roy Sorenson

Now, let's dispense with the preliminaries and get straight to business, alright? Yer all aware of the problems we're having here. You don't need to be told. You know that the longer we let things slide with this newsletter, we're just setting ourselves up for more problems down th'road. We're just mortgaging our future and our childern's future.

As owners – yes, *owners* – of this great and wonderful users' group, we the members have to take some responsibility. For too long, we have abdicated our ownership responsibility. Now I have come to be your servant, and invest my time for you, but I've got dawghters and crazy ants in the basement, so I cain't do it all myself.

Now, here's th'deal. We're gonna give this publication a $10 haircut, and bring some order to these pages. We're gonna have particular pages devoted to particular, standard, monthly items. Take a look at this here:

Now, that's just a start. To go along with the new format, we'll need new personnel positions – and this is where you come in. The SIG Directors will take care of pages 4 and 5 – don't you worry about that. Even if you're a SIG Director yourself, don't worry; you'll do fine. Likewise with eDOM listings on pages 15 and 16; things aren't changing much with eDOMs (except they'll have to be shorter descriptions). And the Membership Director, Secretary, and Operations Director take their turns on pages 19 to 22. Don't you worry; this is old-hat stuff, the way it was always supposed to be done. Where we need new people is in these positions here:

- Apple // Editor – to scrounge up feature articles on pages 6 to 9.

- Macintosh Editor – James Folmer has already accepted this job, but I mention it just so's you know.

- Ask Mini'app'les Editor – a "Q & A" job for a plain-spoken techno-wizard.

- Someone to keep the "Members-Helping-Member" page up-to-date. Sounds like a good job for 'most anyone who's connected.

- Contributing Editors to scrounge up the latest product news. As always, we need these submissions from everone!

- Managing Editor – to make sure the stuff from the other editors dove-tails together like it ought to.

- Advertising Director – *Please step forward; we need to sell space!*

- Classified Ad Director – it's really a shame to see the current state of our classifieds, when they could be improved *so* much with just a little bit of effort. *Volunteer!*

Material can be submitted through several different channels. The most basic will be a "floppy disk network", where you just bring your stuff to a SIG meeting and hand it to the leader or someone else who will swap you a blank floppy in return. You'll hear more about the details soon. We prefer plain ASCII text files – no curly-quotes, no ligatures, no long dashes or elipses. Just think of it this way: if you cain't type a character on a good ol' Smith-Corona, don't use that character in a file you send us.

Well there y'have it. If you see a position you can fill, call Hugh Johnson at 780-6053. The important thing to consider is, it ain't rocket science, and most of this work will only take a few minutes a month. That's a small price to pay, to preserve truth, justice, and the Mini'app'lian way!

Thank you, and good night. ❤
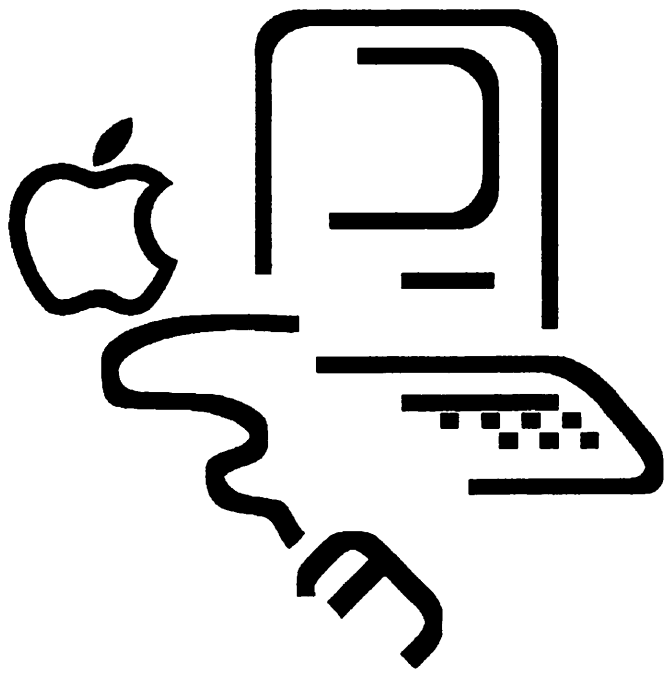
Mac

Mac HyperCard SIG

by Peter Fleck

A recent posting in the usenet news group for HyperCard (comp.sys.mac.hypercard) indicates that the development team is hard at work on a new version but with no release date. It will not contain full support for color because "HyperCard developers have convinced us that getting a release out as soon as we can is more important than delivering color" (Kevin Calhoun, a member of the development team). Once upon a time, there was a color version in the works at Claris, but it has been trashed and Apple (who is back in control of HyperCard) is starting from scratch.

If there are feature you would like to see in HyperCard or bugs you would like to report (and you have access to the Internet), you can send e-mail to:
HC.REQUESTS@applelink.apple.com (features requests) or
HYPERBUG$@applelink.apple.com (bug reports).

NO Meeting in July!

Next Meeting: Monday, August 9 at the East Lake Library in Minneapolis, 2727 E. Lake Street, near Minnehaha Mall, Target, Rainbow, and Podany's.

Times: 7:00 – 8:45

Directions: From I-94, take the 25th Ave/Riverside exit and go south on 25th (becomes 26th) to Lake Street, then left 1 block. There is a parking lot behind the library, on-street parking (you don't have to plug the meters after 6 p.m.), and a church lot just east (don't use the church lot if it looks like something is going on at the church, please). ⚫

Museum Computer Expo Time Again!

by Tom Gates

The computer expo with the Science Museum is coming up and we are again looking for volunteers from Mini'app'les to help man some 10 booths during this 2-day affair in September (Friday and Saturday the 10th – 11th).

A kick-off coordination meeting will be held the end of June with additional meetings taking place during July and August. We're looking for people to show the many aspects of the Apple/Macintosh computers.
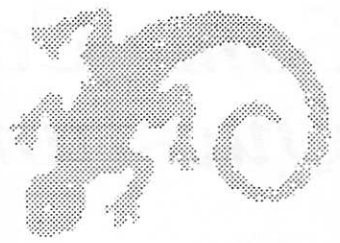
Contact Tom Gates at 789-1713 for additional information and to help with planning and coordination, or to volunteer to help run a booth for a couple hours one or both days.

Thanks! ⚫

Chameleon –
The Ultimate Desktop Pattern Utility
product review by Greg Carlson

After having gone to the May Mini'app'les Macintosh Novice SIG and seeing the demonstrations of Seventh Heaven and Chameleon, I decided to provide a review of some of the software.

Chameleon is provided on one high-density disk (they will provide two 800K disks upon request).

Chameleon is a self-extracting archive application that expands to a 2.8 Mb folder called "Chameleon." The program is a desktop pattern enhancement utility. If you are tired of the

on your desktop, click on "Apply". Your desktop pattern changes immediately. This change is not permanent and will disappear when you restart or change patterns. This feature allows a non-invasive testing of how each pattern looks on your desktop. To permanently install the pattern selected, click on the "Install" button.

Chameleon comes with a 30-page manual showing you what to do in a step-by-step manner. There are also suggestions as to how to design patterns of your own. The manual also mentions that additional patterns are available under the product known as "ARTBEATS®". I have looked at quite a few of the patterns. I have tried a few that I liked and have had no problem with my system. I am running a Mac IIsi with 5 Meg and an 80 meg hard drive. I have quite a few INITs and DA's, and thus far have found no problems.
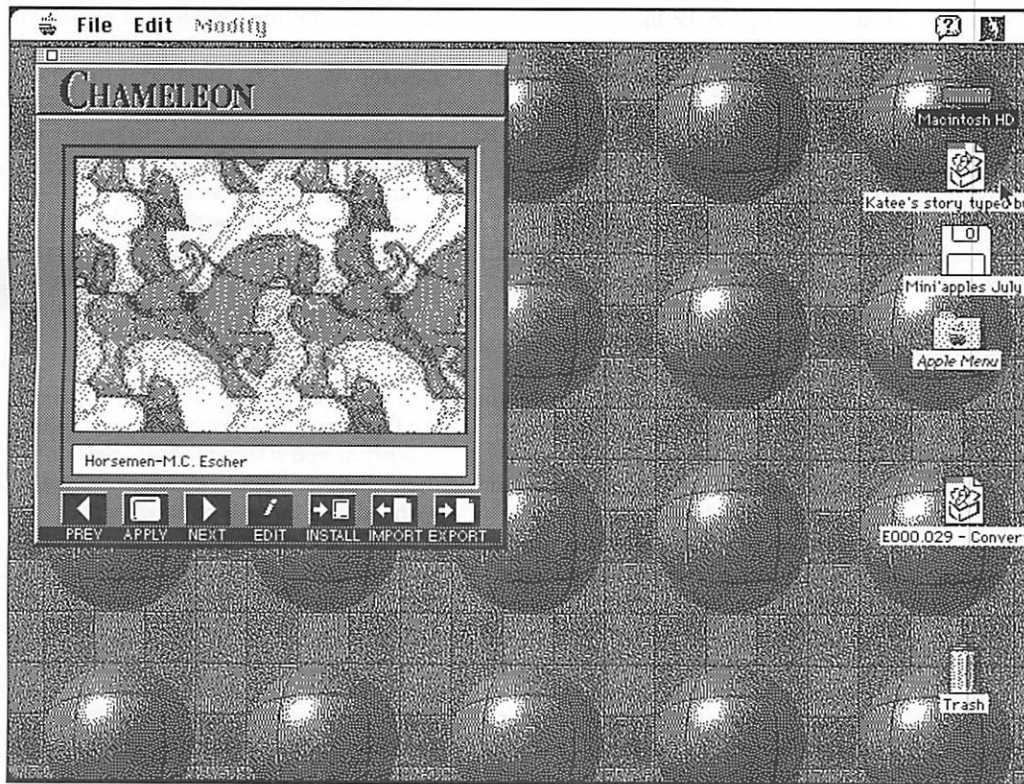
Advantages: Simple to use, no INIT or DA, easy to edit patterns. Technical support is available locally (Logical Solutions is based in St. Paul, MN).

Disadvantages: Since this modifies your system, you must install carefully, and it may cause future problems with your system. If other programs modify your system, there may be conflicts and you lose your system. Since this

standard patterns available on your Mac, this program will allow you to create various patterns on your desktop. Pattern size can range from 8x8 to 128x128 pixels. To make your life easier, there are 243 different patterns included on the disk. Actually, this is most of the disk, as the program only takes 740K (and this includes 45 of the patterns!). Pattern editing and PICT files may be imported and used for your desktop.

Chameleon is not an INIT or DA; it installs the pattern you select into the system without the need for Extensions or Control Panels.

You launch Chameleon by double-clicking on the Chameleon icon. Select or create a pattern. To check out how it looks

modifies the system disk, you have only the selected pattern available. You cannot have a group of patterns that are chosen at startup (either randomly or in an order).

Notes: Logical Solutions has provided us with a demo disk of Chameleon. This disk has a few patterns, and is full-featured with the exception of "Install". In other words, you can try out, but the pattern change cannot be made permanent. This disk is reviewed in this month's newsletter under Mac eDOM #883. In addition, if you wish to purchase Chameleon, Logical

**see *Ultimate Desktop,*
page 14**

Some Common Beginner's Questions — Answered

By Tom Pitts

Q: I started with a Mac Plus just last year and I want to upgrade. I am planning to buy an SE/30 with 8 MB RAM and a 100 MB internal hard disk. I'll be using standard programs for spreadsheets, word processing and graphics – nothing really fancy or exotic. I am uncertain whether I should use System 7 instead of system 6.0.5 which I have been using. What do you advise?

A: There is no doubt about it, System 7 is the current and future system software for the Mac. It is much more powerful and, with the System 7 Tuner extension (available from user groups and electronic information services such as America Online), System 7 performs well, albeit somewhat more slowly than system 6.0x. Since you will have a Super Drive, i.e., a floppy drive that accepts 1.44 MB floppy disks, get version 7.0.1 – it is available only on the high density floppies. If you want better speed, use SpeedyFinder7 cdev, System 7 Pack!, and/or FinderEdit to turbo-charge and customize your system. These great shareware programs are available from user groups as well as electronic bulletin boards, just like System 7 Tuner. You can use ResEdit to improve your system software, but I don't recommend that route for a beginner. By the way, I don't care what you've heard or read elsewhere, you need at least 4 MB of RAM to use System 7 effectively. What you plan to buy will be fine with System 7.

Is my Mac a scatter brain?

Q: I have been using a Mac for a couple of years and thought I was familiar with the territory. But I keep hearing about hard disk fragmentation and programs for defragmentation. My hard disk has slowed down a bit over the years. Do I need to do something like this to it?

A: This is a complex topic, so I'll be a bit superficial for the sake of clarity. A hard disk is divided into storage areas

called sectors. Your files – anything you have on your hard disk – are stored as magnetic data in these sectors. Many files are too large to fit in one sector and are stored in two or more sectors. Ideally all parts of such a file are stored in adjacent sectors. When a file is stored in non-contiguous sectors that is called fragmentation. It takes the Mac longer to work with fragmented files because the "head" in the hard drive that reads the data must move (sort of like the stylus on a record player) over a larger area to access all the data that comprise the file.

Fragmentation is an inevitable process as you add and delete files on your hard disk. Generally you will not notice slowed disk performance if only about 10 percent of the files on your disk are fragmented. The novice Mac user with new hardware shouldn't have this problem. However, if you've been using your hard disk for a long time and have never reinitialized and rebuilt it, you probably have some fragmentation.

If you are experiencing slowed hard disk performance, you can use a program like ALSoft's DiskExpress II, or Norton Utilities' Speed Disk to check for fragmentation. These programs also can "defragment" the hard disk, a process that involves re-writing all of the data on the disk so that all elements of a file are stored in contiguous sectors on the disk. It can take a good deal of time on a large or very fragmented disk. Also, since data are erased and re-written there is a potential for loss of files. Back-up your hard disk before you use a defragmentation program. As a general rule, I recommend beginners stay away from these programs, if possible.

A more common cause of hard disk slow down is an excessively large Desktop file. The Mac stores needed information about all the files on a disk – floppy or hard disk – in an invisible Desktop file. Every disk has a Desktop file. (System 7 uses two such files per disk but don't be concerned with that.) The Desktop file of a given disk retains information about every file ever stored on that disk, even those you've deleted.

Each time you boot-up the Mac from your hard disk, it reads the hard disk's Desktop file before it constructs the desktop that you see on the screen. The bigger the file, the longer it takes the Mac to boot-up. I have seen Desktop files larger than 4 MB! That sort of thing will really slow you down.

Every Mac user should clean up the hard disk's Desktop file regularly – once a month at a minimum. (You can do this by reinitializing the hard disk but that erases the whole thing and you have to restore all your files. No fun!) The best way to clean up is to "rebuild" the Desktop file. When you do this the Mac looks at every file on the disk and stores the information it needs about those files in the new Desktop file. Information about files no longer on the disk is deleted. You end up with a smaller, more manageable file. (Be aware that any text that is in the comment section of a file's Get Info box is lost. If you don't use the Get Info comment areas – and who does? – don't worry about it.)

To rebuild your Desktop file depress the Option and Command keys simultaneously as you start your Mac. Keep them depressed until you are presented with a dialog box asking if you want to rebuild the Desktop file. Release the keys and select the OK button. The process may require a few minutes so be patient. If your Desktop file was excessively large, you should notice a definite improvement the next time you boot-up the Mac. Don't wait for this to become a problem. Rebuild the Desktop file every month and you'll be okay.

By the way, the Desktop file of a floppy disk can get real large, too – especially if you add and delete a lot of files over a long time period without erasing the entire disk. Did you ever notice that some supposedly "empty" floppy disks have less available space than you think they should? Just erase the disk or depress the Option and Command keys when you insert the disk into the drive to rebuild the disk's Desktop file and regain the "lost" space. (That's a free tip folks – no extra charge.)

The law of the letter

Q: I'm lost. I have a bunch of fonts, some are TrueType some are Type 1 taken from AOL and the Disks of the Month. How are these fonts different, how do I use them and which is best?

A: The Mac needs two types of information about fonts. It must know how to display the font on the screen and how to print it. TrueType fonts contain both types of information in a single suitcase file. They look nice on the screen and the printed page no matter what type size you use. Because they are in a single file they are easy to use – just install them into the System file. Under system 6.0.x use Font/DA mover to install a TrueType font. With System 7, open the suitcase file by double-clicking it, and drag the font file that is inside the suitcase into the System Folder. It will be placed in the System file for you.

Type 1 fonts have two parts – the screen information and the printer information, often referred to as the screen font and the printer font, respectively. The printer font contains all the information, written in a format called PostScript, that your printer needs to print that font at any size. It is a "system extension" and is stored in the Extensions Folder within the System Folder. (With system 6.0.x, it is placed in the System Folder itself.) Laser printers have some built-in printer fonts so you don't need to have those printer fonts in the System Folder too. Read your printer manual to determine which fonts are built in.

The screen font is in a suitcase file. Each screen font file contains the information for only one type size. You should install a separate screen font for every type size of a particular font that you will use. If you select a type size for which you do not have a screen font installed, the Mac will use the printer font data to approximate that font on your monitor. It will look pretty bad on screen. (It will print fine because the printer uses the printer font not the screen font.)

When you get a Type 1 font that is not built in the printer, put the printer font into the System Folder. Install the accompanying screen fonts it in the System file just as you would do for a TrueType font.

Some printers, like the ImageWriter,

don't read PostScript files, so they cannot use Type 1 fonts. Don't despair. If you want to use them on a non-PostScript printer, get Adobe Type Manager. It translates the PostScript printer fonts for your non-PostScript printer. The output isn't as clean as that from a laser PostScript printer, but it beats the ImageWriter alone. ATM also smoothes out fonts on the screen so you don't need to install every size screen font available. So even if you have a laser PostScript printer, if you use a lot of Type 1 fonts ATM will improve your screen images and save disk space.

Free the mouse, fry the Mac

Q: What should I do when my mouse freezes? Some people tell me to unplug the mouse from the Mac then plug it back in. I've heard that isn't safe. What's right.

A: You heard right. Never unplug any peripheral from the Mac while its power is on. Sure, I understand. The Mac froze and if you restart it, you'll lose your unsaved work. But unplugging the mouse or keyboard is not the answer.

If you're using System 7 there is a possible solution. Say the mouse freezes while you are in one application and you have unsaved work open in another application. You can't rescue any unsaved work in the frozen application. Sorry. You might be able to save the work in the background application. Depress the Command, Option and esc keys simultaneously. If you are lucky you'll get a dialog box asking if you really want to "Force Quit" the application. Click on the "Force Quit" button. Once the frozen application has quit, go to the other, open application(s), save your work and quit all applications. Restart your Mac before you attempt any more work.

If you cannot force quit the application, depress the restart button or turn the Mac off then back on. You'll lose all of your unsaved work this way but it's safe.

Learn a lesson from this experience. Save frequently! Command-S is the motto! I suggest you always save your work before switching applications under MultiFinder (system 6) and in System 7. The files you save will be your own.

A friend, a Mac consultant, tells me that, by unplugging a mouse with his

Mac running he blew a fuse on his Mac's motherboard one time. It was easily replaced, but some repair people, taking advantage of a less experienced Mac user, might have swapped the entire board. That's big bucks! He also had two clients blow controller boards on hard drives by unplugging. It's a bad idea!

Double click limbo

Q: I get the Disk of the Month each month from my user group and I download interesting things from America Online. Often when I double-click on something from one of these disks or something I downloaded, I get a box telling me that the application is busy or missing. Why do they put out stuff that I can't use?

A: Not all files work or open when you double-click on them. For example, Control Panels, INITs, printer fonts, etc., won't open. They are system documents that work through the system software. I suggest you read the documentation that accompanies before you try to use it.

Also you must remember that many items are compressed to save disk space before they are distributed on disks of the month (from your user group) or on electronic information services. Often these files end with the suffix '.sit' or. 'cpt.' or a similar string. You must decompress these files before they can be used, utilizing a program like StuffIt Expander, StuffIt, Compact Pro, Extractor, etc. These decompression/compression programs are available from user groups and electronic information services and come with excellent instructions on their use. Once you've successfully expanded a file you then have to attempt to use it.

Let's examine the situation in which you have a document that can be opened, i.e., say a word processor file or a graphics file, not a control panel, INIT, or printer font, etc. When you double-click on such a document, the Mac checks it to see what program originally created it. Then it looks to see if you have that program. If you do have it – no problem – the document is opened in that program. If your Mac can't find the program it will give you the hated "application is busy or missing" dialog. If

Welcome

to the Next Level

by Ken Gruberman

When was the last time you actually gasped in amazement as you used a new Mac software program for the first time? You know... "oh *geez*! I can't believe this... Honey, come here, quick – you gotta *see* this!" Know what I mean now?

I can count those times on the fingers of one hand. Of course there was the first time I used MacWrite and MacPaint, the first time I realized I could publish sheet music on the Mac instead of by hand, my first encounters with multimedia as I saw the Mac control a CD-ROM and laserdisc player at the same time... and the giddy goofball wonder of KidPix. (My good friend Marty Safir would undoubtedly say his number-one was the first time he used Photoshop!) Now it's time to go to the fingers of my other hand, because lightning has struck again and the perpetrator of this magic is Adobe's long-awaited new PostScript Level 2 printer driver for all Macintosh models.

Huh? What did he say? A *printer driver?* That doesn't sound very exciting, especially when compared to the previously-mentioned examples. Agreed, but that's exactly why it caught me so off-guard. Think about it... that familiar page setup and print dialog box that we all see every day has been with the Macintosh, virtually unchanged, since the very beginning. Now, all of a sudden, it's all new and different... and quite impressive!

Years in the works, the highly anticipated software promised to speed up all Macintosh printers by several hundred percent, depending on vintage, and would bring PostScript Level 2 functionality to the masses. It does all this and more, partly because it is an entire "re-think" of the whole printing process. After using it for a couple of days, I can understand why it took so long in getting here.

Making a good thing beta

Apple and Adobe have been jointly working on the project, and each will release it's own version. We'll be looking at the authorized Adobe release version, known as "Adobe Printer Driver – PSPrinter version 8" according to the Adobe Installer's splash screen. That's an important fact as beta copies of the software have been floating around the general Mac developer community for some time now. Therefore, I'll reiterate: *this is the real thing.*

Because I'm "jumping the gun" a bit (the product, as of this writing, still hasn't been *officially* released) this article will be of the "first look" variety as opposed to a full-blown review. I can't be sure exactly when the product will be released (it could already be out by the time you read this) or if it is free or not, or even what kind of documentation comes with it; the observations you are about to read came from standard Mac experimentation, assumption and observation... the kind we *all* do when trying something for the first time. The good news? The new driver is designed so well that I figured out virtually all of it in short order. Any lingering questions will be mentioned and discussed. Now that we have the big picture, it's time to get printing!

Let's go for a drive

The software comes on two disks: *PSPrinter 1* contains the installer, ReadMe, Backgrounder, PrintMonitor, and a folder of Printer Descriptions. *PSPrinter 2* has the actual PSPrinter file, plus LaserWriter and Laser Prep files.

The astute among you have already figured out that the new driver works with system 6.0.7 as well as system 7, as Backgrounder and Laser Prep files were eliminated under system 7. The software won't work with anything less than 6.0.7, but *will* work on any Macintosh model that can run 6.0.7 or above. Upon

"getting info" on the version of TeachText included on the disk, as well as the "system 6" files, you see that the actual system software version they sport is 6.0.8... the last system 6 variant released before going to 7. The testing was done on my home setup: Quadra 700 running system 7.1 and a DataProducts (aka RealTech) LZR 960 PostScript Level 2 laser printer. (*Now* you know why I stay home a lot!)

If you're running system 7.1, the installer will not remove your regular LaserWriter print driver or PrintMonitor; if you're running either System 7 or 7.0.1 you may want to install the 7.1.2 version of LaserWriter that comes on the disk. The Laser Prep, Backgrounder and PrintMonitor files on the disks are strictly for system 6 users... 7 people should leave their PrintMonitor alone. What *will* be installed is a new printer driver, called "PSPrinter," which resides in your Extensions folder, as well as another folder next to it called "Printer Descriptions." The PSPrinter file and LaserWriter file will peacefully co-exist in your Chooser.

Choosing the future

The first stop after installing is the Chooser, as it is after *any* system install. Right away, though, you'll be treated to a new experience... the start of many. Assuming your printer is on and properly connected, you click on the PSPrinter icon and wait for the printer's name to appear on the right-hand side. But what's this? A new button has appeared called "Set Up," right next to the background printing buttons. This Set Up function is one of the key features of the new driver and is what gives the new driver its super-functionality.

Adobe and Apple worked with virtually every major printer manufacturer to gather detailed information on their various printer models and what capabilities they possessed, then created
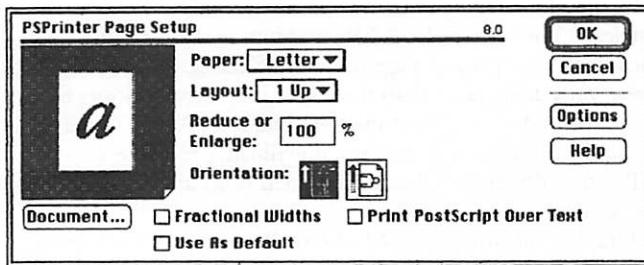
fig. 1: the Page Setup dialog

individual "setup" files on them. The software comes with 49 PD's from 18 different manufacturers including the entire Apple Laser line past and present. New PD's will be shipped with the machines as well as uploaded to online services.

Granted, this idea isn't exactly new as Aldus has been using something like it for its own printer driver since PageMaker was young, but this is the first time the concept has been applied on a systemic level. Because it's completely integrated into system software, the results are more satisfying... especially for me. You see, my printer came with its own custom files to provide "hooks" into the LaserWriter driver. I had to use a system extension (incompatible with several of my regular ones of course) as well as two control panels in order to use my envelope feeder and other special features of my printer. The process was kludgy at best, and I found myself leaving them "turned off" most of the time. But no more! Now, after pressing the Set Up button, my Mac knows all about my printer... what it can do, and how it can do it. After successfully setting up the printer, a new icon appears next to its name indicating the process was done. I will now be able to print the first page of a letter from my letterhead tray, the following pages from my regular stock tray, and even print an envelope from the feeder... all during the same print job and with no special software required!

Another interesting side benefit of this process is accurate knowledge of the printer's margin requirements. In the past, I had to click "Larger print area" in the LaserWriter options box if I wanted TouchBASE to correctly print an envelope with FIM's and bar-coding on it. With PSPrinter, that box is grayed out, but the envelopes print properly anyway. This leads me to believe that "true margins" are being employed so there's no more reason to "trick" the printer into printing correctly. Nice!

Room enough for everything

Now we're ready to take this baby for a spin! I tried printing a number of files of differing complexity from various programs. The first thing I noticed was how "accommodating" the new software is concerning individual programs and how they treat printing. Both the Page Setup and Print dialogs expand to incorporate any special features a program offers; those items appear in the lower half of each box.

PSPrinter's Page Setup (see figure 1) is beautiful in both form and function. The "Paper" pop-down now gives users *ten* choices of paper size, including envelopes, executive and invoice sizes. The "Layout" pop-down can put 1, 2 or 4 pages on a single printed page. Use PSPrinter 8, save a tree, right?

Clicking on the page area graphic yields more information on the connected printer, including precise margin statistics. (See figure 2) I never knew my printer could do that!

fig. 2: printer stats

It's always a good idea to go to the Page Setup dialog after installing a new printer driver, and doing so with this one will get you up and running fast. Now, on to the Print dialog itself. (see figure 3)

The new dialog is a combination of the new and the familiar. The page range is there, and so are any special commands the program you're in may insert, but there are two new areas of interest: the Paper Source and Destination areas.

Obscured from view in figure 3 is the "Remaining from..." pop-down that's right under the "First from..." item in the Paper Source area. The two pop-downs contain identical listings, derived from the PD file, and this is where custom multi-tray print jobs can be accomplished. The Destination area looks like it should, or *will*, contain a third button in the near future, and I'd bet my RAM chips that button will be called "Acrobat," Adobe's shocking new paperless-printing technology that's about to be unleashed on all computing platforms sometime soon.

There's no script like PostScript like no script I know

This assumption makes sense, especially when you look at the increased functionality of the "File" Destination button.

Clicking on the "File" button changes the "Print" button to a "Save" button and brings up the Create File dialog. Older printer drivers have been able to create PostScript files on disk, but PSPrinter adds extras in the form of multiple options for saving a print file to disk. The Format pop-down contains not only "PostScript Job" but also "EPS Mac Standard Preview," "EPS Mac Enhanced Preview," and "EPS No Preview." That, and the ability to include some, all, or none of the fonts used in a document make this a powerful new file exchange formatting tool. Only Acrobat will eclipse it with its promise of fully editable document printing no matter what computer you use or whether you have the creating application. I hope that Acrobat's new file format will result in smaller files than the current EPS disk file standard as they are still quite large; choosing ASCII and All fonts will deposit a humongous file on your hard disk!

When "Printer" is selected as the destination, clicking the Options button brings up some interesting new options as well as some old friends. Added to Black and White and Color/Grayscale is the new "Calibrated Color/Grayscale." I wasn't sure what this last option was for, so I clicked the "Help" button and... low and behold, the answer was given to me! (I'm always amazed at how many people never click on Help to get answers for their problems; sometimes they don't even realize it's there!)

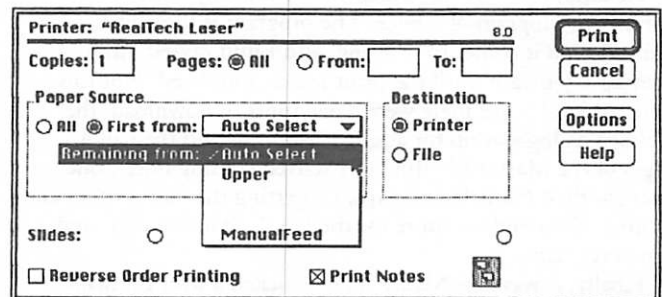According to the help screen, this item is a PostScript Level

fig. 3: the Print dialog

2 function that attempts to closely match the printed colors with the ones on the monitor. I think that's a good reason to get a PS Level 2 printer if you don't already have one!

The "TraySwitch" pop-down contains True and False in addition to the Printer's Default selection, which can enable default tray overriding. Oddly, no mention of this feature appears in the Help window, leading me to believe it was a last-minute add-on.

Best of all is the PostScript Errors function. Now, if your print job ends up sabotaged by some obscure PostScript problem, you won't have to see some cryptic, unintelligible notice that solves nothing. Rather, the driver will help you locate the source of the problem and eradicate it. I wish I'd had this last year... I probably could have saved some of the hair I was ripping out of my head when a critical job wouldn't print for love or money. At least now I have one less thing to worry about!

If you want to know as much about your printer as the software does, go back to the Chooser, click the Set Up button and click Printer Info. You'll get a scrolling list of information about your printer that is so technical it will make your head spin! At least I was able to visually confirm that all my printer's RAM was online and functioning.

Speed demon
All those options may sound like overkill, but in reality, printing is still as simple as Command-P, return. When you do this, and you have Background Printing Off, you'll see the new Printing Progress dialog. Even this mundane aspect of printing has been improved.

PSPrinter lets your program continue to display whatever messages it like to display during printing; it shoves them halfway down the screen while its own message box appears toward the top of the screen. It's clear, concise and informative about what is going on. The driver "spools" the print job immediately, even with BG printing off, so if anything happens the print job may continue later. The next thing you typical see is "Creating Prolog" then "Printing pages 1... 2..." etc. Finally, if there are fonts to be downloaded to the printer, they will get downloaded *one after another*... and quickly. Finally the pages come out.

Informal testing on my PostScript Level 2 printer yielded impressive results. My printer is rated at 9 ppm which it has, on occasion, *almost* reached. Now it has exceeded that number! My first test was a 2-page Word document in Times Bold and Times Roman (Adobe versions, naturally.) The print process was so fast that I almost didn't see the message box at all! 3 seconds and – bang! – the pages came out, one directly after another.

Next up, Mark of the Unicorn's *Mosaic*, my current music publishing program of choice. The program is somewhat finicky when it comes to printing, and I find myself often holding my breath until the print job is completed. Not this time, amigos! Since there were a few fonts to download, the message dialog was up for about 10 seconds and then all 4 pages of the Master Rhythm part started coming out... one after another! No halts, no gaps, no getting the first 2 pages and waiting 40 seconds or more for the last 2. Smooth, easy, and very, very fast!

Finally, it was PageMaker time. I picked a flyer I'd made that contained 8 discrete typefaces and several fonts as well.

(This was done for a particular effect and not because I am tasteless). There were also 2 EPS graphics in the 1-page document. The printed page came out after 22 seconds... *almost three times faster* than the Aldus Prep driver! Going back to the Aldus driver showed me the difference: Aldus' driver would download a font, process, download, process, etc. PSPrinter's driver downloads all needed fonts at one time, thus saving time.

Graphics printing from MacDraw Pro was just as impressive, yielding speed-up's from 2 to 5 times faster than normal.

Lastly, I turned on Background Printing to see what differences there were from the old BG function. After selecting "Print" in Word, the message box came up and *immediately* released! The cursor's movements became slightly jerky after that as the file was being processed in the background, which is just what it used to do with the old driver. However, the jerkiness subsided quickly and the pages finally came out at about a 20 percent faster rate. As I suspected, though, Background Printing is still markedly slower than with the function turned off. I recommend it only to those whose time-restraints concerning printing are non-existent. (In other words: *I don't care how fast it prints!*)

One ReadMe that needs to be read!
Virtually all Macintosh software ships with a ReadMe file, but PSPrinter's is pretty long and contains a lot of useful information. Most importantly, it lists all of the software Adobe knows to be either somewhat crippled or totally incompatible with their driver. If there is a new software update to correct the problem, it will tell you as well.

I suspect that there will be a lot of software updating as vendors play "catch-up" to take advantage of all the new functionality, but in my informal tests everything worked just fine, so I wouldn't be overly concerned. Besides, if you do encounter a problem, you can always go back to the Chooser and return to your regular Apple driver. If you're a Hewlett-Packard DeskWriter customer, don't despair as HP has promised to incorporate (read "license") the new technology into their own proprietary drivers any time now. LaserJet II and III's are supported and LJ IV's should be arriving soon.

I'm all shook up
As with anything that is revolutionary, there is bound to be some fall-out and shake-ups concerning Adobe and the general software community, but from what I've seen, the transition is going smoother than normal, thanks to the close ties between them. Adobe obviously took great pains to interface with as many vendors as possible in order to keep chaos to a minimum. New versions of PageMaker and Quark are already in development that take even further advantage of the new drivers, and more companies are joining them in the PostScript Level 2 revolution.

I can assure you that if you *do* have either incompatible software or hardware, it would be worth your while to upgrade them to match PSPrinter 8. I don't always recommend such actions when "the latest thing" arrives, but this is a special situation. The future really *is* here now, and it's yours for the taking.

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Messin' with Merge

by Tom Edwards

Often, the most frustrating tasks turn out to be the most rewarding... when you finally conquer them!

I spent good chunks of two days on one such task recently. I was asked to help set up a mailing label project for a small business. They want to use Microsoft Word 5.x, since that's the program with the highest "comfort level" for the person that will manage the list. Word supports lists and mail merge, even providing a modicum of organizational tools for sorting and selecting. As a "starter," Word provides a host of templates for common label formats. Following their directions, you can have a list of name/address information splashing across a variety of label forms in a very short time. The "Merge Helper" of Word 5.x goes a long ways to helping you set up the necessary files for merging.

With care, you can sort lists (a slow operation if the list is of any significant size) and print out a group of records; a process that even semi-comatose database programs can do in just a fraction of the time. Word also has some tools to let you select records or responses, depending on the content of various fields in the record.

I was sure that the list this company wants to use would include a field that could lead to sorting; like "ShoeSize," where all size 13's could be grouped together, then 12's, 11's, 10's and so on. But that requires that the list be sorted and that the record number range of the group to be printed be noted and carried over into the print merge operation. I was not at all sure that the "comfort level" of the user would withstand all of this busy work.

After some cogitating, I felt that the best approach from the user's standpoint would be if I could devise a process that would ask for "ShoeSize?" to select just the proper records for merging. With Word's "SET" and comparison operators of the merge functions, that was easy to do.

Another Word merge command is the "NEXT" operator. This allows you to

place the content of several records on one sheet, rather than printing one record per sheet. This is a necessary part of laser-printed labels, where you want perhaps 30 records to print as die-cut labels on an 8.5" x 11" sheet. The "Table" ability of Word is an asset to helping you get all of this laid out nice and neatly, too.

When I tried to couple all this with Word's sample for laser-printed sheets of labels, it worked... to some degree. Every record in file had a corresponding label position on the printed sheets. Except there were blank labels wherever the "ShoeSize" was not in agreement with the choice of what records should be printed! Needless to say, a bunch of label sheets with only a few, haphazardly-located printed labels didn't smack of efficient use of the label sheets.

I pressed further into Word's merge commands. Adding in the "IF... ELSE... ENDIF" commands seemed the logical approach to straightening this mess out. Making subtle changes in the cryptic "programeeze" of the merge instructions, I soon had lots of results... but none with the desired result. Using the "Merge into a new file" routine, I could get just the selected to print, but not all grouped together on the sheet. I could get just the selected records to print, but only one label per sheet. I could get all labels to print. I could get just the selected records to print, in the proper place on the sheet, but Word groaned with "error" messages that required me to tell it to press on and ignore the problems.

Throughout all of this experimenting, the last result seemed highly promising. All that was needed was to go back into the newly created file and edit out the error messages. With that done, the resulting file was exactly what I wanted.

But once again, I was faced with the fact that the person using this would be cussing me out each time they created a new group of labels. Either they had to edit the error messages out of the file before printing, or they ended up with a couple of labels spoiled with error messages printed right on them.

And, they had to respond to the warnings that Word splashed on the screen. They couldn't just get the print merge operation started and come back later to collect a dozen or so sheets of labels from the printer's tray.

No... it was time to call it a night. I knew that I was close, but just couldn't seem to hit the right way to tell Word to merge just the records I wanted into a nice, compact group of labels on as few sheets as possible.

The next morning, I tackled the problem once again. The answer didn't come immediately, but I did solve it in much less time than I had spent on it the day before. Soon, I could consistently get results that were exactly like the vision of the day before. After that, I made other "templates" for different label formats and adjusted some cosmetic aspects of the end results.

So all of this effort does not get lost to history, I'll share the essence of the "scripts" for the selecting and merging process with you. I used the Avery 5160 template (from Word's Mailing Labels folder). Script #1 goes in the first cell of the table (upper-left corner). Script #2 goes in all other cells of the table. Field names, within the file of names/addresses, need to coordinate with the field names used in your merge scripts.

The script examples have been copied and pasted as "pictures" so that you can see the "invisibles" of cell indicators and end-of-line. You may want to run the first and second lines (within each script)

«DATA Address List»«SET CHECK=? Select ONLY the records that match a ShoeSize of...» ↵
« IF ShoeSize=CHECK»« IF Fname»«Fname» «ENDIF»« IF Lname»«Lname»«ENDIF» ↵
« IF Address1 »«Address1 » ↵
«ENDIF»« IF Address2»«Address2» ↵
«ENDIF»«City», «State» «Zip»«ENDIF»«NEXT»• ¶

Script #1

```
«IF ShoeSize=CHECK» ↵
«IF Fname»«Fname» «ENDIF»«IF Lname»«Lname»«ENDIF» ↵
«IF Address1»«Address1» ↵
«ENDIF»«IF Address2»«Address2» ↵
«ENDIF»«City», «State» «Zip»«ELSE»«NEXT»«ENDIF»«NEXT»•
```
Script #2

together as one line. This might help if you are using large type or want to eliminate the "blank line" that is created here in order to accommodate more information lines on the label.

The special "return arrow" (Shift+Return) treats all of the separate lines as one paragraph. This is handy for formatting the information block on the label as a unit. You can add a few points of leading to the paragraph to nudge the info block down a bit on the label, rather than adding leading between all lines.

Another trick that you may want to use is to format the field names in the scripts with the font, size and style that you want to use on the label. This will override the formatting from the Address List. You can type in the list information in a font and size suited to your visual ease and it will print out differently on the label. This might even include using "all caps" as the style

in the field names of the scripts. (This will make Cliff Claven and the USPO happy. You are 'sposed to omit punctuation, too, but I use the comma after the city name!). Doing this allows the same Address List file to be used to create merge letters where upper/lowercase styles are appropriate without fussing over the change.

Goodness! More than you ever wanted to know about Word's merge operations, I'm sure. If you are determined to use Word, perhaps some of what I've described here will be of help to you at some point. I hope so!

More bytes later... TWE

PS: One idiosyncrasy that I never did correct is that the *script* prints out at the last label or two positions on the final sheet if the row is not filled with labels. That seems to be a Word "undocumented feature" that I had *no* interest in trying to suppress. If you can't stand to waste a label or two, then YOU figure out how to stop that and write an article for ME to read about how you done it! Good luck!!

TWE

SCSI — Exact Science or Black Magic?

by Chriss Koch

SCSI (pronounced skuh'-zee) stands for Small Computer Systems Interface. SCSI is a parallel interface used to provide a standard means for connecting computers peripheral devices.

SCSI offers several advantages:

Speed: SCSI transfers data between the computer and peripheral devices much faster than other interfaces.

Flexibility: SCSI is a standard interface used by many different manufacturers.

Expandability: You can connect as many as seven devices to a computer.

Setting up a SCSI network consists of three general tasks:

• connecting the appropriate cables to the computer and the other SCSI devices
• properly terminating the network
• ensuring that each device has a unique identification (priority) number

Many people (including myself) have

complained of problems getting SCSI networks to operate. I'll try to remove some of the mysticism involved in getting a SCSI network to operate correctly by providing guidelines offered to me during my Macintosh Service Training Course.

The first thing we should talk about is SCSI ID numbers. Each device on a SCSI bus (or network) has a SCSI identification number ("ID number" or "priority number"). The SCSI ID number identifies each device regardless of its physical location in the chain. The ID number also determines which device communicates first when more than one device wants to use the bus. Eight numbers (0-7) are used to establish identity and priority on the bus. The higher the number, the higher the priority. The computer is assigned the ID number 7, making it the highest priority device. If two devices have the same ID number, they may send data at the same time, which could damage files.

Devices with the same ID number can also cause a failure to boot. When assigning SCSI ID numbers, give higher priority to startup devices and lower priorities to infrequently used equipment. When a Macintosh computer starts up, it looks for the required startup information in the following order:

1. The lower internal floppy drive (on Macintosh II computers the drive on the right).
2. The upper internal floppy drive, if one is installed (on Macintosh II computers the drive on the left).
3. Any external non-SCSI drives.
4. Any startup device selected via the Control Panel's Startup Device CDEV.
5. SCSI devices beginning with ID 6 and ending with ID 0.

Next lets discuss SCSI cabling. There are three types of SCSI cables.

The System Cable is 18 inches long and is the shortest of the three cables. One end of the cable has a DB-25 connector, which plugs into the SCSI port on the computer. The other end of the System Cable has a 50-pin connector, which plugs into a SCSI device, a Cable Extender, or a Cable Terminator. Only one System Cable should be used in a SCSI network.

The Peripheral Interface Cable is approximately 3 feet long and has identical 50-pin connectors on each end. If you have more than one device, use this cable to connect the devices to each other.

The Cable Extender is the same length as the Peripheral Interface Cable but has different 50-pin connectors at each end. One 50-pin connector is female, and connects to a System Cable 50-pin connector, a Peripheral Interface Cable, or another Cable Extender. The other 50-pin connector is male, and connects to a Cable Terminator or to the next SCSI device. You use the Cable Extender like an extension cord. You can connect several Cable Extenders together, if needed, as long as the total cable length is not more than 20 feet.

Next we should discuss proper SCSI termination. Proper SCSI termination is typically the most frustrating aspect of getting your SCSI network to function properly. It doesn't have to be. First an explanation of termination is in order.

Electrically terminated resistors are required to ensure signal integrity along a SCSI bus. These resistors control voltage range and keep signals from bouncing off one end of the bus and rippling back, interfering with new signals.

There are two termination techniques. Cable terminators, and built-in terminators. Electrically they are equivalent, however the use of Cable Terminators allows for more flexibility in configuring your SCSI network.

A Cable Terminator is a plastic case containing electrically terminated resistors. You can attach Cable terminators to either the SCSI port of a SCSI device or the end of a SCSI cable.

Some SCSI devices have built-in terminators—electrically terminated resistor packs that are plugged into sockets on the circuit board of a device. All Apple internal SCSI hard disks have built-in terminating resistors. All Apple external SCSI devices do not have built-in terminators. Some third party external

SCSI devices are equipped with built-in terminators, others are not. If you are connecting third party external SCSI devices, you need to determine whether or not they have built-in terminators.

Proper SCSI termination is critical! Improper termination can result in a variety of problems. Uncontrolled voltages can damage SCSI circuits inside the computer. Electrical noise in the system can corrupt files. An improperly terminated system may fail to boot or suffer intermittent failures.

When determining the number and placement of terminators in a SCSI chain, first find out whether the computer is equipped with an internal hard disk, and if so, whether the internal hard disk is outfitted with built-in terminating resistors (if it's not, it should be).

The "two terminator" rule (SCSI networks must be terminated at each end):

- If the computer has an internal hard disk that has built-in terminators, only one other terminator will be placed in the external SCSI chain.
- If the computer is not equipped with an internal hard disk, and the SCSI network consists of more than one cable, two terminators are required, one at each end of the external SCSI chain.

Exception to the "two terminator" rule:
The only time your SCSI network can have only one terminator is when the computer is not equipped with an internal hard disk, and the external SCSI device is connected to the computer using a System Cable. In this case only one terminator is required.

A SCSI network should never have more than two terminators. More than two terminators may cause intermittent problems or inhibit booting.

The number and positioning of terminators depends on how many devices you are connecting, the distance between devices, and if the devices have built-in terminators. Here are some guidelines to follow:

- Make sure the first and last devices in your SCSI chain are terminated.
- Some non-Apple external SCSI devices have built-in terminators. If you have only one such device, place it at the end of your SCSI chain or consider removing the built-in terminators to increase flexibility.
- Make certain that you have only two

terminators in the chain. If you have more than one external device that has built-in terminators, you may be required to remove extra terminators in order to conform with the "two terminator" rule.

- If the computer contains an internal hard disk, make sure the hard disk contains built-in terminating resistors.
- If you connect one external SCSI device to a computer without an internal hard disk by using a System Cable and a Cable Extender, place a terminator between the System Cable and the Cable Extender and another to the end of the Cable Extender.

Finally I'd like to touch on the "First and Last" rule. When you want to use any of the devices on a SCSI network, the devices that have terminators attached (the first and last device) must be turned on in order to pass information through the cable system. If you are not using any devices in the middle of the chain, you can leave them switched off. Therefor you may consider placing seldom used devices, such as scanners, in the middle of the chain.

If you follow the guidelines offered here, you should have a minimum amount of trouble setting up and using your SCSI devices. Some will notice that I didn't cover the differences where a Macintosh IIfx is concerned. I decided it would be best not to complicate the situation any worse, and besides not too many MEGS users have a IIfx! Following is a summary of the areas to be most concerned with:

1) Check all SCSI device ID numbers before connecting a SCSI device. Give each device a unique SCSI ID number before connecting them to your SCSI bus.
2) Assign SCSI ID numbers according to frequency of use. Higher numbers go to more frequently used devices.
3) A SCSI bus will not function properly unless the two devices with terminators are powered on.
4) The exception to the "two terminator" rule is when you connect an unterminated SCSI device to a computer with an 18 inch System Cable. In this instance you need only one terminator, between the cable and the device.

submitted by Mr. J.

Accidental Empires

a book review by Peter Fleck

I just finished "*Accidental Empires: How the Boys of Silicon Valley make their Millions, Battle Foreign Competition, and Still Can't Get a Date*" by Robert X. Cringely. This is a gossipy (very) history of the PC industry from a slightly warped perspective but then if you're into computers like most of us are, well you catch the drift.

Cringely is a computer gossip columnist for InfoWorld. He's been around the industry since its start and seems to know of what he speaks. (If he doesn't, he'll probably be sued for libel.)

I love his humor:

There are lots of people who aren't going to like this book...

Hate group number one consists of most of the people who are mentioned in the book.

Hate group number two consists of all the people who *aren't* mentioned in the book and are pissed at not being able to join hate group number one.

Hate group number three doesn't give a damn about the other two hate groups and will just hate the book because somewhere I write that object-oriented programming was invented in Norway in 1967, when they know it was invented in *Bergen*, Norway, on a rainy afternoon in *late* 1966. I never have been able to please these folks, who are mainly programmers and engineers...

There was no urge to fly, to see the world, to win a war, to cure disease, or even to get rich that explains how the personal computer business came to be or even how it runs today. Instead the game was started to satisfy the needs of disenfranchised nerds like Bill Gates who didn't meet the macho standards of American maleness and so looked for a way to create their own adolescent alternative to the adult world and, through that creation, gain the admiration of their peers.

Besides the humor and gossip, he does have a keen insight about the industry and some predictions about where it will go. Recent news supports some of his statements. After noting IBM's failure to get a 386 machine on the market and Compaq's release of the DeskPro 386 he states: "Big Blue had fallen behind the performance curve and would never catch up. Let me say that a little louder: *IBM will never catch up.*"

And fellow Macers (Mackers?), there's plenty of stuff about the Apple execs, especially Steve Jobs.

Consider this: on the day that the IBM suits went to their scheduled appointment with Gary Kildall – owner of Digital Research creator of the CP/M operating system – Kildall was out flying his plane. The IBMers then headed north to Bellevue, Washington to meet with Bill Gates at Microsoft, a 50-employee company that sold versions of FORTRAN and COBOL, a bunch of varieties of BASIC, and some hardware. Gates said he had an operating system called QDOS – quick and dirty operating system. Gates then paid Seattle Computer Products $50,000 for the rights to QDOS and Microsoft became responsible for all the system software for the Acorn, the yet-to-be-developed IBM PC.

Enough. Get the book. You won't be disappointed.

Available in trade paperback by HarperBusiness, 336 pages, $11.

Solutions will sell Chameleon (and 7th Heaven) at a discount to Mini'app'les members. Just call them at 659-2495 and let them know that you are a member. Mention Ed Klems' name.

Is Chameleon worth the cost? This is something I cannot answer. The question of "worth" for a program of this type is very relative. It does help to relieve the monotony of staring at the normal desktop screen.

Chameleon 2.0
from Logical Solutions
List Price $59.95
MacConnection – $39

you get this dialog you have some alternatives. Many programs will open documents created by other programs, but you have to use a different technique. If you believe the document contains text, start-up your word processor and select "Open..." from the File menu. The Open File dialog box will appear allowing you to select a file. (If you do not know how to operate this dialog, complete instructions are in the manual that came with the computer.) If you see the document listed inside the standard Open File dialog box, select it, click "Open" and it will be opened. If the document is a graphic, try the same technique with your graphics program.

It is a good idea to have one copy of Apple's TeachText on your hard drive since many instructions are created in that ubiquitous program. The bottom line, and one most Mac users hate to accept, is that you really should read instruction documents (the "Read me" files) that typically accompany any software you want to use.

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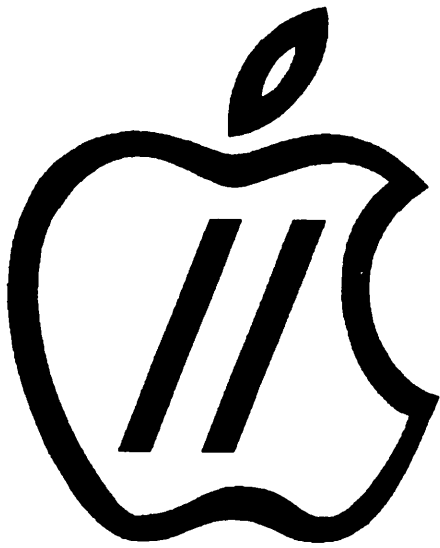   7˝ w. X 7˝ h. $100.00

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Apple II

It's Here and it's New! – ProTERM 3.1

Again – ProTERM improves to meet current needs!

The winner of two Awards of Excellence for "Best Apple II Software" just got better! Author Greg Schaefer released ProTERM 1.0 in the late 1980's and subsequent updates through 2.1 gave ProTERM users what they asked for. InSync Software, Inc. published an improved ProTERM 2.2 in Spring 1990, and after eighteen months of intense development, ProTERM 3.0 was born in late 1991.

ProTERM provides Apple II computer users with current and state of the art telecommunications. Completely redesigned and written "from-scratch," version 3.0 was a demonstration of extraordinary engineering combining incredible new features, while maintaining the best of all previous versions. Meeting the challenge of current technology, a new improved ProTERM 3.1 was released in Spring of '93.

NOTE: To insure a stronger trade name protection, InSync Software, Inc., changed its name to InTrec Software, Inc. in early '93.

The update package includes:

- ProTERM 3.1 on 3.5 and a 5.25 disks.
- New 430 page user manual. Over 10 new pages of how to do it help.

see *New ProTERM,*
page 27

Apple II Main Meeting Minutes

by Thomas Ostertag

The thunderstorms rolled by during the day and left the evening with a fresh smell and a lot more leaves on the trees. Also lots of dead worms on the street... The Apple II Users arrived at Murray for their monthly fix and found that the publicized speaker, Jim Hirsch was not there and they were going to listen to yours truly talk about ProSel 8. But before that transpired, introductions were done along with announcements. Tom Gates passed out ballots for the Club's election and told us to vote "early and often." Greg Carlson also had a few words on the latest in eDOMs. Good news, AppleWriter 2.1 is available as well as several other programs that run on an Apple][+.

There were several questions and appropriate answers to go with them and then we had the ProSel 8 presentation. There were several questions on the Utilities included with the program selector. When the Custodian showed up, we knew that it was time to leave and join the Pie SIG at Perkins. There we learned several interesting things about NWA databases, backing up Apollo work stations and removing the rear tire from a Victor Motorcycle.

Next month's meeting will be on InterNet and will be given by Pat Sonnek and Kevin Trainor. The meeting location will be at the Fridley Branch Library, 1 block off University, north of 694. It was a fun meeting for me... but stay tuned.

Apple II Novice SIG

by Tom Gates

Beginning with the meeting in June, the Apple II Novice SIG will be presenting meeting topics on the three major operating systems on the Apple II platform.

The June meeting will kick off with an overview of the DOS 3.3 operating system and its Master disk usage. July will follow on by moving into ProDOS, the PROfessional Disk Operating System that took over from DOS 3.3.

In August we take a break from all the computer talk and invite everyone to the Mini'app'les summer picnic. This is a "Bring Your Own Food" affair. But we do make a point of having pot-luck dessert. So, make up a dessert concoction to share with all who venture into calorie land.

So, now by September, we'll be ready to move into the GS/OS operating system on the Apple IIGS. Don't miss it!

Great Printing Quality with AppleWorks Classic

by Daryl Baxter
Part Two of a Three Part Series

In my last article about Enhancement Of Printer Quality Output I covered general concepts and information regarding some of the various software programs that are available to either (1) patch AppleWorks Classic (v2.0, 2.1, 3.0) to provide DeskJet 500 printer drivers to access the DeskJet 500 printer ("DJ") with the Apple IIc, IIe, IIgs or comparable "clone" computers or (2) install Harmonie's printer drivers and Pointless' Init/CDev utility in the appropriate GS/OS System folders that add the ability to access the DJ with the IIgs incorporating TrueType font technology. In either case the printer output is outstanding and warrants a closer review by persons wanting to generate printed documents of laser sharp quality using an Apple II computer.

In this article I would like to discuss in greater detail the patching of AppleWorks Classic and the way I use the installed drivers to accomplish sending software printer commands to the DJ to utilize its ROM based built in fonts of CG Times, Letter Gothic and Courier. At another time and in a different article I plan on covering in greater detail the use of the Harmonie drivers and the Pointless utility.

If you have one of the computers mentioned above and either have a DJ or plan to purchase one and you want to print using the DeskJet 500 Printer in conjunction with your Apple II computer, start by acquiring SuperPatch v8.0 (Que Labs) and use it to patch your working copy of AppleWorks (preferably v3.0) following it's well documented instructions manual so that your Seg.Er file is modified to contain the "portrait" and "landscape" DJ printer drivers. All previous drivers in the Seg.Er file will be eliminated by use of this patch (p. 45 of manual), but you can simply reinstall the ImageWriter II ("IWII") printer driver as the third active printer in your Seg.Er file using the built in ability of AppleWorks. That is, after the DJ patches are installed, boot AppleWorks Classic and from the Main Menu select Other Activities, then Standard Settings, then Printer Information and finally Add A Printer and choose the ImageWriter II. You now have three active printers (the maximum that AppleWorks allows) from which to choose from when you want to print your document on paper. You can verify that fact by putting an AppleWorks awp file on the Desktop and entering Oa-P, Return and you should see three choices of printers. Please contain your excitement to try and print at this time with one of the drivers and proceed immediately to the next paragraph and modification of your working copy of AppleWorks.

Lets look at the installed printer specifications of the DJ "portrait" driver by selecting that driver from the Printer Information Menu. Again you reach that menu by following the selections from the Main Menu as discussed in the preceding paragraph. Then select Printer Codes from the Change A Printer Menu and select Special Codes from the Printer Codes Menu. Now you can review and modify if desired any of the six special codes (SC) that are built into the DJ portrait printer

driver. Based on several sources I read, I chose to modify Code 5 to be "CG Times font" and entered the control characters Escape(s1p4101T. The case of the character is important and note that the 1 is a numerical one (not a lower case L) and the 0 is a numerical zero (not an alphabetical O). Your AppleWorks manual will assist you in making this change to the control characters. Also I changed Code 6 to be "Courier font" and entered the control characters Escape(s0p3T. You need to modify Code 6 as indicated if you modify Code 5 so that you will have a way to return to Courier font if you desire after using the CG Times font. For future reference make a written notation of the special codes as we will be using them in a few moments. Also write down the existing control characters for special codes 5 and 6 before changing them so you can put them back in and be able to select "6 point begin" and "6 point end" if you desire in the future. My preference is having access to CG Times font rather than access to 6 point output. At this time, press the Escape key repeatedly until you are back at the Main Menu.

With your DJ printer turned off, set your dip switch settings on the DJ as follows regarding Bank A: UDUDDDDU and Bank B: UUDDDDDD (U = Up and D = Down) so that the ASCII Character set becomes the default set rather than the PC-8 Character set (better for ProDOS-8 programs) and so the other settings are consistent with using our AppleWorks application. Now turn on your DJ printer. Add an already prepared word processor file of three or more paragraphs to the Desktop, or make a new word processor file for the Desktop containing three paragraphs.

The following tutorial will teach you how to access and use all three built in ROM fonts of the DJ using your AppleWorks v3.0 software program (only the Courier font can be used with the font selection keys on the DJ):

1. To print the first paragraph in CG Times font, place your cursor on the first character of the first paragraph and press Oa-O (for Printer Options), P1, Return, Escape, Oa-O, SC, Return, 5, Return, Escape. Looking at your document, press Oa-Z to "zoom in" and see your printer commands and move the cursor under the carrot "^" mark at the beginning of your first paragraph and you should note that CG Times font appears at the bottom of the screen. If it did not appear, then you were not successful with your attempt to change SC#5 from "6 point begin" to "CG Times font" and you should work with the change until it is successful. Your zoom in feature should also show that proportional-1 is indicated for the document at this point. Note that CG Times is a proportional font and all characters in your document after the ^ (SC#5) and proportional designation will be printed in CG Times font until other printing

The *History* of the *Apple II*

Part 3: the Apple II

Compiled and written by Steven Weyhrich

The Apple II: Hardware and Firmware

Moving our time machine on to 1977, we can now look at Steve Wozniak's next generation Apple. Even as the Apple I was completed and was slowly selling, Wozniak was already working on making enhancements that would make his computer faster and more functional. He wanted to make it display in color. He worked to combine the terminal and memory functions of the Apple I by moving the display into main memory, allowing instant screen changes. Many of his changes were not added with the end user specifically in mind. Wozniak stated:

"A lot of features of the Apple II went in because I had designed Breakout for Atari. I had designed it in hardware. I wanted to write it in software now. So that was the reason that color was added in first – so that games could be programmed. I sat down one night and tried to put it into BASIC. Fortunately I had written the BASIC myself, so I just burned some new ROMs with line drawing commands, color changing commands, and various BASIC commands that would plot in color. I got this ball bouncing around, and I said, 'Well it needs sound,' and I had to add a speaker to the Apple II. It wasn't planned, it was just accidental... Obviously you need paddles, so I had to scratch my head and design a simple minimum-chip paddle circuit, and put on some paddles. So a lot of these features that really made the Apple II stand out in its day came from a game, and the fun features that were built in were only to do one pet project, which was to program a BASIC version of Breakout and show it off at the club."[1]

Wozniak added other features that he felt were important for a computer that was useful, one that he would want to own. Since the 6502 processor could address a total of 64K of memory, he designed the computer with the ability to use either 4K RAM chips, or the newer (and more expensive) 16K RAM chips. The first Apple II's came standard with 4K of memory, and more could be added, to a maximum of 12K (if using the 4K chips) or 48K (if using the 16K chips). Specially wired strapping blocks attached to the motherboard told the Apple II how much memory was present and where it was. According to the 1981 edition of the APPLE II REFERENCE MANUAL, the Apple could have memory in the following sizes: 4K, 8K, 12K, 16K, 20K, 24K, 32K, 36K, or a full 48K. (These sizes were determined by the different ways that three RAM chips, either 4K or 16K, could be installed). The strapping blocks were even designed with the flexibility of allowing blank spots in memory if there were no RAM chips available to fill those spots.

The first 4K of memory always had to have RAM present, since it was used by the 6502 processor, the ROM routines, and the text screen display. If, for example, you only had two other 4K RAM chips to install and you wanted to display hi-rez graphics, you could strap one chip to the lower half of hi-rez memory from $2000-$2FFF, and the other to the upper half of hi-rez memory from $3000-$3FFF.[2] Since 16K RAM chips cost about $500 when Wozniak designed the Apple II, not many users could afford them. Whereas the Commodore PET and the Radio Shack TRS-80 could not easily be expanded beyond the 4K they came with, the Apple II from the beginning was designed with expansion in mind.[3]

The row of eight expansion slots was another feature about the Apple II that was a strong selling point. Unlike the TRS-80 or PET, you could easily expand the Apple II by simply plugging a card into one of these slots. This degree of expandability made it more expensive to build, however. Steve Jobs didn't believe that anyone would ever need more than two slots, one for a printer and one possibly for a modem. Wozniak knew from his experience with computers at Hewlett-Packard that computer users would always find SOMETHING to fill those extra slots, and insisted that they keep the number at eight.[4]

One problem Apple had to deal with was getting FCC approval for the computer. The RF (radio frequency) modulator that had been designed gave off too much interference, and it was probable that the FCC would not approve it. (The RF modulator allowed a user to attach the Apple to a standard television receiver, instead of requiring the purchase of an expensive computer monitor). Rather than have the release of the Apple II delayed for re-engineering of the RF modulator to get that FCC approval, Apple gave the specifications for the RF modulator to Marty Spergel. He ran a small company (called M&R Electronics) that specialized in obtaining hard-to-get parts that electronics and computer hackers wanted for their projects. Their agreement allowed M&R to make and sell the RF modulators, while Apple could concentrate on making and selling the Apple II. Dealers would sell an Apple II with a "Sup'r Mod" (costing about $30) if the buyer wanted to see the graphics on their color TV. Jobs assured Spergel that the item would sell well, maybe as many as fifty units a month. (Years later Spergel estimated that he had sold about four hundred thousand Sup'r Mods).[5]

Other features that Wozniak (and Allen Baum, who helped him with the project) included in the Apple II ROMs included the terminal software to do screen text display, expanded Monitor functionality, and cassette input/output routines. They added the ability to split the screen into different sized windows. They also wrote a disassembler, which was one of the most important features of the Apple II from the beginning and a significant part of its open design. It allowed ANYONE

to view the 6502 code that ANY program used, and matched the philosophy of the Homebrew Club of making all computer knowledge available to everybody. In the Apple I days, when Apple was supplying software "free or at minimal charge", Wozniak and Baum published an early version of their 6502 disassembler in a hacker's magazine. It was designed to be loaded in memory on the Apple I from $800 to $9D8 and the routine could be executed from the monitor. This early code was quit similar to the disassembler that was later included in the Apple II ROM.[6]

Having an expanded Monitor program in ROM and color graphics were not the only features in the Apple II that attracted people to it. Having Wozniak's BASIC language in ROM, available immediately when the power was turned on, made it possible for non-hackers to write programs that used the Apple II's color graphics.

An interesting bit of trivia about Wozniak's Integer BASIC was that he never had an assembly language source file for it. He wrote it in machine language, assembling it by hand on paper:

"I wrote this BASIC processor, and I wrote a little ALGOL simulator and got it simulated. It looked like it would work, but I had forgotten to build the machine. I had no assembler, that was another thing. To use an assembler, they figured that somebody was going to buy this processor [the 6502] to use for a company, and their company can pay a few thousand dollars in time-sharing charges to use an assembler that was available in time-share. I didn't have any money like that, so a friend taught me that you just sort of look at each instruction, you write your instructions on the right side of the page, you write the addresses over on the left side, and you then look up the hex data for each instruction – you could assemble it yourself. So I would just sit there and assemble it myself. The [Integer] BASIC, which we shipped with the first Apple II's, was never assembled – ever. There was one handwritten copy, all handwritten, all hand-assembled. So we were in an era that we could not afford tools."[7]

Even to this day there is not an official source code listing of Integer BASIC at Apple. And interestingly, the only error I am aware of in the Integer interpreter is one involving a single byte. If a line is entered that has too many parentheses, the "TOO LONG" error message is displayed instead of the "TOO MANY PARENS" message.[8]

Now a Word from our Sponsor: Back to the Basics...

I want to take a short break in this discussion of the Apple II firmware to look at some other items that will make further descriptions easier to understand. If you are a programmer already, you may want to skip this section, since you probably already know this stuff. First we will examine some definitions of terms that are commonly known to programmers, but possibly not to you. Next will be a brief excursion into the realm of hexadecimal, and finally a look at the memory map of the original Apple II.

First, let's look at definitions of some words that I have been loosely throwing around:

BIT – The smallest piece of information that a computer can deal with, it is either a "0" (off, clear) or a "1" (on, set).

BYTE – The most convenient piece of information (for humans) that computers use. One byte consists of eight bits, and ranges from "00000000" (0 decimal) to "11111111" (255 decimal).

NIBBLE – (also spelled "nybble"). One half of a byte, consisting of four bits, ranging from "0000" (0 decimal) to "1111" (15 decimal).

WORD – Two bytes (or four nibbles, if you prefer), consisting of sixteen bits, and ranging from "00000000 00000000" (0 decimal) to "11111111 11111111" (65535 decimal). Not used much in microcomputers.

BINARY – A system of counting using only two digits, "0" and "1" (base 2). Computers speak in binary at their most basic level; anything else is translated into binary, so the computer can understand it.

DECIMAL – A system of counting using ten digits, "0" through "9" (base 10). Most of the Western world uses this

system.

HEXADECIMAL – A system of counting using sixteen digits, "0" through "9" and "A" through "F" (base 16). Programmers use this system as a convenient way of organizing groups of binary numbers.

KILOBYTE – Abbreviated "K", "KB", or "Kbytes", it refers to 1,024 bytes. A 64K computer has 64 x 1024 = 65536 bytes.

MEGABYTE – Abbreviated "M", "MB", or "meg", it refers to 1,024 Kbytes, or 1,024 x 1,024 = 1,048,576 bytes. A 32 MB hard disk, the largest size volume that ProDOS can handle, holds 32 x 1,024 = 32,768 Kbytes, or 32 x 1,024 x 1,024 = 33,554,432 bytes.

GIGABYTE – Abbreviated "G", "GB", or "gig", it refers to 1,024 MB, or 1,048,576 Kbytes, or 10,737,441,824 bytes. The Apple II Smartport (which will be mentioned later in this history) can handle disk devices up to 4 gig in size (although the software to handle that type of size has yet to be written).

RAM – Random Access Memory. Any data stored in this memory disappears when the computer is turned off.

ROM – Read Only Memory. Data cannot be stored in this type of memory, but instead it usually contains programs or other information that does not disappear when the computer is turned off.

HARDWARE – The physical electronic components and mechanical parts that make up a piece of computer equipment. Examples would be the keyboard, disk drive, or television monitor (also called CRT, or Cathode Ray Tube).

SOFTWARE – The digital instructions executed by the computer in RAM. They may act on the hardware that is attached to the computer. Examples would be a BASIC or Pascal program, an assembly language routine to read a clock, or a disk operating system. Since software is executed in RAM, it disappears from memory when the computer is turned off.

FIRMWARE – The same as software,

except it is executed from ROM, and does not disappear when the computer is turned off. Almost any software could be in ROM, except programs that modify themselves as they run.

Next, let's look at hexadecimal numbers in more detail. Since computers deal in binary (base 2), the true language of computers is either in terms of "0" (off) or "1" (on). However, it quickly becomes cumbersome to refer to large numbers in binary; the base 10 number "458" is "111001010" in binary. So programmers have decided to group numbers in such a way as to make it easy to convert part or all of that number to binary if necessary, but still have numbers (almost) as easy to deal with as our standard base 10 system.

Now, in the familiar base 10 system there are ten digits, 0 through 9. When counting, after you pass 9, you add one to the digit to the left of the 9, change the 9 to a 0, and continue. So, "09" becomes "10", "19" becomes "20", and so on. However, in the base 16 system there are sixteen digits, 0 through 9, and then A through F (representing decimal 10 through 15). When counting, then, you go 7, 8, 9, then A (not 10), B, C, D, E, F, 10, 11, 12, and so on. In the Apple world we have traditionally used a preceding dollar sign to signify a hexadecimal number, so "25" means twenty-five, but "$25" means thirty-seven (2 x 16, plus 5). To translate a hexadecimal number to decimal, use powers of 16:

$$\$B65F = (11 \times 16^{\wedge}3) + (6 \times 16^{\wedge}2) + (5 \times 16^{\wedge}1) + (15 \times 16^{\wedge}0)$$
$$= (11 \times 4096) + (6 \times 256) + (5 \times 16) + (15 \times 1)$$
$$= 45056 + 1536 + 80 + 15$$
$$= 46687$$

The same thing can be done in reverse to convert base 10 to hexadecimal, starting by dividing the number by 4096, then the remainder by 256, then 16. If the number is greater than 65536, you need a bigger power of 16 (and you are probably not dealing with an 8-bit Apple II!) Or you can just get a programmer's calculator like mine that automatically does the conversion for you...

When dealing with memory addresses on an Apple II, we usually designate them as four digit hex numbers (such as the $B65F example above). Numbers less than $1000 often are printed without the leading blank ($400 instead of $0400), and numbers less than $100 are treated the same way ($32 instead of $0032).

THE APPLE II: MEMORY MAP

To understand the memory layout of the Apple II, consider this analogy: Imagine a cabinet with sixteen shelves, and sixteen separate slots or pigeon holes on each shelf (similar to those found in old roll-top desks). Each slot refers to a specific address in memory on the computer, and each slot can hold a number between 0 and 255. (Since a byte is eight bits wide, the largest number that can be represented by eight binary bits is 255). The bottom shelf is row "0", and the leftmost slot in that row is slot "0". The address of that slot, then, is $00. As we move to the right, the addresses increase, $01, $02, $03, and so on to $0F at the end. We then go up to the next row, (row "1"), and the addresses continue in the same fashion with $10, $11, $12, and so on as before. The sixteenth row is row "F", the rightmost slot in that row is slot "F", and the address of that slot is $FF. This cabinet has, then, 256 slots (16 x 16), and

represents what is called a "page" in the Apple memory. The cabinet itself has an address (since computers need addresses for everything), and this one's address is "00". The full address of row "5", slot "A" on cabinet "00" is $005A.

Only the Altair 8800 came with just 256 bytes of memory, so we have to account for the entire 64K memory space that the 6502 chip in the Apple II can handle. There is a cabinet sitting on top of cabinet "00", and it is laid out in the same fashion with its 256 slots in sixteen rows. This is cabinet "01", and on top of that one is cabinet "02"; this continues on up until we reach cabinet "FF" way up at the top. Apple programmers refer to these cabinets as "pages" of memory. There are 256 pages of memory, each with 256 bytes on a page, making a grand total of 256 x 256 = 65536 bytes of memory (or slots that can hold a number, if you prefer the analogy).

In discussing the memory map on the Apple II, we can refer to pages of memory with a hexadecimal two-digit number for shorthand if we wish. The general layout of the Apple II memory is as follows:

Page $00: used by the 6502 processor for storage of information that it can access quickly. This is prime real-estate that is seldom available for general use by programmers without special care.

Page $01: used by the 6502 for internal operations as a "stack."

Page $02: used by the Apple II firmware as an input buffer when using the keyboard from BASIC, or when a program uses any of the firmware input routines.

Page $03: general storage area, up to the top three rows (from $3D0 through $3FF) which are used by the disk operating system and the firmware for pointers to internal routines.

Pages $04-$07: used for the 40 column text screen.

Pages $08-$BF: available for use by programs, operating systems, and for hi-rez graphics. Within this space, Woz designated pages $20-$3F for hi-rez "page" one, and pages $40-$5F for hi-rez "page" two.

Page $C0: internal I/O and softswitches

Pages $C1-$C7: ROM assigned to each of the seven peripheral cards

Pages $C8-$CF: switchable ROM available for any of the seven cards

Pages $D0-$D7: empty ROM socket #1

Pages $D8-$DF: empty ROM socket #2

Pages $E0-$F7: Integer BASIC ROM

Pages $F8-$FF: Monitor ROM

The memory space on the Apple II between $C000 and $CFFF was assigned to handle input and output. From $C000 to $C0FF the space was reserved for various soft-switches used

to control the display, and various built-in I/O devices, such as the keyboard, paddles, annunciators, and the cassette port. (A soft-switch is simply a memory location that, when a number is stored there, changes something in the computer – such as switching on graphics mode). From $C100 to $CFFF the space was reserved for ROM on the plug-in peripheral cards for each of the seven slots. Slot 1 was given the space from $C100 to $C1FF, slot 2 from $C200 to $C2FF, and so on. The $C800 to $CFFF space was special slot-selectable ROM that was uniquely available for each of the seven peripheral cards. For example, a program running on the card in slot 6 to control a device could use the $C800-$CFFF space for its own purpose. When control passed to the card in slot 3, that card could use a program of its own that ran in the same $C800-$CFFF space. This was accomplished by allowing each card to have ROM code that covered pages $C8-$CF, and making that space "switchable", depending on which card wanted to use it. Having this space available made writing ROM code simpler, since it would not have to be capable of running at various memory locations (depending on which slot a card was plugged into).

The memory from $D000 to $D7FF and $D800 to $DFFF was empty on all early Apple II computers. On the motherboard were two empty sockets that were available for the user to plug in their own ROM chips. The $D000-$D7FF space was most often used by a plug-in ROM chip sold by Apple, known as "Programmer's Aid #1." It contained various utilities for Integer BASIC programmers, including machine language routines to do the following:

- Renumber BASIC programs
- Append one BASIC program to the end of another
- Verify a BASIC program that had been saved on tape (to confirm it was an accurate save)
- Verify non-program data that had been saved on tape
- Relocate assembly language routines to a different location in memory (most would only run in one place in memory)
- Test the Apple II RAM
- Generate musical tones through the built-in speaker
- Handle hi-rez graphics from BASIC,

including code to clear the hi-rez screen, set colors, plot points and lines, draw shapes, and load shapes from tape.

All the routines on the Programmer's Aid #1 ROM were written by Wozniak between June 1977 (the RAM test routine) and April 1978 (program renumber and append), except for the music routine, which was written by Gary Shannon.

The other empty ROM socket (covering memory from $D800 to $DFFF) was never filled by Apple. Various third-party vendors sold ROMs for that socket (or for the $D000-$D7FF socket used by the Programmer's Aid #1 ROM), but none made enough of an inroad to be preserved in the INTBASIC file that would later be included on the DOS 3.3 System Master disk. In fact, the $D800-$DFFF space in the INTBASIC file on that disk contains an image of that same space taken directly from the Applesoft ROM! It is completely useless to Integer BASIC, of course, but disk files being what they are, Apple had to fill that space with SOMETHING!

The Integer BASIC interpreter lived in the ROM space between $E000 and $F7FF. However, BASIC only used the space up to $F424. Between $F425-$F4FB and $F63D-$F65D could be found a floating-point math package that was not used by Integer BASIC, but was available for BASIC programmers who were astute enough to figure out how it worked. (An early Apple user group, the Apple Pugetsound Program Library Exchange, or A.P.P.L.E., sold a tape and notes by Steve Wozniak they called "Wozpak", that documented some of the secrets of the Integer BASIC ROM). Between $F500-$F63C there was code that was known as the "miniassembler", which was executed starting at the ominous address $F666. The miniassembler allowed you to enter short machine language programs using the standard 6502 mnemonics (the three letter codes that referred to a specific type of operation; for example, "LDA #" represented the 6502 opcode $A9) instead of entering the program byte by byte in the monitor. The $F689-$F7FC space contained Woz's SWEET 16 interpreter. Wozniak wrote SWEET 16 to simulate a 16-bit processor; it simplified some routines he wrote for the

Apple II ROMs, including the Programmer's Aid #1 renumber, append, and relocate routines. Simply put, he took a series of hex bytes, defined them as "opcodes" the way HE wanted them to function, and when executing the code used his SWEET 16 interpreter to translate the code into legal 6502 operations. It ran slower than standard 6502 code, but when memory space was at a premium it was better to have a slow program than to not have enough room for the program at all.

For those who are keeping count, there are a few unreferenced bytes in the latter part of the Integer ROM. Those bytes contained filler bytes that were not used as any program code.[9,10,11]

The last part of the Apple II memory, from $F800-$FFFF, contained Wozniak's Monitor program which has already been discussed above.

NOTES

[1] Jack Connick, "...And Then There Was Apple", CALL-A.P.P.L.E., Oct 1986, p. 24.

[2] "Memory Organization", APPLE II REFERENCE MANUAL, 1979, 1981, pp. 70-73.

[3] Val J. Golding, "Applesoft From Bottom To Top", CALL-A.P.P.L.E. IN DEPTH #1, 1981, p. 8.

[4] Michael Moritz, THE LITTLE KINGDOM, p. 157.

[5] Steven Levy, HACKERS: HEROES OF THE COMPUTER REVOLUTION, pp. 260-261.

[6] Steve Wozniak and Allen Baum, "A 6502 Disassembler From Apple", Dr. Dobb's Journal of Computer Calisthenics & Orthodontia, Sep 1976, pp. 22-25.

[7] Jack Connick, p. 23.

[8] Christopher Volpe, "Beep: A Tale of (T)ERROR", CALL-A.P.P.L.E., Mar 1983, p. 114.

[9] Bob Bragner, "Open Discussion", SOFTALK, Nov 1983, pp. 51-52.

[10] PROGRAMMER'S AID #1, 1978.

[11] Dick Sedgewick, "SWEET 16 – Introduction", MERLIN USER'S MANUAL, 1982, pp. 103-109.

NEXT INSTALLMENT:
The Apple II, continued

News from the Software Director

submitted by
Gregory L. Carlson

APPLE II DISKS

eDOM #96 – AppleWorks Templates
June 1993

Here's a few more templates for you AppleWorks users. Included are:

AMORTIZATION 252 MONTHS
by John Denzer.

Purpose: To figure monthly payments to pay off a loan. From 1 to 21 years.
Features:
1. One place to enter data.
2. Straight forward, easy to use.
3. Totals yearly payment and principle.
4. Unfortunately it assumes you start payments at first of year.
5. Each month informs you as to how much of your payment goes to interest and how much to principle.

WIFE.ANCESTRY AND HUSBAND.ANCESTRY
by Brian Theil

The templates called "HSBND.AN-CESTRY" and "WIFE.ANCESTRY" are designed to help two people document their family tree back four generations. It can easily be adapted to a single individual. Each generation is contained in a column with a generation label at the top of each of the four generation columns.

AUTO WORKSHEET
by Tony Criswell

This is a worksheet I did when I was shopping for a new car. Many times it is favorable to inflate the trade value of your present car and add that to the price of the new vehicle. This gives a greater percent down which can ease financing the new one.

BIBLIOGRAPHY

This is a simple form to keep track of your personal library.

You can sort your books by the usual name, author, and kind of book. I would suggest that you devise a code to use to signify what kind, ex. s – sci fi, h – horror, a – adventure, etc., this would go in the category of type. The reason why I suggest you use one letter symbols it allows more for you to put in that category. When it comes time to sort your books you will have a cross reference.

CHECK RECON

This is a rather simple spreadsheet that is based on what is probably on the back of your monthly statement from the bank. Be sure to rename the template or don't save it once your done.

HOME BUDGET
by Stan Hecker

The template on this disk HOME BUDGET and this introduction were written entirely by the author and are released to the public domain via the Apple LUG (Lansing Users Group). Any resemblance to any commercial product or other program or template is entirely coincidental; probably the result of similar, independent approaches to common problems through a common applications program. So there.

Home.Budget.V4 – (Spreadsheet) Helped the author get family finances under reasonable control after a half-decade of paper-and-pencil efforts. All cells left intact, but amounts and names were disguised to protect the rich and poor alike.

Although the application is common, most home budgetmakers suffer from lack of foresight. The mass of birthday gifts are forgotten, no budget is set for automobile repairs or home repairs, etc. Even in this template, there is no provision for replacing home appliances, the children's college funds, a new computer, or other prudent budget items.

Nevertheless, this one worked for the author, and it may give you a start. It is set for manually-directed recalculation, no fields are protected, most cells are not efficiently cross-referenced, and some calculated cells are clumsily done. If you're a novice at spreadsheets, this one's made for you; it's reliable and relatively uncomplicated, so use it and build on it. As you grow in confidence, you can improve it substantially to meet your needs.

Three-Column Printer, Version 1.01
Public-Domain Software by Bruce Mah

As too many users are painfully aware, the AppleWorks database suffers from an unfortunate lack of reporting functions. True, the appearance of AppleWorks 2.0 and some additional third-party programs such as Autoworks and Infomerge provide some additional capabilities. However, one basic need is still unfulfilled.

Suppose you have a name-and-address list in AppleWorks which you want to have printed. AppleWorks gives you two options. You can use a tables format, which gives you a hard-to-read and unattractive listing. Or you can use a label-style format, which wastes an incredible amount of paper. What to do?

Enter the Three-Column Printer. This program will read an AppleWorks database file and, using label-style report formats created while in AppleWorks, will give you a two-, three-, or five-column listing on either standard or wide paper.

APPLE IIGS DISKS

GS #65 – PLUNDER + OTHER GOOD STUFF

Telephone Area Codes
MaineFrame Software, '89

This CDA, when installed will give you a quick listing of all telephone area codes and the locations. Note by Greg Carlson: when I used it, my mouse locked up. This may or may not be a problem that is system specific. Install it carefully.

BOOT PROGRAMS:
BOOT SLOT 5, DRIVE 2 & BOOT SLOT 6

These are a couple of quick methods of booting different slots.

DIcEd – Desktop Icon Editor v1.21
DAL Systems
by David A. Lyons
8-Mar-90

DIcEd lets you create and modify icons stored in icon files. Icon files are used by

the Finder and are stored in a disk's ICONS folder.

DIcEd is Shareware. Try it free for ten days and give it to your fellow Apple IIgs® users. Registered users will receive the latest version of DIcEd and will be notified of future updates, which will be available directly from DAL Systems. To reward people who actually bother to pay for DIcEd, updates will usually be made available to registered users BEFORE they are uploaded to CompuServe, GEnie, and AppleLink – Personal Edition.

DIcEd requires System Disk 3.2 or later.

Iconographer – GS Finder Icon creator and editor
Version 1.1 – February 21, 1988
ShareWare $5
By Lunatic (Bruce Mendez)

Iconographer allows you to create and edit finder icon files up to 62 pixels wide by 40 pixels high. I recommend that you don't create any larger than 54 by 21, as anything larger than that starts running into the icons on either side. A maximum of 40 icons may be in a single file, depending on the size of the icons. I'd say that you would run out of memory before that, however. I haven't actually tested the upper limit, though I do know that it can handle the FINDER.ICONS file, but not a file of desk accessory icons that I downloaded from GEnie.

P8CDA V1.1
DAL Systems
by David A. Lyons
22-Dec-87
ShareWare $10

Most users will want to insert P8CDA as an invisible part of the boot sequence on a ProDOS 8 disk. Any kind of ProDOS disk will work (3.5", 5.25", Hard drive, RAM disk, ROM disk, or whatever you have).

PLUNDER!
by Ken Franklin
(Review by Bill Job)

This game is Reliefware – very similar to Shareware. Please try it out for a week. If you enjoy it, please pay for it by sending $15 to Ken.

IMPORTANT! ALL money received for this game will be given to charities working for homeless relief. I intend to choose charities that show a good record of truly benefiting homeless families. I do NOT intend to keep any of the money. If

you enjoy having a roof over your head and a computer within it, please consider paying the Reliefware fee.

PLUNDER! is a game of chance and daring for 2 to 4 players of any age. Any or all of the players can be run by the computer. It is written in ORCA Pascal, which uses the speed, the stereo sound, and the advantages of GSOS 5.0.2. The program contains over 500K of digitized sound and graphics files, packed into a single file for ease of use.

The object is to collect the most money. You do that by selecting various treasure chests, depicted on the screen. But beware! one of the chests contains a BOMB! If you select it, you and all others remaining in the treasure room are finished. You win by leaving the treasure before someone selects the bomb. A good game for kids.

STARTSOUND
Startup Sound Player, by Guy T. Rice
Version 1.2

This program is a close relative of STARTPIC. What STARTSOUND does is it plays a digitized sound file when you boot your computer. You can create these digitized files with an MDIdeas SuperSonic Digitizer, or with a Future Sound digitizer, or even with a Macintosh! (Finally, a good use for a Mac.)

Version 1.2 of this program allows for multiple startup sound files, named SOUND.A, SOUND.B, etc. SS.CONFIG has been modified so that you can set the playback rate of these files separately.

Since loading sound files takes time, I would suggest digitizing sounds at the slowest possible rate, so that they take up the least amount of space and can be loaded quickly. The quality of the sound goes down, however, when you digitize slowly. Its a tradeoff, but I think it's best to speed up the boot process by slowing down the digitizing rate.

When playing back files digitized on a Macintosh, a playback rate of 200 or 400 usually works best. You'll have to experiment a little with each file to be sure.

GS #66 – Desk, Disk, Star Trek
This disk contains a potpourri of various collections of stuff:

ESP Screen Saver
This CDA, when installed and activated, will save your current SHR screen to the current disk. Note by Greg Carlson: when I used it, my mouse locked up. This may or may not be a problem that is system

specific. Install it carefully.

DESKPICTURE
Jeff Noxon

This cute little INIT file will allow you to get rid of your drab desktop, and replace it with a picture of your choice. Any SHR picture can be used. Two are provided. Just drop the INIT in your system setup folder, along with your picture (MAKE SURE YOU NAME IT Deskpicture – if you don't, you will be unable to boot your system), and reboot.

Disk Covers Version 1.1 and T.I.M. Version 1.0
T.I.M. and DiskCovers copyright 1988 by E.S.P. Graphics
GrassHopper Software™
FreeWare

I have a large collection of Graphics, I call them Pics, which I have downloaded, scanned, digitized, or on rare occasion created. They are stored on disks by category such as cartoons, space, etc. The disks are named by category and I wrote slide show to view them.

I thought it would be fun to take one Pic from each disk and make a large Icon from it that would pop up on the desktop when the disk was inserted and run slide show when it was double clicked.

This would be a kind of album cover like my cd's have, to help better remind me of the contents of the disk.

Bill Job says: " Takes a graphics from almost anywhere and makes an icon from it that pops up whenever the disk is inserted. Double-click the icon and run a slide show. You must have Deluxe Paint or PaintWorks Gold to make the icons.

IW2 CDA V2.0
by Bill Ruff
FREEWARE

This CDA allows you to send control codes to an ImageWriter II Printer connected to the slot 1 port of the GS. This version supports a large number of codes that I think are most useful in immediate mode.

Star Trek Info
A data base of all of the original Star Trek episodes, plus graphics of Captain Kirk, Enterprise, NCC 1701D, Picard, Star Trek Montage, Troi, and "SPACE".

Eamon Adventures

Welcome to the Wonderful World of EAMON
(excerpts from the Player's Manual)
by Donald Brown

EAMON is a computerized version of what are called "Fantasy Role-Playing Games." When you enter the universe of one of these games, you are no longer John (or Jane) Smith, mild-mannered computer hobbyist. Instead, you become a character in a land of adventure, doing almost anything you want.

In the land of Eamon, you will be a member of the select Free Adventurers Guild, which is made up of hardy individuals like yourself who want to live by your wits, defeating horrible monsters and finding glorious treasures. (For those of you who want a more calm life, you will have to wait for the game "Adventurers in the Land of the Certified Public Accountants".)

Unlike most games, there is no single set goal for you to achieve, no way to 'win' the game. Instead, in Eamon, you have a lasting goal to both better yourself and also get rich. If you set for yourself another goal (do good to all princesses, kill all evil wizards, that sort of thing), you may also work towards it in your quests.

To run the adventures of Eamon, you need an Apple II(+,e,c,c+,gs). The other thing you must possess for Eamon is a large dose of imagination.

Far away, at the dead center of the Milky Way, is the planet of Eamon. It doesn't orbit any suns – all of the suns orbit it. The shifting pulls of all of these great bodies bring strange forces to bear upon this planet; twisting light, tides, even the laws of science itself! Strange things happen there, and the citizens of Eamon must always be adaptable, for things are rarely what they seem, and even more rarely what they were yesterday!

You are a citizen of this weird world. You are a free man (or woman) out to seek your fortune in this world of shifting laws and time. You will usually find yourself fighting terrible monsters such as Orcs, Trolls, and Dragons to get their treasure. However, at times you may find yourself fighting such varied opponents as Billy the Kid and Darth Vader! Anything can happen, anything at all.

EAMON is a fantasy role-playing game. This means that the computer will generate a character for you and you will pretend to be that person. You will command your character into fierce battle, where hopefully he/she will emerge victorious and wealthy.

Obviously, not all characters are equal in ability. Three numbers (called attributes) describe various parts of your physical condition. You also will have various abilities with weapons, which will increase as you gain experience with them, and learn how to better use them. Additionally, you will be able to learn some powerful magic spells. (Of course, you will have to be taught these spells, and the teacher will charge you for the job!)

EAMON is usually non-sexist – there is full room for both male and female adventurers. However, for simplicity's sake, an adventurer will usually be referred to as 'he' – please understand that it refers to 'she' adventurers also.

Eamon Master/Adventure #1
"The Beginners Cave"
by Donald Brown
Eamon Master

This portion of the disk is used for each Adventure in the series. There are presently about 100 Adventures or Quests to test your Character. Each time you partake, the Character you have created can visit the Main Hall.

The Main Hall contains a bank where you may deposit part of your Gold collected on a Quest. Here, too, you can make purchases: Armor, Spells, Healing Potions, etc. Some Adventures allow you to be Teleported between the location of your Adventure and the Main Hall whenever you wish – great for stashing-away all that Gold!

This disk also allows the 'attributes' such as Charm, Strength, and Experience to be carried-over from one Adventure to another. Another nice feature, which necessitates having this Master disk, is that you are not limited to creating just one Character. You can have several 'on-hand' for various 'assignments'. You might create one named Hurcule (or Robotron or Bruzer or whatever) whose Strength, Healing Powers, and Experience are unparalleled. He might be a good choice where brute-strength is a major deciding factor in the Adventure's outcome. And, you could have another Adventurer named something like Alakazam whose attributes were high on Spells, Charm, and Potions. Its all up to you!

The Beginners Cave

You have no trouble finding a horse that you, well, borrow to take you on your first Adventure. You follow several signs to take you to the Beginners Cave.

As you stand there, you see the local Knight Marshal come out to inspect you. He shakes his head and says, "You must have at least one Weapon to Adventure here! Go back to the Main Hall."

Upon your return you again get the 'once-over'. Having purchased multiple Weapons, he now tells you, "You may only take one Weapon into the Cave. Which shall it be?"

You make what you hope is a smart decision and you're off on your very first Adventure, into the Beginners Cave.

Eamon Adventure #2
"Lair of the Minotaur"
by Donald Brown

Adventurer, you are in big trouble. You had arranged to meet in the town of Dunderhaven with your girlfriend, Larcenous Lil. When you arrived, you learned that Larcenous Lil had come into town flat broke, and had tried to pick up some easy cash by burglarizing a nearby Castle. She hasn't been seen since.

Making your own subtle entrance into the Castle, all seemed to be going well until suddenly the lights go on and you see yourself surrounded by Bowmen and a fat, ugly man on a Throne. He sneers at you and says "Well, boys, another thief. I guess we'll send the scoundrel to meet the first." With that, he pulls a lever, and the bottom drops out of the floor.

Eamon Adventure #3
"Cave of the Mind"
by Jim Jacobson and Red Varnum

As you prepare for your next adventure, you meet a short little man outside the hall. He beckons you to see what he is holding.

As you get closer, you notice a Grail with a strange, bubbling green liquid within. In a strange low voice he says:

'Most adventures are for normal adventurers. but you are special, and should try the most challenging adventure you could imagine.' With a sly wink, he hands you the Grail.

You look at the potion, then back to the man – but he has disappeared.

Not being one weak on courage, you raise the grail to your lips and quaff the potion.

Eamon Adventure #4
"Zyphur Riverventure"
by Jim Jacobson

Your next task is a large one. A famous scientist (Prof. Axom) was kidnapped 3 months ago. The Society For the Preservation Of Scientists (SFPOS) has offered a reward for the safe return of Professor Axom (who is also a friend of yours.)

It has been rumored that the infamous Black Warrior (who lives somewhere along the Zyphur River) was responsible for the kidnapping. You must follow the river, find the Professor, and bring him back...alive!

You now proceed to the dock, where you will start your adventure.

Eamon Adventure #5
"Castle of Doom"
by Donald Brown

Welcome to the Castle of Doom!

The Castle of Doom is run by two kindly old ladies who want to give valiant Adventurers a little bit of excitement.

You will be traveling in a round Castle just chock-full of evil Monsters and wonderful Treasure. A special treat for you in this Dungeon – the owners will keep things as they are if you choose to return to the Main Hall to heal up for a while!

(Assuming, of course, you can make it out!)

Eamon Adventure #6
"The Death Star"
by Donald Brown

As you left the Main Hall, you suddenly felt a queer wrench in your stomach, as if you had been turned inside-out, then right again. When things became clear again, you found yourself at the helm of a spaceship! You realize you have gone through a Reality Shift! You are in a parallel universe. You must stay in this universe until you fulfill some quest. Although you have no access to your old gear, your body is the same. However, none of your old spells will work.

By searching new 'memories', you find out your situation, which isn't good!

You are aboard the Millennium Falcon, which has just been dragged into the Empire's evil machine of destruction, The Death Star! To escape, you will have to find destroy the equipment in either the tractor beam machinery section, or the power machinery room.

You are equipped with a light-sabre.
Good luck, Adventurer.

Eamon Adventure #7
"Devil's Tomb"
by Jim Jacobson

Now you've done it!

As you started your next Adventure, you accidentally stumbled upon an old book that described a very perplexing and challenging Dungeon – in Hades!!! As you read the book, you suddenly hear a booming Voice from nowhere say "So, you think you are a Noble Adventurer? If you want a challenge, try my Dungeon!" As the Voice chuckles fiendishly, you realize that you are falling down a dark, narrow shaft. After you hit bottom, you see that you are in a Dungeon cell. The Voice says "Good luck, sucker!"

Eamon Adventure #8
"Abductor's Quarters"
by Jim Jacobson

Adventurer, you are needed.

A friend of yours, the previous Adventurer, is in trouble. After trying to retrieve some of the many valuable Treasures in a nearby Dungeon, your friend mysteriously disappeared.

After careful research, you discover that the Dungeon your friend went to is controlled by a mad Adventurer known only as 'The Abductor'. You must find your friend before the Abductor gets nasty and heads start to roll.

Eamon Adventure #9
"Assault on the Clonemaster's Fortress"
by Donald Brown

You were walking away from the Main Hall when you felt that unpleasant wrench in your stomach again. You are in another Universe. This time, you have your normal body and Weapons. You just need to find your way back.

You came upon a group of people who knew of your plight. They are Rebels, and can return you to your World. They will show you the way, if you will only first go with some of their men on a raid in the Fortress of the dreaded Clone Master. When they inform you that they will kill you if you don't go along, you agree.

Before the Rebels will return you home, you must do two things – kill the Clone Master and destroy the device that keeps him in power – the Clonatorium!

Three of their men will accompany you.

Good luck, Adventurer.

Eamon Adventure #10
"Magic Kingdom"
by Dave Cook

Recently a local evil sorcerer was spying on you through his crystal ball. He overheard you talking about him and, having a short temper like most evil sorcerers, he instantly sent you to the Magic Kingdom thinking you would never return.

Eamon Adventure #11
"Tomb of Molinar"
by Donald Brown

"Molinar was", the King told you, "the last of the Great Wizard-Kings. He ruled wisely for centuries, until he finally grew weary of this life. He prepared for himself a special chamber to sleep the endless rest in. However, he still loved the land he had ruled for so long, and built his tomb so that a worthy soul and valiant hero could call him forth again. Adventurer, our need is great."

"The enemy has summoned forth a being of great power. If the being runs unchecked our kingdom is certainly doomed, possibly all on this globe as well. None of our people alive can stop this creature. Our only hope is to call upon our great past leader. You must find the tomb, enter it, and bring back our savior."

So the king ordered you, and so you set out. After weeks of searching, you have found the tomb. The magical paper tells you that things are desperate. You can't go for help. You must enter the tomb alone. Good luck!

Eamon Adventure #12
"Quest for Trezore"
by Jim Jacobson

Adventurer, you are about to face your most trying task. A powerful and evil Wizard has captured a friend of yours. You cannot fight this Wizard, but another Wizard can. You must therefore set off to find Trezore, the powerful and great Wizard whose Spells have helped you before.

However, Trezore does not like just anyone to barge in on him. He has set up a test to find out if Adventurers like yourself are worthy of him. You will undertake many tasks, but this is probably the most difficult.

Good luck!!!

MACINTOSH

Mac eDOM #881 – Office Desk 2
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JUNE 1993

Mac eDOM #881 contains more files handy for your office environment.

DeskMates

This is a shareware program containing: a resizable, customizable analog clock that works in the background;

a notebook with a text editor not limited to 32,000 characters, with full search, find (including grep) and replace functionality; a stopwatch able to run in the back or foreground, with 3 timers able to record split times, and 15 alarms which can optionally display reminder text; a calculator containing simple and more complex mathematical formulae including reciprocals, roots, squares, powers, logarithms to base 2, e, 10, percentages, factorials combinations and permutations, and trigonometric functions; a calendar you can set to any month or year; and an alarm clock/scheduler that supports multiple alarms and will notify you of single and recurrent alarms (even several years later). Alarms can be postponed from minutes to weeks. $15 shareware from David Darby.

Invoicer 2.5

A FileMaker Pro template that allows you to keep client data, create invoices, and track billing hours. It also tracks expenses and taxes. Requires FileMaker Pro. $10 shareware from Chris Secrest.

Network Calendar

A simple calendar that can be used on your Mac to keep your appointments. This demo originally came with an INIT that would track the appointment calendars of everyone on a network, but its time limitation has expired. However, the Calendar DA still works just fine on a single user's Mac. Free from Net-Cal.

Mac eDOM #882 – Office Desk 3
Copyright © 1993 Mini 'app 'les
JUNE 1993

Mac eDOM #882 is the third disk of utilities useful around the office; these files will also be handy for home use.

AppleShareSetup

This is a set of INITs (extensions) written by a programmer at Apple Computer which will help manage System 7 file sharing on your network. It will allow you to dismount shared volumes, start and stop file sharing remotely, and remotely control your network functions in other ways. Free.

Color toolbar

Replace your "dull" toolbar in Word 5.1a with this colorized version and brighten up your desktop. Simply remove your existing toolbar, and drag this color version into your Word Commands folder. Free from Matt Martinit.

ComIT17

ComIT will allow you to track your time on-line on bulletin boards and will automatically keep track of accumulated charges. You can set each on-line service individually for a different rate schedule. Several other features provide a telephone database and a place for notes on each service.

Talk-2-Me

With this program, your Mac becomes an intercom allowing you to talk by voice, in real time, to all connected Macs. It also works as an answering machine, recording incoming messages and even playing personalized messages to specific callers. Requires a network, System 7.x, and if you want to talk, an attached or built-in microphone. $10 shareware from Christophe Salzmann.

Virus Reference 2.1.1

A database of information about all known Mac viruses current through April, 1993. Requires HyperCard 2.1 or any version of the HyperCard Player. Free from Software Perspectives.

Mac eDOM #883 – Desktop Patterns
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JUNE 1993

Mac eDOM #883 is a collection of desktop patterns you can import into Wallpaper or Chameleon. The Chameleon demo is included here to help you view the patterns.

Chameleon is a background pattern display extension similar to Wallpaper (see Mac eDOM #835,) which will change the Mac's limitation on the size of the pattern you can show on your desktop. Background patterns can be much larger than normally allowed if either of these utilities are installed. This demo will allow you to view patterns but not save them.

There are several different sample patterns in each folder, all interesting and some quite beautiful. Included are patterns from the following collections:

DeskTopPatterns
MDM's 3D Wallpaper
Soothing Wallpaper
Space Textures
Tom's spring ppats
Chameleon Demo ❤

Current Apple System Software Available Through mini'app'les

Apple II, II+ //c, //e	Version	Date	Format
DOS 3.3 System Master	n/a	09/10/85	5.25"
Apple II System Disk	3.2	07/16/90	5.25/3.5"
ProDOS 8	1.9	07/16/90	5.25/3.5"
Apple IIGS			
GS/OS System (6 disks)	6.0	4/92	3.5"
HyperMover (2 disks)	n/a	n/a	3.5"
Macintosh			
System 7.0 (9 disks)	7.0	4/25/91	3.5"
System 7 v1.1.1 Tuneup	n/a	4/25/91	3.5"
Quicktime (2 disks)	6.0.7	10/09/90	3.5"
HyperMover (2 disks)	n/a	n/a	3.5"

Apple System Software disk prices are as follows:
3.5" System disks $3.00 each.
5.25" System disks $1.00 each.

Notes:

System/Program Disks are available only as a complete set.
GS/OS System v6.0 is $10.00 per set.
Mac System v7.0 is $15.00 per set.

New ProTERM,

- "Jump Start" Quick-Help reference.
- Quick Reference cards.
- Registration materials.
- Sign-up kits for CompuServe, Delphi, Genie, CRS and Dow Jones News/ Retrieval.

Update Policy for Validated Owners

Who is validated?

ProTERM owners who have mailed their ProTERM Warranty/Registration cards for ProTERM 2.2 or 3.0 or have updated from any prior version to ProTERM 2.2 or 3.0 are on our records as a valid ProTERM owner.

Validation and Eligibility for Update:

ProTERM owners who have purchased ProTERM 2.2 or 3.0 but have not registered by mailing their ProTERM Warranty Card, can send the ProTERM 2.2 or 3.0 serialized Warranty Card Registration card or the original ProTERM disks showing the serial number with their request for update.

- Update to ProTERM 3.1 from any ProTERM 1.x or 2.x—$40.00
  or-
- Update to ProTERM 3.1 from 3.0— $30.00
- Basic shipping and handling for ground

shipping within the continental United States—$7.50

InTrec Software, Inc.
3035 E Topaz Cir
Phoenix, AZ 85028-4423
(Formerly InSync Software, Inc.)

Voice 602/992-1345
BBS 602/992-9789
FAX 602/992-0232

submitted by Rand Sibet

AppleWorks Printing,

instructions are given at a later point in the document.

2. To print the second paragraph in Letter Gothic font, place your cursor on the first character in the second paragraph and then press Oa-O, SC, Return, 6, Return, CI, Return, 12, Return, Escape. If you are still in "zoom mode", or if not press Oa-Z, you should now see that the printing instructions at the beginning of the second paragraph reflect Courier font (SC#6) and at 12 characters per inch. Since the DJ's internal Courier font does not produce 12 cpi, the printer defaults to Letter Gothic font. That is really a neat way to access the Letter Gothic font rather than having to sacrifice one of the already in use six special codes to access the font by entering control characters.

3. And finally to print the third paragraph in Courier font, place your cursor on the first character of the third paragraph then press Oa-O, CI, Return, 10, Return, Escape. It was not necessary to enter the special code for Courier font at this time since that instruction already exists at the beginning of the second paragraph and remember that all printing instructions remain for the remainder of the characters in the document until changed. The DJ will now acknowledge the printing instructions embedded in the document for the third paragraph as Courier font and at 10 characters per inch.

Now that our word processing document on the Desktop is ready for printing with all the necessary printing instructions embedded at the proper places, press Oa-1 to get the Cursor to the top of the document so you can see all the printing instructions assuming you are still in the zoom mode. Press Oa-P (print), Return (beginning), Return (selecting the DJ portrait driver if in the #1 position), Return (1 copy) and your DJ printer will print the document with the first paragraph in proportional CG Times font, the second paragraph in Letter Gothic font and the third paragraph in Courier font!!! Fantastic and so Easy now that you know how to use the new special

code features of your modified AppleWorks. The quality of printed output by the DJ will depend on whether you choose Draft mode or Best mode with the Mode key on the DJ. Of course you would not normally prepare a letter with the characters in each paragraph done in different fonts, but this tutorial illustrates how to prepare your word processor documents using special codes and other software printer commands to access any of the standard and internal ROM based fonts of your choice for the particular occasion. The SuperPatch manual elaborates quite clearly on pages 45 through 48 the various features not covered in this article about the DJ landscape driver and other neat things.

Also experiment with your prepared document while it is still on the Desktop and insert at the beginning of any group of words "SC#1" (remember Oa-O, SC, Return, 1, Return, Escape) and at the end of the group of words the special code "SC#2" to have those chosen words printed in italics. Don't forget to also try SC#3 and SC#4 at the beginning and end of a word or phrase that you want double underlined. Both of these printer command features are in the installed DJ printer drivers and add new dimension to your printing output since the IWII can not produce italics or double underlining. Also you can access the mentioned ROM based fonts in different characters per inch and point size with software commands (rather than the font keys on the DJ) by specifying the cpi of choice from the available choices (see pages 46 and 47 of the SuperPatch manual) through the Oa-O and CI printer commands of AppleWorks Classic.

The DeskJet 500 printer is a workhorse of high quality material from a well established company, cost less (under $400) than a new IWII and the better printing quality output achieved from an Apple II computer with such a printer should be of interest to anyone wanting or needing to produce excellent looking document.
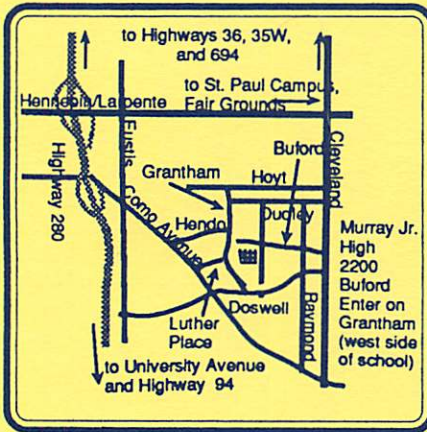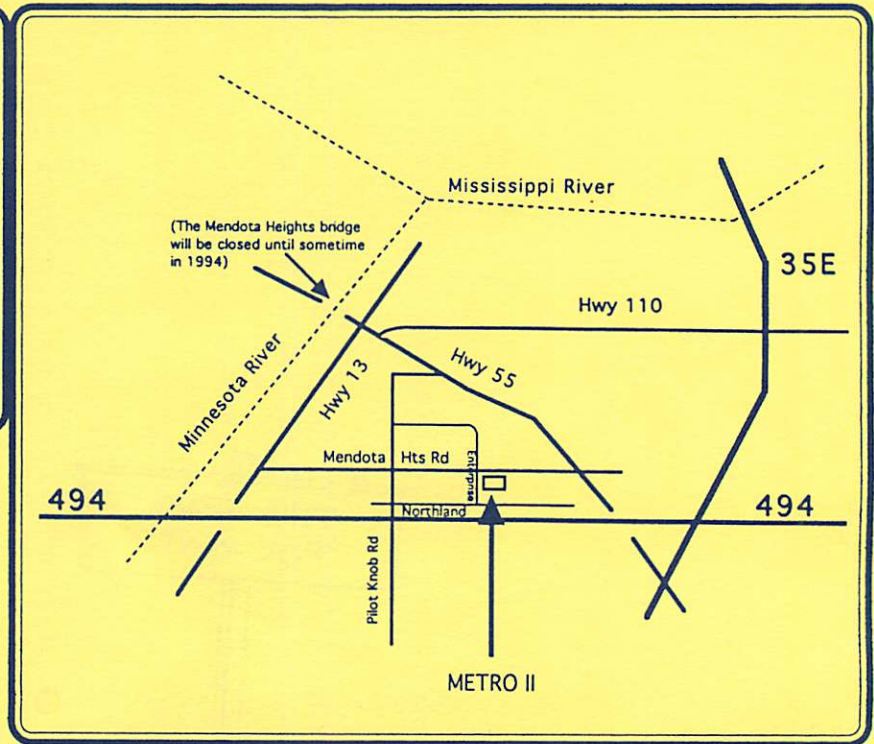
submitted by Tom Gates

THIS SPACE FOR RENT

Meeting maps

Murray Junior High School
2200 Buford St.
St. Paul

Apple II Novice SIG
AppleWorks SIG
Mac Programmer's SIG

Metro II
1300 Mendota Heights Rd.
Mendota Heights

Fourth Dimension SIG