

BMUG

SPRING 1996 NEWSLETTER

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NEWSLETTER ARTICLE SUBMISSIONS

BMUG accepts Newsletter article submissions all year round. If your submission is published you will receive a six-month membership to BMUG.

Submissions can be in any common word processor format, but Microsoft Word version 5 is preferred. For article guidelines see the folder on the Newsletter CD-ROM, the Newsletter conference on Planet BMUG, Planet BMUG South, the BMUG Boston BBS, or BMUG's forums on America Online or eWorld. Submissions should have minimum styles; italics and bolds are fine. All submissions should be made electronically (via email or disk).

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Or email them to: mann_sanchez@bmug.org

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THE BMUG NEWSLETTER

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DEDICATION

When people ask, “What is BMUG?”, the first response is usually that we are a Macintosh Users Group. But what does that really mean? More than anything else BMUG is a membership organization. With out our 10,000 plus members we would not be the largest or best Macintosh Users Group in the world. This BMUG Newsletter is dedicated to all the *BMUG members* in more than 50 countries who have made it possible for BMUG not only to exist, but to thrive.

Our members have been particularly important to us in the last year as we have come through a challenging organizational transition. It was our members who demanded and helped make possible our Internet connection for BMUG Boston and Planet BMUG, providing both hardware donations and technical expertise.

It was also our members who helped us through our recent financial crisis. Some members provided large donations, but more than half of our membership helped by renewing at a higher level of membership resulting in a steady and secure source of funding.

And, of course, it is our members who make our BBSes such great sources of crucial information, friendly conversation, and tons of Shareware and Freeware. This BMUG Newsletter is another example of a cooperative effort by our members to share information.

It is these sorts of cooperative efforts that make BMUG both a wonderful organization and an important illustration, that it is possible to get large groups of people to work cooperatively, to help themselves and others.

It is particularly important at this point in history that there are groups like BMUG which are dedicated to giving away technological information. As information and the technology to access it become the driving force behind the creation of wealth in the world, technologically capable individuals will not only have a major advantage in the workplace, but can also use this information and skills to create a better world for all of us. The cooperative efforts of the BMUG members are helping to ensure that information and technology are equally accessible to all.

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PLANET BMUG & BMUG BOSTON

BMUG ONLINE MEMBERSHIP SERVICES

PLANET BMUG BBS: (510) 849-2684

BMUG BOSTON BBS: (617) 275-3062

One of the privileges of BMUG membership is access to our online community of over 6000 BMUG members.

Planet BMUG, our Berkeley-based BBS, and BMUG Boston, our sister BBS on the East Coast, feature over 35 lines and hundreds of popular conferences. Both BBSes are also now available via TCP/IP for those members with an Internet Service Provider

SO WHICH BBS SHOULD I USE?

BMUG members can opt to use either of our BBSes, but not more than one. Although many of the conferences are gatewayed (mirrored), each BBS has its own style. We suggest you use whichever will be kindest to your pocketbook.

HOW TO GET ONLINE WITH BMUG VIA MODEM:

Complete instructions for creating and using your BMUG BBS account can be found in the article called "How To Get Online with BMUG," at the beginning of the Telecom section in this Newsletter. In the meantime, here are the basics:

1. You get the FirstClass Client; SoftArc:FirstClass Client; FirstClass Client software when you join BMUG either via a floppy disk or via the Newsletter CD-ROM.
2. Launch the FirstClass application and modify the settings file for your modem, add the BMUG BBS phone number, and type in a UserId and password. Be sure to remember these.
 - The Client software comes with the modem settings files for most modems. You can select yours from the pop-up menu of modem types.
 - Be sure you have the correct phone number for the BBS you've selected, and remove the area code if you don't need it to reach the BBSes.
3. Once you've configured and saved your settings file, click the Login button, and it will dial the BBS for you.
4. Once connected, fill out the auto-registration screen that greets all new users. You don't get that much time to fill it out, so please fill it out quickly and completely. Oh—and make sure you use the same information you gave us when you joined BMUG. When you're ready, hit the Register button.
5. Now that you're online, find your way to the Request Validation folder (in New User Info), open it, and create a new message requesting validation (for the account you just created). You can create a new message by typing Command-N, and send it by typing Command-E.
6. It will take the Validation Volunteers a few days to check your request against our database of members. In the meantime you'll have 25 minutes a day to look around.
7. If you have any problems along the way, check the Tips on the following pages, check the article in the Telecom section of this newsletter, or call the BMUG Helpline at (510) 540-1742 and follow the instructions, for pre-recorded BBS hints and tips.
8. Have fun!

INSTRUCTIONS FOR LOGGING ON TO PLANET BMUG VIA THE NET:

Complete Instructions for logging onto Planet BMUG and BMUG Boston via the Net can be found in the articles "Getting Online with BMUG Boston" and "How to get on Line" at the beginning of the Telecom section in the Newsletter. In the meantime here are the basics:

1. Make certain you are using FirstClass Client 2.6 or higher for Macintosh or Windows. Only version 2.6 and up support IP connections. Version 2.7 for Mac and 3.0 for Windows are recommended.
2. Make certain your connection to the Internet is a PPP, SLIP or better connection from a service provider with full-time Internet access. "Internet access" offered by online services such as America Online will not work.
3. Make a new copy of your FirstClass settings file for Planet BMUG or BMUG Boston. From the first screen, click on the "Setup" button and make these changes: First, substitute the appropriate IP address in the Server field of the connection setup window.

The IP address for Planet BMUG is: bmug.org or 206.80.36.91. The IP address for BMUG Boston is: bmugbos.org or 198.69.254.236. Choose TCP-IP.FCP as your connection method.
4. With the connection setup window still open, press the Setup button beside the "Connect via" popup. On the next screen click on "Advanced Settings" and check the TCP port number. Change it to 3004 (it's 3000 by default). Save your changes. Make sure you click Save after you change the setting. If the port is left at 3000 (the default), the server will not allow you to log on to either Planet BMUG or BMUG Boston.
5. Initiate your local Internet connection. Once connected, press the Login button on the FirstClass Login screen. You will be connected to the site if there are ports available. The performance you experience will depend on the bandwidth of your Internet connection and network traffic conditions.

THE BMUG VOLUNTEER HELPLINE

BMUG'S TECHNICAL SUPPORT SERVICE

THE BMUG HELPLINE

The BMUG Helpline is where BMUG members can:

- request a technical support callback from a Helpline volunteer.
- request a Helpline Clinic hardware appointment for upgrades, floppy and hard drive recoveries, internal modem and memory installations, etc.
- listen to pre-recorded tech tips and tricks.

THE HELPLINE PHONE NUMBER

The BMUG Helpline can be reached at (510) 540-1742.

Please allow up to 72 hours for a response—and please don't give the Helpline number out to non-members.

HELPLINE VOLUNTEERS

The Helpline receives hundreds of calls every week. Although we wish we had the volunteer power to answer each call as it comes in, the Helpline voicemail has been designed to take the sting out of requesting a callback by keeping it simple, and clear. In addition, please take advantage of our automated help system. We feel we have provided help for nearly any Macintosh problem you may encounter.

THE BMUG HELPLINE CLINICS

Helpline Clinics are held at the BMUG office, where BMUG members can come to get Mac technical support, hardware assistance (by appointment only), and product recommendations.

Clinics are staffed by enthusiastic volunteers, who enjoy helping others. Please let us know if you'd like to become a Helpline volunteer.

HELPLINE CLINIC HOURS

Helpline Clinics are currently offered on Wednesday, Thursday, and Saturday afternoons, from 1:00–5:00 p.m., and Monday evenings from 5:00–9:00 p.m. at the BMUG office.

BMUG ADDRESSES

The BMUG office can be found at 2055 Center St., in downtown Berkeley.

Please send all correspondence to:

BMUG, 1442A Walnut St. #62, Berkeley, CA 94709-1496.

Mac Problem Quick Fixes

Before You Go to the BMUG Helpline

by Robert Glick

As BMUG Helpline Coordinator, I've realized that a huge percentage of the hardware panic problems and frantic call to the BMUG Helpline can be easily and calmly solved with a minimum of effort and know-how. What follows is a schematic account of the most basic curveballs your Macintosh will throw at you, and how you, *without the aid of the Helpline*, can either solve these problems or affirm that your Macintosh has a serious illness.

Problems with Planet BMUG

Here are a few tips for successfully logging onto and navigating the BMUG BBSes in Berkeley, Boston, and the South Bay:

- Read your Newsletter and the New User Info on your FirstClass Client disk. There are articles in the Telecom section of the Newsletter that describe how FirstClass works, how to configure your modem settings, and how to ask for validation on the Bulletin Board.
- When you register for the first time, write down your User ID and password and put them in a safe place in case you forget them.
- Save a copy of your customized settings file to your Desktop. You can configure your FirstClass settings file by selecting the correct modem in the FirstClass setup screen, entering your User ID and password, and then selecting Save as to save a copy of this file to your Desktop. From that point on, if you double-click on this document, you will initiate the correct login process.
- Please register one time only. If for some reason, you have registered, and FirstClass asks you to register again the next time you log on, this means that you are using an incorrect User ID. You will not be validated if you create multiple accounts.
- If you were validated and, after not logging on for a while, FirstClass asks you to register again, do not fret. FirstClass

software is designed so that if you do not log on for 100 days, the server will delete your account. This cleans up the system so there aren't five trillion validated users. In this case, please register and request validation as if you were registering for the first time.

- Remember to *request* validation. We need a message sent to the Request Validation folder in order to verify that you are a paid member of BMUG. If you do not send a message to the Request Validation folder after you register, you will not be validated.
- If you are having problems logging on during the weekends, this may happen because the BBS is undergoing regular maintenance and backup. Try again on the next day or after a few hours.

Macintosh Emergencies

A Sad Mac or a Mac That Doesn't Chime on Startup

If you get the Sad Mac icon when you start your Mac, it probably means that you have corrupted system software or a corrupted device driver. Try to boot your computer from a floppy disk, such as the Disk Tools floppy that comes with your system software disks. If your computer boots with the floppy disk, you need to re-install your system software (see the section in this article on re-installing your system). If the problem does not disappear after booting with the Disk Tools floppy, you may have a corrupted hard disk driver. In this case, try to disconnect your SCSI devices. If you can successfully boot your computer without SCSI devices, then you may need to update a SCSI driver with a formatting utility such as the one included on the Disk Tools floppy disk.

If your Macintosh doesn't chime when you boot the computer, it means that there is a hardware problem that requires further assistance. Call the Helpline to investigate the problem, and make a Helpline appointment.

A Flashing Floppy Disk Icon on Startup

If you start your Macintosh and you see a floppy disk icon with a question mark, it generally means that your Mac is not booting off of the hard drive and cannot find a working System Folder. This does not necessarily mean that your hard drive has disappeared forever, but it does mean that your system software is probably corrupted. Before calling the Helpline, try re-installing your system software. If this does not work, call the Helpline for more assistance.

A Hard Drive That Does Not Appear on Your Desktop

- Disk First Aid recognizes your hard drive.

Your hard drive may not appear on your Desktop for a variety of weird reasons. First, try to boot your Macintosh with the Disk Tools floppy disk that comes with your system disks, and run Disk First Aid. If Disk First Aid can find your hard drive, then you know that it is still hanging around. If Disk First Aid can't fix your problem, however, you should try to recover your data using a recovery program such as Norton Utilities, Public Utilities, or MacTools (we recommend the latter).

- Disk First Aid doesn't recognize your hard drive, and you have an Apple drive.

If Disk First Aid can't find your hard drive, and you have an Apple drive, try running the Apple HD SC Setup program. You can find this program on your Disk Tools floppy disk. If Apple HD SC Setup doesn't see your Apple drive, you have a dead, deceased, and post-moribund hard drive. If Apple HD SC Setup does recognize your Apple drive, you may be able to update the driver and recover your data—instead of having to reformat your hard drive and lose all your data.

- Disk First Aid doesn't recognize your hard drive, and you have a non-Apple drive.

If you don't have an Apple drive, you'll need to use a third party hard drive utility program such as Silver Lining or Hard Disk Toolkit.

- Other adventures

You can also try the following if your hard drive doesn't appear on your Desktop: Remove all external

SCSI devices from your Macintosh, and add them back in one at a time to see if you can isolate which SCSI device is giving you problems. In addition, try reseating all your cables. Sometimes a bad connection can cause your SCSI devices to act strangely or not to act at all.

If none of the above things work, call the Helpline, and we'll help.

Printing Problems

A g'zillion things can cause problems with printing. Here are some simple things to try before consulting a higher power.

- Make sure that all of your connections have power and are connected properly.
- Go to the Chooser in the Apple menu, and make sure that your Macintosh recognizes the printer.
- Check to see that the printer is connected to the proper port.
- If you think your problem has to do with fonts, try creating a new document in your application. Type a few things in this program with a basic font such as Helvetica, and print. If this works, your problem is with the particular font you are using.
- If you are sharing a printer on an Apple-Talk network, make sure that everyone is using the same driver. If you use multiple drivers, printing will take forever and more.
- Sometimes printing problems happen because the computer confuses the serial ports. You can clear the serial ports by zapping the Parameter RAM (see the section on zapping Parameter RAM—known as PRAM—in this article). You zap the PRAM by holding down Command-Option-P-R while starting up your Macintosh. When your Mac chimes, let go of the keys and let it boot up normally.
- Some applications output PostScript files directly. If you see a message that says, "Cannot print due to PostScript error," try opening a new document. Cut only the things you need from your document with the error message, and paste into the new document. Save this file, and try printing.

If none of this works, and you're fed up, call the Helpline.

Basic Macintosh Problem Solving

A Clean System Install

If you need to re-install your system software and are using System 6, you can install new system software over the existing system software. If you are using System 7, you need to do what is called a clean install.

To perform a clean install, boot your System 7 Macintosh using the Disk Tools floppy disk. In the System Folder on your hard drive, move the system and the Finder to the Trash. In the Preferences folder, move the file called Finder Preferences into the Trash as well. Empty the Trash. Once you have thrown out these three files—the system, the Finder, and the Finder Preferences—give the existing System Folder a new name, such as *Old System Folder*. This will ensure that you end up with a brand new System Folder and important files in your old System Folder will not be trashed.

After you trash the files and rename your old System Folder, you can restart your computer using the first of your system install floppy disks, and proceed with your System 7 installation.

Rebuilding Your Desktop

The Desktop file is an invisible file that keeps track of your icons, documents, and applications. Because the Desktop file can get confused, it is sometimes necessary to rebuild your Desktop. To rebuild your Desktop file, hold down Command-Option *after* all of your extensions and control panels have loaded, and *before* the Desktop appears. The system software will ask you if you want to rebuild the Desktop, and will inform you that all Get Info comments will be lost. Click the OK button and the Desktop file will be rebuilt. Note that while this is an effective way of rebuilding your Desktop, there are Shareware utilities on Planet BMUG that will rebuild your Desktop more thoroughly.

Zapping your Parameter RAM

Parameter RAM, also known as PRAM, is where your Macintosh keeps track of settings defined by the user, such as time of day, mouse speed, keyboard repeat rate, and startup driver preferences.

If you are using System 6, you can zap your PRAM by holding down Command-Shift-Option while opening the

control panels from the Apple menu. The Mac will beep to tell you that the PRAM has been zapped successfully.

If you are using System 7, hold down Command-Option-P-R while starting or restarting your Macintosh. When the Mac chimes to tell you that the PRAM has been zapped, you can let your computer boot normally.

Similar to rebuilding your Desktop, there are Shareware PRAM zappers that will do a more complete job of zapping your PRAM than this procedure.

Playing with Extensions

To figure out whether your extensions are causing problems, try to boot your computer with the extensions off. You can do this by holding down the Shift key when starting up the computer. If you do this successfully, the computer will tell you it is booting up with the extensions off. If the computer works fine, then you know that one or more of your extensions is problematic.

At this point, it's a matter of isolating the corrupted or difficult extensions. Start adding one or two extensions at a time and restart your computer until the computer stops working. In this manner, you can find out which ones are not working, or are having conflicts with other extensions or software. There are Shareware programs such as Extensions Manager or commercial software such as Conflict Catcher that will allow you to manage your extensions—and to test for conflicts.

Calling the Helpline

While this guide will help solve many of the easier problems your Macintosh will have, there are many more complex problems which these quick fixes will not affect. For more complex conundrums, my best advice is to call the BMUG Helpline and relax. *Remember that each time you lose your cool and scream at your computer—or at someone close to you—because your computer is on the blink, you are probably taking some time off of your life, and to be honest, the computer isn't worth it.* Remember also that the BMUG Helpline volunteers are people, are human, and are doing everything they can to solve your problem. Call the BMUG Helpline, and we'll do our best to help you solve your computer woes.

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What's News?

What You See Is What You Get—A Bit Dramatic, But Every Bit BMUG

A Letter from Emeline Mann Sanchez, BMUG Newsletter Editor-in-Chief

Not very long ago, well known news entities covering the nation from the East coast's *New York Times*, to the West coast's *Los Angeles Times*, stunned the world with horrible news. Communists had deliberately attacked American destroyers in international waters; it was only right for the United States to retaliate and halt this new aggression. This incident, this story, this lie, was the product of tragically inaccurate news reporting. The coverage of this phantom attack was instrumental to Congress' passage of the Gulf of Tonkin Resolution in 1964, which for all intents and purposes, launched the Vietnam War.

In news closer to home in a time not too distant, a newly elected president calmed public fear when a disastrous oil spill occurred in the Santa Barbara Channel. This president not only announced that the situation was under control, but proved it by conducting an inspection tour on a sparkling clean Santa Barbara beach. What the president and the press neglected to disclose was that this stretch of beach was cleansed for the event, and that miles of beach to the North and South were devastatingly entrenched with crude oil. More probing news coverage of this president would ensue in his term-defining 1972 Watergate scandal.

And you thought truth-in-advertising was a joke. News writing is not quite the serious business it's made out to be. In his book, *The Brass Check*, Upton Sinclair was able to reflect with dry humor his experiences as a witness to, and victim of, American journalism of the early

1900s, when the unchecked presses of the day were owned by the big monied interests. Submissions from Sinclair and articles about him were mangled with a vengeance by editors and publishers unable to stomach his socialist views. In fact, until the truth forced governmental acknowledgment, Sinclair's *The Jungle*, an exposé into Chicago stockyard's labor and meat-handling atrocities, was met with harsh criticism. A widely syndicated news column claimed Sinclair's report as "...insane rant and drivel." Last year's reports of E.coli bacterium in our dairy meats sure makes Sinclair's book seem like a current affairs resource.

No News... Is Good News?

A staff reporter for the *S.F. Examiner* once said he knew that the publisher of a well-known alternative Bay Area newspaper was a drunk and a liar. But that didn't stop him or his editor from printing this publisher's inflammatory statements without challenge. This happened some months ago. It was the assistant to the said publisher who alerted me to this sad statement of our current news media practices.

We know to take a sighting of Elvis at the corner laundromat with a grain of salt. But do we know if what we read in the papers, what we hear on the radio, or what's being said on the 10 o'clock news is truth or fiction? After all, many of these entities are owned by big conglomerates—soon to be even bigger judging by the ever-popular trend of big mergers and acquisitions. But out of this cesspool of ill-begotten misinformation,

we have that stellar, and oftentimes truly exceptional, BMUG Newsletter. A beacon of truth from the masses; you know they're not writing for the money. You've heard it from my predecessor, Hans Hansen: "...no advertising and no affiliations..." We have nothing to gain except the act of trying to inform and to help others. It's as simple as that. As Tony Hester wrote for *The Dramatics* in their classic 1960s' record album, "watcha see is whatcha get."

If you've never contributed to the Newsletter, you should try it. Even if you're a writer by profession, you'd be amazed at how thrilling it is to be uncensored—free to tell it like it is. The submissions deadline for the Fall 1996 BMUG Newsletter, is May 1, 1996.

She Said, He Said...

Bruce Linde, BMUG Board of Directors alternate member and longtime advocate of BMUG, is no woman. But, in a brilliant flash of inspiration, Bruce suggested a new section for the Newsletter to focus on women and computers. It proved to be an idea too good to pass up as Hoai-An Truong, former BMUG staffer and longtime volunteer, took the baton and immediately cyber-solicited for submissions. By the time I got into the act, it was a little too much, too late. So look for more on this in future issues.

To CD, or Not To CD...

As the technology whizzes through our little BMUG office, we are constantly in a state of starts and stops, trying to decide whether to go with new media—

as with our last Newsletter's CD-ROM debut—or to stay with the good old floppies. CD-ROMs allow for more goodies, but not all of our members can afford the latest and more costly equipment. But then again, BMUGers are always finding ways around a rock and a hard place. Well, you know what they say... never look backwards, unless it's flashing red and blue lights accompanied by sirens you didn't hear because your radio was on too loud. Just don't do anything stupid, like unbuckle your seat belt to get at your driver's license in your back pants pocket. Wait for the officer to ask.

So once again, the Newsletter CD-ROM, for your perusal and enjoyment.

What—Me Worry?

I came into the production of the Newsletter midway, when the initial October 15 submissions deadline had just passed. Because it took me a while to get into the swing of things, we extended the real, absolute deadline to November 1. Well, you know how that goes... what I would like to do now is to invite past, present, and future contributors of the BMUG Newsletter to submit early, and submit often. Your voice is important to us. Write, type, sing, beat drums—however you communicate, communicate with us. The Newsletter is a labor of love. But sometimes, love can be a pain in the butt. The BMUG staff and the many BMUG volunteers that make the News-

letter possible are the true heroes of our time. They understand pain. They deal with it. They make my life less painful.

What More Do You Need To Know?

My favorite school was John Hancock Elementary. I was good at kickball; you can ask Billy T., the class bully. I graduated from City College, San Francisco, as a Graphic Design major, and by intervention of mother, graduated from UC Berkeley with a degree in Applied Math (applied to computer science). I got the last word in, of course, when I got my first job (not quite true—my first job was counting out cards for a Chinatown gift shop when I was around 8 years old) doing mostly graphics and copywriting work at the Naval Air Station in Alameda. I resigned as acting manager of the Media, Marketing Department for the Morale, Welfare and Recreation Department, known previously as Special Services. Figure that one out.

I've worked for 8 years in many, many jobs ranging from Senior Graphics Production Artist (buzz-sawing exhibit graphics at the Exploratorium) to The Art/Marketing Department (small 4-color print shop, Colorfast), and most recently, Art Director (*SF Sentinel*, a gay and lesbian newsweekly) and Production Manager (*Asian Week*, an Asian American newsweekly).

As an alumni of the KPFA Apprenticeship program, I've trained new apprentices on skills for radio producing, and produced and edited public affairs features aired on Asata Iman's *Brainstorm* and Susan Stone's *Audio Evidence*, two very cool radio shows (on 94.1FM, of course). Master Engineer Jim B. has yet to snare me into board op-ing, but that'll come.

When I came into BMUG, I thought it would be an easy job. I now pay big homage, *big* homage, to Hans Hansen. How did you do it?!?! (Thanks Hans, for answering all my calls for help.) There's just a lot of things happening at BMUG, half of which I'm not involved in. The other half keeps me spinning on my toes. This is not easy since I'm recovering from a foot injury, so bear with me until next issue. ☞

Resources I used:

Through the Media Looking Glass
Decoding Bias and Blather in the News
 by Jeff Cohen and Norman Solomon
 Published by Common Courage Press
News
The Politics of Illusion, Third Edition
 by W. Lance Bennett
 Published by Longman Publishers USA
The Brass Check, Ninth Edition
 by Upton Sinclair
 Published by the author

Letter from BMUG's Development Director

Colleen Miller

Dear BMUGers,

As I write to introduce myself, I hope this letter finds you well. I am the new Development Director of BMUG and am discovering that I have my work cut out for me in this position!

BMUG, as you probably know, has been experiencing financial difficulties for some time now. Thanks in large part to the efforts of our new Executive Director, Ann Wrixon, BMUG is moving into a new era—an era of growth, productivity, prosperity, and positive challenge.

BMUG is more dedicated than ever to remaining the largest membership-based Mac consumer advocacy group in the world. In addition, we are also extremely committed to providing a wealth of services to our members, including creating BMUG products, solving member problems, hosting main meetings, teaching classes, and leading special interest groups.

To venture forth into this new era, however, requires your support. As we've said many times in the past, active members make BMUG a success. This support can take many forms including volunteering for the BMUG Helpline or volunteering at Expos and Fests.

The member support that this letter is requesting, though, is a contribution of money. BMUG has been looking at

numerous ways in the past few months to cut costs and increase revenues. We've been quite successful in those areas, *and* we have a long way to go. Ann and the BMUG staff members have been looking into the future of BMUG and coming up with solid goals for growth. Your contribution to our general fund will help us accomplish many of these goals, and will allow us to take BMUG into the future as smoothly as possible.

Please make any tax-deductible contribution you can, and keep your eye on BMUG. We're ready to fly, and with your help, this year will be a stellar one for BMUG.

Make your checks payable to "BMUG." The mailing address is listed below. Please put "Attention Colleen" on the envelope.

Thanks in advance for your much needed support. ✈

Sincerely,

Colleen Miller

Development Director

BMUG, Inc.

1442A Walnut St., #62

Berkeley, CA 94709

Phone (510) 549-2684

Fax (510) 849-9026

Letter from the Executive Director

Ann Wrixon

The last six months have been a time of tremendous change and growth at BMUG. We have been working to make BMUG even more user friendly by improving services and developing new products for our membership.

BMUG on the Internet

Both BMUG Boston and Planet BMUG BBSes (electronic Bulletin Boards) are now accessible via the Internet. This means that anyone with an Internet account can access the BBSes from anywhere in the world for the cost of a local phone call. For the first time BMUG members from around the world can participate regularly on our BBSes, making BMUG a truly international community. It also permits more people than ever before to hear about and be part of BMUG.

The BMUG Newsletter

After many years as the BMUG Publications Manager and Editor-in-Chief of the BMUG Newsletter, Hans Hansen is now working freelance. Hans was responsible for continuing to develop the BMUG Newsletter into the high quality publication we all have come to expect and respect. BMUG was extremely fortunate to have such a talented and dedicated worker.

Emeline Mann Sanchez is the new BMUG Publications Manager and Editor-in-Chief of the BMUG Newsletter. Emeline comes to BMUG with a wealth of experience in editing, production, and design which is reflected in this BMUG Newsletter, her first as Editor-in-Chief. As you can see it is packed with articles,

reviews, and a comprehensive listing of Choice Products.

A CD-ROM packed with Shareware, Freeware, and other goodies is also part of your BMUG Newsletter. If you do not have a CD-ROM player please call the office, and we will send you a floppy disk for a nominal fee of \$2.

New BMUG CD-ROMs and Books

BMUG continues to produce the best and most comprehensive collections of Shareware and Freeware available anywhere. Our new two-volume Games ROM collection has 1,000 Megs—more than twice the material on BMUG's previous Games ROM. This collection will keep even the most enthusiastic player busy for months.

Our Spring 1996 PD-ROM is an amazing collection of the newest Publicly Distributable Shareware and Freeware. The New BMUG ResEdit ROM, with lots of resources for the ResEdit fiend, is available either by itself or with the new fourth edition of BMUG's classic guide to learning about the inside of your Mac, *Zen and the Art of Resource Editing: The BMUG Guide to ResEdit*. If you've ever wondered how to create your own icons, desktop patterns, or animated cursors, then this book's for you. ResEdit was originally designed as a programmer's tool, but with a little help from this book you can learn to use it to customize all these things and more. Change the Command keys for your software, rearrange your keyboard, speed up your mouse, edit dialog boxes, or just explore behind the scenes.

BMUG is a Nonprofit Organization

To ensure better membership services and the long-term stability of the organization, BMUG has undergone many internal changes during the last six months as well. Staff has been restructured to more effectively and quickly respond to member concerns. Also, for the first time BMUG has a staff member devoted exclusively to fundraising. Our mission requires that we try to provide services at or below cost, which sometimes results in budget shortfalls. Nonprofit organizations rely on tax-deductible grants and donations to help bridge that gap. As a 501(c)3 nonprofit, donations to BMUG are tax-deductible.

Our Development Director, Colleen Miller, is working on grants and donations to help BMUG and our membership in several crucial ways. First, she is working to help improve our membership services, including the BMUG Helpline. She is also working to raise funds for new programs such as BMUG seminars. Finally, she is raising money to help market our services and products in new ways so as to generate new revenue for our work.

Thanks to Our Members and Volunteers

I want to take this opportunity to thank the hundreds of members and volunteers who keep BMUG going year after year. It is your donations and countless hours of work in the office and online that make BMUG the community that it is. Thanks for being part of BMUG. ☘

Letter from the Chair

Fred Swan

It has become cliché to say that time has passed very quickly, but I have to say it anyway. So many positive things have been happening at BMUG that it seems like just a few weeks ago that I last wrote this column. In fact, it has been six months.

In my last letter to you, I introduced BMUG's new Executive Director, Ann Wrixon. I also mentioned a number of projects that we would be working on and other things that BMUG hoped to achieve. Looking back on the past six months, I'm extremely pleased. We have achieved even more than I hoped, and the quality of our services is increasing steadily.

The Macworld Boston Expo was very successful for BMUG. If you had the opportunity to go the show, you saw that BMUG's booth was very busy, and that our products and presentation solidified our position as the leading Macintosh users group. Another example of this leadership was the BMUG Newsletter CD-ROM. We have received a lot of positive feedback from our members on the disc and have included a new CD-ROM with this Newsletter.

Our online availability is continuing to improve in important ways. Both the Boston BBS and Planet BMUG are now accessible by TCP/IP with your First-Class Client software. This means that our

members all over the world can log in to these BBSes for the cost of a local phone call and Internet provider charges. With this improvement in availability, we have closed down the gatewayed South Bay BBS, in San Jose. Because of the TCP/IP availability, it's no longer necessary. For information on accessing BMUG in this new way, see the article on this topic elsewhere in the Newsletter.

We are introducing new products, including an updated version of the excellent book, *Zen and the Art of Resource Editing*. We also have, in what I believe is a first for BMUG, a two CD-ROM disc product. The BMUG Games ROM must be the most extensive available for the Macintosh anywhere.

Thanks to our talented staff and dedicated volunteers, other services have improved as well. Our monthly South Bay meetings are now held in Town Hall, an excellent room at Apple! It's a location that's hard to beat. BMUG Helpline service is steadily improving, as is the quality and consistency of Planet BMUG. We also have a full-time Development Director to work on improving our fundraising activities. Some of these efforts will be directed at our membership, but much of them will focus on gaining funds from outside donors and agencies.

We are very pleased that so many of you are choosing to renew your memberships at the \$65 rate or better. Your added support is extremely important to us as we solidify our business office and expand our services. It is amazing how fast \$20 donations add up; we cannot tell you enough how much we appreciate them.

Finally, although it's a little past the holiday season, please consider giving a BMUG membership as a gift to a friend or relative. Or just cajole them into joining for themselves. I'm sure there are a lot of people out there who have made it their new year's resolution to learn more about their computer. And for those people who got new Macs in December, few things could be more helpful in getting them up to speed than a BMUG membership, or more fun than a Games ROM to enjoy on those cold winter weekends.

Thank you for being an important part of BMUG. I hope that the benefits you get from your involvement continue to increase as the year progresses, just as I know they will for me. 🦋

Best Regards,

Fred Swan

Chair, BMUG Board of Directors

Features

Media Convergence

by Andy Brooks

We are living in a world of change. Change is taking place in economics, politics, social climate, and technology. Change sometimes happens so quickly that we sometimes don't realize it has occurred until after the event. In order to keep up with this swift river of change, we rely on the mass media to summarize global events and serve us a packaged deal of our world.

When most people think of the mass media, they think of radio and television. Since the early 1900s, broadcast communications have ruled the information superstructure in the United States, and have changed the way we view our world. Today, however, the broadcast medium is in flux, as new technologies emerge to compete with the long-worn and long-loved standards of radio and television. Television cable companies, telephony companies, and new mediums such as the Internet are all now struggling to become the new mass medium of the 21st Century.

Background

We are living in the Age of Information. To simplify matters, the Age of Information can be broken down into three distinct time periods where particular technologies transformed the way we communicate with one another.

1840–1900: "Wired"

Between 1840 and 1900 the telegraph and the telephone revolutionized communication. Although neither was technically a form of "mass" communication, they both broke down the borders of distance and geographic isolation. During this time, people were truly "wired" together as news and information zipped

merrily along on raised telegraph cables from city to city and from town to town. The telephone took the telegraph a step further, by allowing transmission of the human voice instead of mere Morse code.

1901–1970: "Wireless"

From the early 1900s to the late 1960s, everything went "wireless." Out of the constraints of the telegraph cable came radio. Radio originally was used as a point-to-point medium for sailing vessels. Eventually someone discovered that not only was radio useful to talk to a single person, but it could also be used to talk to hundreds, or even thousands of people at once. Electronic mass communication was born with the first radio broadcast in Pittsburg, Pennsylvania, in 1920. The 1920s marked the high point in radio's history. Radio plays, serials, news broadcasts, and variety shows crowded the airwaves, and every American had an ear glued to their radio.

When television came along in the 1930s, it, like its younger brother, radio, swept the nation. Now, not only could you hear the actors speaking—you could also see them. The 1950s was the decade of television, when family-oriented programs such as *Leave It To Beaver* and *My Three Sons* were the popular choice. In the late 1950s, NBC was the first network to broadcast its entire prime-time schedule in color, and the acceptance and standard of color television were born.

1971–Present: "Interconnected Networks"

Broadcast wireless communications ruled until the 1970s, when something called "cable" hit the market like a storm. Cable's original purpose was to get clear

Internet's humble beginnings started with ARPANet, an interconnected network of computers designed to withstand the shattering impact a nuclear assault would have on communications.

reception to households located in "Fringe Areas"—areas on the farthest reaches of a transmitting tower, or in hilly areas where reception was spotty and very poor. The third age of information, the one we currently live in, is best described as the Age of Interconnected Networks. In 1994, 64 percent of American households subscribed to cable television, and 96 percent of American homes had cable running past their doors.

The second-largest example of the third age is the Internet. Its humble beginnings started with ARPANet, an interconnected network of computers designed to redundancy to withstand the shattering impact a nuclear assault would have on communications. Now it is the fastest growing form of communication the world has ever seen. With the advent of the World Wide Web, it is growing even faster.

Convergence

MacTV

The future is fast upon us, and the convergence of media is well on its way. Advances in technology, thrust of industry, and political maneuvering are all working together to bring communication convergence to a peak. The FCC (Federal Communication Commission) has implemented a 15-year plan to change the television industry on a fundamental level.

Today all televisions in the U.S. are NTSC (National Television Systems Committee) compliant. The NTSC set a video standard before World War II that is essentially the same today. Television screens are still 525 lines of resolution and have a 2:3 aspect ratio. With the advent of HDTV (High-Definition Television), the standard that is now 50-plus years old will be greatly improved. HDTV promises over a thousand lines resolution, and a 16:9 aspect ratio, all in digital video and sound. Not only will the picture look better and the sound feel more real, but the size and shape of the screen will more closely match the size and shape of motion picture film.

This superior standard comes with a cost though, and it will be expensive. Not only will early adopters of HDTV pay more than three thousand dollars per set when the units first hit the consumer market, but television stations will also have to pay. HDTV is completely incompatible with the old NTSC standard. Every piece of equipment in every television station in the country that passes an NTSC signal will have to be replaced with HDTV equipment. At the beginning of 1997, the FCC will implement its ambitious conversion from NTSC to HDTV, and by 2012, NTSC will effectively be shut off.

HDTV is spoken of at length because it is an example of "forced convergence." The FCC is now forcing broadcasters to

With NTSC, small text is difficult or impossible to read. With HDTV, small text will appear as clear or clearer than text on a computer monitor. This is the convergence of television and the computer.

do something that should have been done fifty years ago, when television was still in its infancy. In 1946, the FCC predicted technology in television that would allow 1000+ lines of resolution, and promised that technology a few years later. That promise was never fulfilled, and NTSC took a firm grip in the television industry and the American home. The new digital HDTV standard is much like a computer screen. Not only is the signal digital in nature, but it also utilizes non-interlaced scanning (NTSC scans odd lines first, then even lines, called "interlaced scanning") and is of incredibly high resolution. With NTSC, small text is difficult or impossible to read. With HDTV, small text will appear as clear or clearer than text on a computer monitor. This is the convergence of television and the computer.

Apple had the right idea when it produced the Macintosh TV and incorporated television tuners into many of its Performa Macs. Unfortunately, Apple jumped ahead of itself and general technology. The Macintosh TV bombed on the market, and people don't buy Performas so they can watch the news. The market is not ready for a computer and television in one. Eventually, though, your television will rest inside the computer and your computer will rest inside the television.

GeoPort

As you read this, cable companies and telephone companies are in fierce competition with one another to provide the others' service. As you read this, TCI Cable is already constructing the infrastructure to make their coaxial television cable network two-way. As you read this, Pacific Bell is laying millions of miles of fiber-optic cable from Eureka to San Diego to carry video signal to your telephone jack. None of this is fantasy. It is all happening, right now.

"Video dialtone" has been a dream to many telephone companies. Visionaries knew a long time ago the power of the telephone network. This network is inherently two-way. It is a global connection system. It has the capacity for a large bandwidth, and with fiber-optic cable trunk lines, it is very, very, very fast. So fast and so large, in fact, that telephone companies are very close to piping interactive cable television right into your living room through your telephone jack.

Cable systems, on the other hand, are taking a different approach. Although coaxial cable is inherently faster than telephone cable, and it can carry more information at any given moment than telephone cable, it is only one-way. To make it two-way would cost the cable industry billions upon billions of dollars, and although some companies are looking into this option, others are looking toward the sky and Direct Broadcast Satellite (DBS).

DBS and MMDS (Multi-Point, Multi-Channel Distribution Service) are far more cost-effective than conventional cable systems because they don't require physical cables to be strung on telephone poles or buried underground. Both of these systems limit two-way communication, but using conventional hardwired techniques, MMDS and DBS will provide interactivity in the near future.

What does all this have to do with the Macintosh? By the year 2020, remember, the standard NTSC television signal will be completely replaced by the HDTV signal, which is pretty much the same thing as an RGB monitor (The monitor you look at when you type away at your computer). Instead of having separate telecommunications channels and commercial and public broadcast channels, we can expect to have these forms of communication transferred through the same

route of information. Out of Apple's famous R&D Department came the GeoPort, now standard on all Power Macs. With the advent of the GeoPort, high-speed network access is just a connection away. All you need is the right translator, whether it be a modem, an ISDN terminal, or perhaps in the future an HDTV interactive server system.

The Macintosh seemed to be a perfect bedfellow with the graphical World Wide Web. Not only is the Mac easy to use, easy to configure, and easy to put up with, but it was also one of the first computers that CERN developed Mosaic, the first WWW browser. The Macintosh finally had a definitive edge in telecommunications over Windows-based machines.

Unfortunately, Apple is not going to see users putting the GeoPort to good use anytime soon. Everything that we have been discussing so far is probably no closer than ten to fifteen years away. Even though Apple has one eye on the future, it still needs to keep the other one on the present. If it doesn't, we might not have the Macintosh to enjoy in fifteen years.

Mac World Wide Web, the Internet, and Beyond

The World Wide Web (WWW) is by far the most exciting prospect that the Internet has come to offer the general public. Up until the beginning of the 1990s, the Internet was, for the most part, a jumble of ambiguous UNIX commands and text strings that left the bulk of personal users in the dark. With the advent of the WWW, everyone went graphical, and navigation on the Internet became as easy as turning a page in a magazine.

Advertisers, cable companies, and telephone companies are very interested in this new telecommunications technology. Pacific Bell has only recently mustered a tremendous campaign to provide Internet services and ISDN connections to personal users, all because of the WWW and the tremendous capital draw it possesses. Many cable networks and television stations have dropped their sponsorship with commercial services like AOL and CompuServe, and have gone directly online via the WWW. Even though these commercial services are beefing up ad campaigns and serviceability to the commercial and personal user, they are slowly losing ground to the cheaper, faster, more accessible World Wide Web.

The Macintosh seemed to be a perfect bedfellow with the graphical World Wide Web. Not only is the Mac easy to use, easy to configure, and easy to put up with, but it was also one of the first computers that CERN developed Mosaic, the first WWW browser. The Macintosh finally had a definitive edge in telecommunications over Windows-based machines. Yet again Apple was looking far ahead instead of placing its feet firmly in the present. Not a peep came from Apple's advertising department about Mosaic and its ease of use compared to other browsers at that time. It went un-noticed. Now browsers are common on all platforms and are as easy

to use on each. The Macintosh no longer has this edge, and may never regain it.

The final edge that Macintosh has over its competitors is its ease of setup to get on the "Information Superhighway." Anyone who has configured a PC for a dialup PPP or SLIP account using Windows 3.1 knows what a nightmare and headache it is. Not to say that the Mac is better at these sorts of communications, but the user probably won't be tearing his hair out setting up the Mac. Hopefully Apple will realize this potential, and will emphasize it in its advertising. Hopefully the people at Apple who have come up with the GeoPort and on-board Ethernet connectivity will somehow connect with the people who just don't get that people out in the real world don't want a stand-alone machine anymore, and perhaps something will come of it.

We will just have to wait and see.

Conclusion

The world of separate mediums of communication, from interpersonal to broadcast, is slowly changing. Media that once considered themselves proprietary to a specific task are now realizing the potential of other markets. Convergence of these mediums is not just a hypothetical theory; it is a reality that has been ongoing for some time now.

Cross-platform connectivity is a key element in the evolution of media convergence. Those that do not commit themselves to a global standard will eventually succumb to the others that do, and those that hold their technology proprietary will either need to convert themselves to a niche market and abandon the private sector or be thrown out by competitors with better interfaces.

In one hundred years, people will look back on the latter half of the twentieth century and wonder why we didn't see that the telephone, television, and computer were really all the same thing. They will wonder why society took so long to realize that global communication was not just a whim entertained by idealists but a necessity in an increasingly shrinking world. In a hundred years, hopefully, they will wonder what Microsoft was, and what all the hoopla was about. ☞

Andy Brooks freelances HTML design, hides under his bed during lightning storms, and can be reached at aceebro@netcom.com for comment.

Adobe PageMill 1.0

HTML for The Rest of Us

by Bob Rosas

The World Wide Web has blown the Internet wide open. While not an application, the Web may be viewed as the “killer app” of the Net. Suddenly everyone and their family wants to get on the Net in general, and the Web in particular. Images, sound files, film clips, and full color graphics go to creating the allure of the Web.

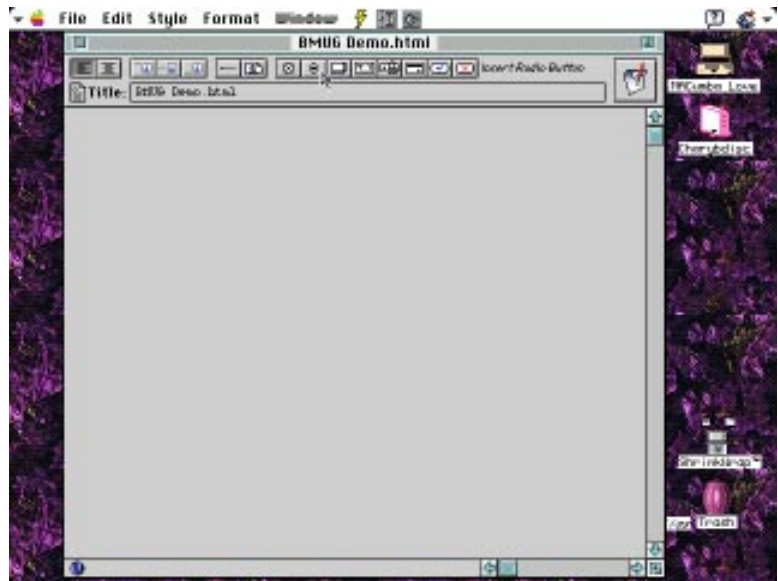
It's also relatively easy to establish your own presence on the Web in the form of a Web page, which can be filled with any and all kinds of information you want, and can be connected to other Web sites around the globe through the use of hypertext links embedded in your page.

One little hurdle. To build your page you have to know HyperText Markup Language (HTML), a tagging language which, for those of us who remember what word processing was like in a (gasp) DOS-based environment, isn't all that steep of a learning curve.

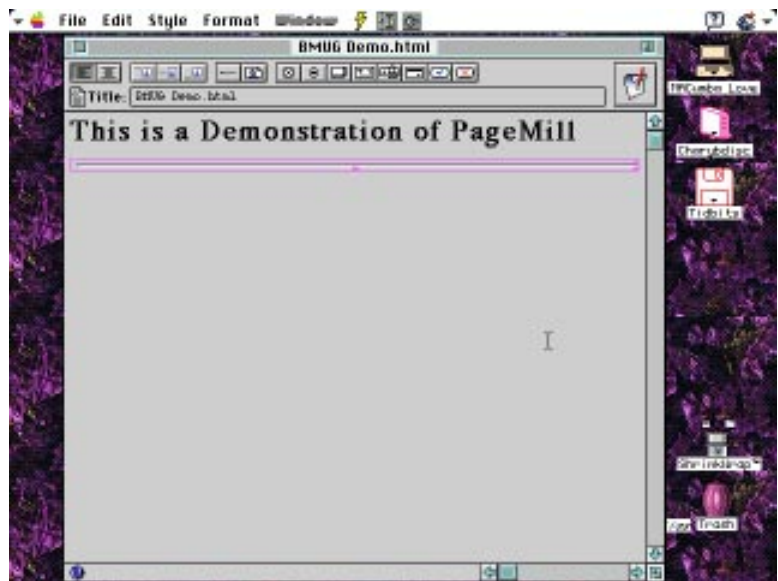
But, hey, we're Mac users. We're not about to sit at a keyboard typing in arcane commands if we can click and point, drag and drop our way to achieving the same results.

Enter PageMill by Adobe. This changes everything. With PageMill you never have to learn a single HTML tag; you don't have to worry about what format your graphics are in—everything is handled in the background; all you need be concerned with is how you want your page to look and where you want your links to appear.

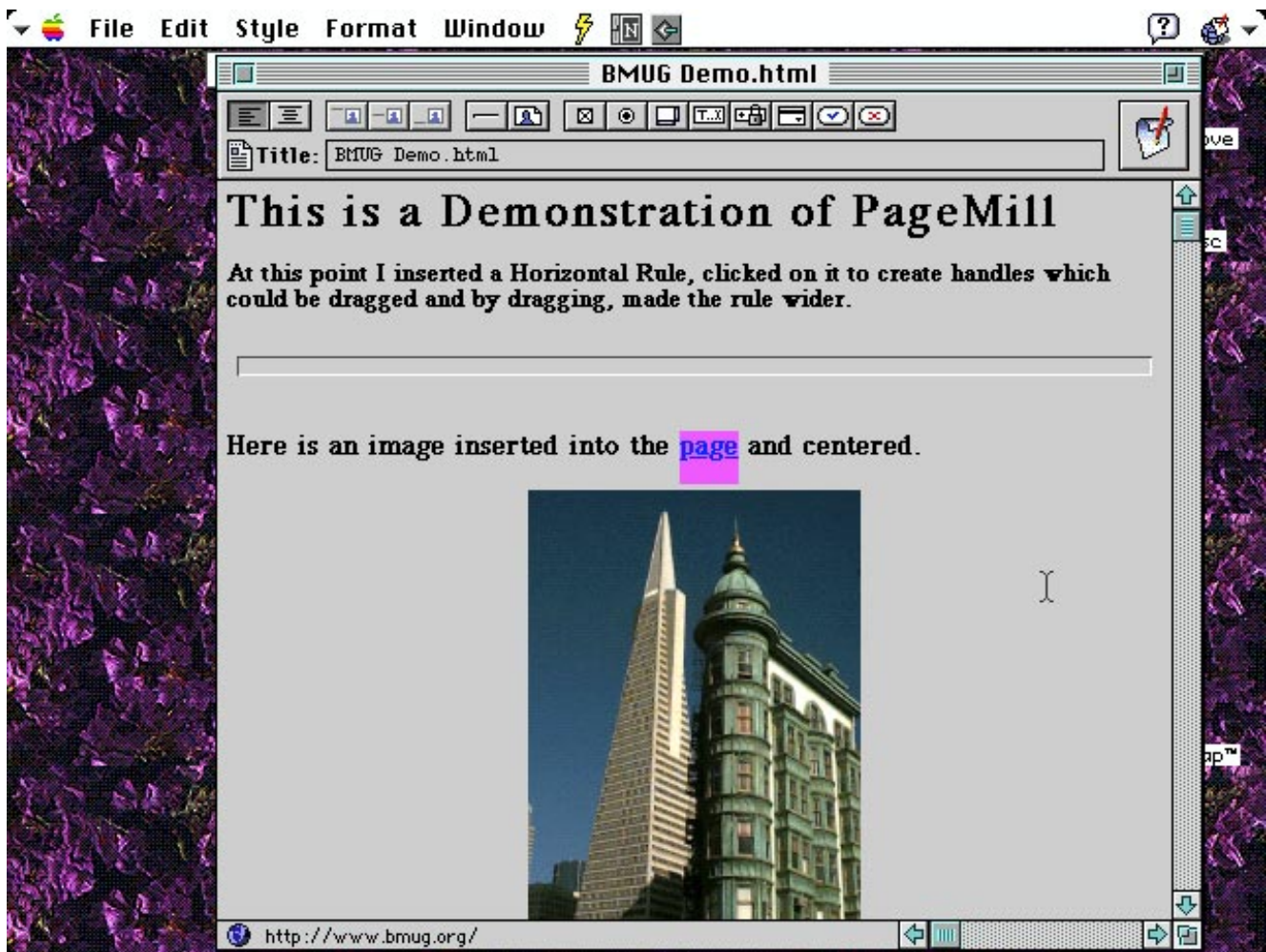
How easy is it to create a Web page in PageMill? You be the judge. Out of the box, within twenty minutes I had created two Web pages with graphics, text, and interrelated links and anchors. The manual, which is very complete in



This is the basic PageMill Page View window—shown in Edit Mode—in which you create text, add and manipulate images, and set up links, check boxes, radio buttons, and online forms. Note as the cursor passes over a control button a brief description of the button's function appears in the upper left of the window.



The Page View, in Edit Mode, with a large heading and a horizontal rule added. The horizontal rule is shown in its default setting, but double clicking on it creates handles which allow you to resize the rule as you wish. This method of sizing is also applicable to graphic objects.



Page View with the horizontal rule widened, a graphic inserted (sized and centered), and a link added to the word *page*. Notice the URL at the bottom of the page showing the link connected to the word *page*.

covering how to use the application, is a mere 51 pages, not counting appendices. The book I had been using to get up to speed in HTML, and which promised I would become proficient in a week, is nearly 400 pages not counting the appendix.

So how does it work? "Very well," is the glib answer, but I suspect you want a little more information than that.

The PageMill interface is a window which looks remarkably like a Web browser; those of you familiar with Netscape will feel right at home. Across the top of this window, called the Page View, are 15 icon buttons. These buttons control such functionality as text and image alignment, insertion of images, horizontal rules, check boxes, radio buttons, definition of text areas, fields for passwords, popup menus, etc.

The right upper corner of the page features a toggle button which switches between Edit and Preview modes. Edit mode is used when building the elements, links, and layout, while Preview lets the user see how the page would look when viewed through a Web browser. One very nice touch—and there are several, especially considering that this is the first release of the application—is that as you pass your cursor over the buttons a brief description of the button's function is displayed, like balloon help.

Immediately below the control buttons is a small icon called the Page icon. Once you have saved your newly-opened page, this icon can be dragged to the selection on another page and used to link the pages together.

Next to the Page icon a title field displays the name that will show at the top of

the page. Below that is a substantial area of screen real estate where the content is built, laid in, manipulated, and linked.

The bottom of the window displays a URL (Uniform Resource Locator) icon and presents an area where a URL may be input to create a link between the page being built and another site on the Web. PageMill provides several drop-dead-simple methods for creating links within the page being built; highlighting a piece of text, typing in the URL to be linked to that text and hitting the Enter key is the most complicated method provided—which gives you an idea of just how easy this thing is to use.

Ease of Use is the Hallmark of PageMill

Handling graphics is equally simple. If someone is familiar with almost any

drawing program he/she already has the basics of manipulating an image in PageMill. An image can be dragged or copied and pasted into the Page View. Clicking on the image in Page View creates handles which allow for easy resizing. There is also a Paste Board feature, a floating palette into which images from the Page View may be Option-dragged for later use.

PageMill contains an Attributes Inspector floating palette which allows for some very detailed manipulation of images, objects, and text within the page. Background colors and textures are also supported.

The building of forms—one per page—is also supported, but a CGI (Common Gateway Interface) script is still needed on the server to handle the data someone submits on the form.

If you already have your content organized and have a pretty good idea of how you want your page to look, PageMill will help you create your Web site in probably a quarter of the time it would take if you had to write it out in HTML.

So, is it perfect? Nope. The first and most glaring shortfall of PageMill is that it does not support HTML 3.0 tags. Neither does it support Virtual Reality Markup Language (VRML). But this is version 1.0 of the application and it is reasonable to expect HTML 3.0 support in a forthcoming upgrade.

Nevertheless, PageMill substantially lowers the bar in terms of the technical knowledge needed to create and maintain a Web site. A lot of people who would not have considered publishing a page on the Web may well rethink that position with the introduction of this suite of tools. ✈

Bob Rosas is a Volunteer Helpline Coordinator who has been struggling for six months to create a Web site. Now maybe he'll make some progress.

Quirks in PageMill 1.0

by Raines Cohen

The day that PageMill was released, I wanted it. I needed it. I got permission from my boss to buy it. I visited Adobe's Web page, called the 800 number, got faxed back a special URL and serial number, and downloaded and installed it. The procedure is somewhat awkward. While I can understand the need for security with credit cards, having to deal with three different forms of communication to buy something seemed a little odd. Of course, if I were a little more patient I could have just ordered from any mail-order house, but that wouldn't have been as cool.

Unfortunately, it is very definitely a 1.0 release. The installer requires lots and lots of space on your hard drive, and it sticks in your System Folder, files that you don't necessarily need, like Macintosh Drag & Drop on System 7.5.1, which caused crashes on some recent PCI Power Macs.

To read the documentation as I did—in PDF form—you need to download and install Adobe Acrobat Reader, which takes up several more megs of disk space.

When you go to open an HTML file, it tries to interpret all the HTML. If it doesn't understand it, it shows the HTML code in bright red on your page, with no way to hide it. Some popular techniques used by HTML authors (like embedding a list item within a link so the bullet is linked as well as the text) confuse PageMill, and so it loses the links. Other tags are made more generic.

If you have a server volume with the same name as your hard disk, PageMill won't be able to open files on it, and the error message it dis-

plays when you try, is far from clear.

Creating links between pages is awkward, requiring that you first select the text to be linked, then make the destination window's page icon, or an anchor within it, visible, and then drag it across. Some quirks in the way scrolling works makes this a little uncomfortable and tedious.

In some cases when you create links, the references are "absolute" (to specific locations on your hard drive) rather than "relative" (referring to each other). This makes them not work properly on the server, although they may appear to work on your local drive.

If you save a file with a new name, references within the second document suddenly point to the first document!

And, as Bob mentions, it doesn't support all HTML commands, so you can't easily do tables, although it is great at making forms and working with graphics, automatically converting them to GIF format and putting them in a folder you designate.

Make no mistake—the program is great, it allows people to create and edit Web pages without learning HTML. But if you have a lot of existing HTML pages you'll need to watch carefully to see what it does to them, examining the HTML code and cleaning it up afterwards.

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is Online Communications
Manager for User Group
Connection.*

Power Macintosh and PCI

Putting the *Real Power* in Power Macintosh

by Eric Herzog

Introduction

1995 will be remembered as the “Year of Confusion” for Macintosh users, resellers, and even industry insiders. With the recent introduction of Apple’s Power Macintosh with PCI family (not to mention the dawning of the Mac OS compatibles—both PCI and NuBus), the Macintosh market offers such a wide array of choices that making sure your purchase delivers real value requires significant contemplation and research.

One of the areas most affected by the adoption of PCI for Power Macintosh is storage. On the Power Macintosh, the most commonly used hardware peripherals are those for mass storage. In most instances, storage is also the most costly hardware component in a Power Macintosh solution, especially in high-end systems. In those high-end markets where Apple has the leading position—digital video, color publishing, digital pre-press, and multimedia—the requirements for mass storage in performance, capacity, and cost are dramatically influenced by the implementation of PCI on the Power Macintosh.

While all the new Power Macintosh with PCI machines—the 7200, 7500, 8500, and 9500—include an on-board SCSI interface, Apple’s SCSI interface yields very low performance for the Macintosh’s high-end markets. As with the NuBus machines of the past, vendors will provide high performance Fast and Wide SCSI-2 cards and disk arrays to meet the needs of those users in digital video, color publishing, digital pre-press, multimedia, and networking. These products allow users to realize the full potential of their solutions—something Apple’s on-board SCSI interface prohibits. And, in the near future, higher performing stor-

SledgeHammer 7000FMF II

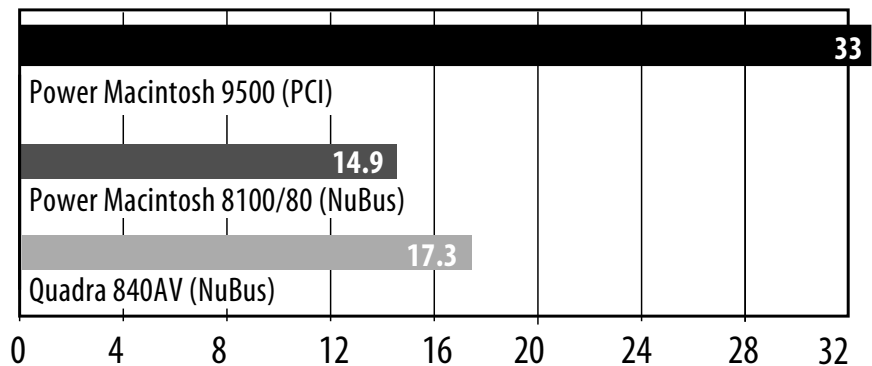


Chart 1. SledgeHammer 7000 Performance on PCI and NuBus

age interfaces such as Fast20 (also known as Ultra SCSI), Fibre Channel, and SSA will offer sustained data transfer rates up to 100 megs per second—more than 10 times the performance of Apple’s built-in SCSI interface.

It is only with PCI on the Power Macintosh and the performance gain which PCI provides that users will be able to realize the benefits of the upcoming technologies for storage and to fully maximize those of the current high performance SCSI interface, Fast and Wide SCSI-2. A quick example of this is the performance of FWB’s SledgeHammer 7000 Fast and Wide SCSI-2 RAID solution on the Power Macintosh 9500 (PCI) and on the Power Macintosh 8100 (NuBus). This array on the Power Macintosh 9500 attains sustained data transfer rates of 33 megs per second, while on the Power Macintosh 8100 this same array reaches speeds of only 15 megs per second.

To help users sort out the impact of PCI on mass storage, this article will examine the following areas:

- What is PCI and why did Apple adopt it?
- What is the impact of this industry standard on Power Macintosh, and how will you benefit?
- What are the implications for performance on the Power Macintosh platform?
- What are the issues of compatibility for hardware and software?
- How will the entrance of many “PC” companies affect you?

This article assumes that you are a reasonably knowledgeable user of the Macintosh or Power Macintosh platform. It is assumed that the superiority of the Macintosh in high-end markets is a given, but that you need to explore PCI and what it offers.

What is PCI?

PCI is the acronym used for Peripheral Component Interconnect. The PCI bus is a system standard that defines a high-performance interconnection method between plug-in expansion cards, integrated I/O controller chips,

and a computer's main processing and memory systems. The second generation of Power Macintosh computers, containing PowerPC microprocessors, uses PCI buses to communicate both with internal I/O chips and with plug-in expansion cards. Both 601- and 604-based Power Macintosh systems utilize the PCI bus architecture.

Originally designed by Intel in the early 1990s as an alternative to other proposed peripheral expansion buses, PCI is now governed by a consortium of industry partners known as the PCI Special Interest Group (SIG). This body of computer systems' manufacturers (Apple is a voting member of the PCI SIG), peripheral vendors, component suppliers, and software companies functions to ensure compatibility and inter-operability across the PCI standard and to continue to refine the specification to increase the throughput of PCI even further.

The first release of the specification—the PCI Local Bus Specification—became available in June of 1992, with a second release of the specification published in April of 1993. Apple, like the majority of vendors on the Intel PC platform, has chosen to base its Power Macintosh with PCI family on Version 2.0 of the PCI specification. The entire Power Macintosh with PCI family—the 7200, 7500, 8500, and 9500—fully conforms to this industry standard.

Why PCI?

Apple has selected PCI to replace its aging NuBus architecture for four key reasons. First, Apple wants to offer a widely-adopted industry standard so that it can market its computers in a way which promotes commonality with other platforms, yet allows Apple to market the differentiated benefits of the Macintosh experience. Second, since it is an industry standard, Apple hopes to attract a more widely varied pool of cards for various solutions. Third, Apple hopes that, as more developers in the PCI market offer their products for the Power Macintosh with PCI family, the cost of these products will be lower than comparable cards on the NuBus platform. Fourth, the addition of PCI to the Power Macintosh gives the platform a tremendous boost in performance over the NuBus. This will

eventually open up additional markets to Apple for applications that need the added performance which PCI can deliver.



In the past, Apple has used the NuBus for both Macintosh and Power Macintosh machines as its expansion bus. With the advent of the Power Macintosh with PCI, Apple is moving from a semi-proprietary expansion bus (the NuBus) to one with much greater industry acceptance. In addition, the PCI bus provides an industry standard upon which Apple can fit in with the rest of the world, yet, with its unmatched application richness, differentiate itself from lower performing Intel Pentiums with PCI running Windows 3.1 or Windows 95.

The Features and Benefits of PCI

PCI represents a needed standard in the computer industry. Because the PCI bus uses the same architecture and protocols to communicate with I/O chips and with expansion cards, it reduces the cost and complexity of computer hardware. It allows Apple, and other systems' manufacturers, to provide high-speed expandability at minimum cost.

The key features of Apple's PCI implementation are:

- 32-bit bus bandwidth with a compatible 64-bit and/or 66 MHz upgrade path
- Electrical signals of 5 volts
- Bus clock rate of 33 MHz—compared to only 10 MHz for Apple's fastest NuBus
- Up to 132 megs per second transfer rate over the 32-bit bus
- Full PCI bus master and slave support
- Either 6.875" (known as Short Card form factor) or 12.283" (known as Standard Card form factor) card sizes
- Supports Open Boot Specification (IEEE1275-1994)
- PCI Local Bus Specification, Revision 2.0
- Operates independently of any particular microprocessor design
- ISA-style mechanical bracket
- Edge card connection into the motherboard

- Recommended use of plug-in card expansion ROM—allowing true Macintosh plug-and-play

One feature that needs further explanation is Open Boot (also known as Open Firmware). This term is one that you will hear constantly in reference to Apple's PCI implementation. During the Open Firmware process, startup firmware in the Power Macintosh's ROM searches the PCI buses and generates a data structure that lists all available peripheral devices. This data structure also stores the support software, such as FWB's Hard Disk ToolKit device driver, provided by each PCI expansion card. The startup firmware then finds an operating system (Mac OS System 7.5.2 on the Power Macintosh with PCI) in ROM or on a mass storage device, loads it, and starts it running. The operating system does not need to be Mac OS, though, with the Power Macintosh, it is today. Hence, it is possible for PCI-compatible Power Macintosh computers to operate PCI peripheral devices using either Macintosh or third-party system software. In short, there can be Mac OS compatibles with PCI bus, such as Radius and Power Computing have made with NuBus.

Any operating system that is compatible with the PowerPC chip used in the Power Macintosh will be compatible with the Power Macintosh with PCI.

Open Boot provides Apple's PCI bus with auto-configuration of devices on startup, flexibility in system software, and the advantage of wide industry acceptance. Open Boot also increases the flexibility of PCI on PCs using Intel chips by not requiring the use of the system BIOS. This differs from previous expansion buses used in the Intel world—ISA, EISA, MCA, and VL Local Bus—where BIOS code is necessary to successfully utilize cards in the bus. Obviously, this offers no advantage to the already easy-to-use architecture of the Power Macintosh, and it does not eliminate the card from needing a Power-Macintosh-specific device driver to be fully functional.

The establishment of the PCI bus standard has real benefits for the Power Macintosh and users at large. These benefits, as summarized in Table 3, allow for incredible performance gains over NuBus, additional ease-of-use, future expansion, and overall lower costs that make

the Power Macintosh with PCI platform *the* solution for the nineties.

Performance, Performance, Performance

The performance gain PCI offers users on all Power Macintosh with PCI platforms is the most significant advantage over NuBus-based machines and PCI machines running Windows or Windows 95. Coupled with the power of the PowerPC 604 chip (currently used in the Power Macintosh 9500 and 8500), increased native system software and 604-optimized application packages, PCI delivers performance that will make any NuBus Power Macintosh or Pentium owner green with envy. As mentioned earlier, mass storage is one of the key beneficiaries of the increased bandwidth and throughput of PCI.

With new, higher-performing storage architectures coming later in 1995 and throughout 1996, the increased power they offer will only be realized on Power Macintosh with PCI. NuBus machines cannot match the performance of these interfaces in any way, as NuBus does not even realize the potential speed of Fast and Wide SCSI-2.

While artificial benchmarks are all well and good, Macintosh users want to know, “what can this really do for me,” and “how will this increase my real productivity?” Results for real-world applications, such as Photoshop® impressively demonstrate that performance is not just in artificial benchmarks.

As Chart 2 clearly shows, the performance gain of PCI extends to real-world applications for real-world uses. While this example focuses on color publishing, the benefit of PCI on the Power Macintosh extends to any application and/or hardware peripheral that involves significant PCI bus activity. For example, digital video card vendors were limited by the throughput of NuBus to video compression of 4:1. But, with PCI these same vendors believe they can deliver 2:1 compression for sure, and, perhaps, uncompressed video—which is virtually impossible on NuBus. Similar performance enhancements will be seen by users of multimedia, pre-press, and network applications. Overall, the Power Macintosh with PCI family sets new standards for price/performance value in the desktop computer arena.

Issues of Compatibility for Hardware and Software on PCI

While PCI is an industry standard, Power Macintosh users should not be lulled into the belief that all products designed to work on PCI for the Intel platform will work in the Power Macintosh. PCI compliance is the first step to successful integration of a third-party card with Power Macintosh.

For example, a card that is fully PCI compliant but does not support Open Boot may work fine on a Pentium with PCI, but will not work on a Power Macintosh. In addition, even if a card fully

supports Open Boot, the card still requires a Macintosh driver. In the case of storage, a PCI card must have a Macintosh device driver, such as FWB’s Hard Disk ToolKit or RAID ToolKit, in order to operate properly for mass storage applications. Additionally, that device driver must also be SCSI Manager 4.3 compliant—the SCSI Manager is that part of Apple system software which controls the interaction of SCSI peripherals and the Mac OS.

In order to let customers know which products meet the minimum level of Power Macintosh with PCI compatibility, Apple has instituted a compatibility program. This program does *not* guarantee you the fastest, best engineered, or most suitable product for your application, but it does give you an indication that the product will work in the Power Macintosh with PCI family. Apple requires vendors who participate in the program to submit cards to Apple for compatibility testing. If the cards are deemed compatible (and remember this only indicates compatibility, Apple does *not* check for optimal performance, good Macintosh technical support, or synergy with Macintosh applications), the vendor is allowed to use the “Designed for Macintosh with PCI” logo in their marketing materials and advertising. As a consumer, this logo will be valuable for you as a signal that the product you are interested in meets the minimum level of Power Macintosh with PCI compatibility and is worth considering.

SledgeHammer 7000FMF II

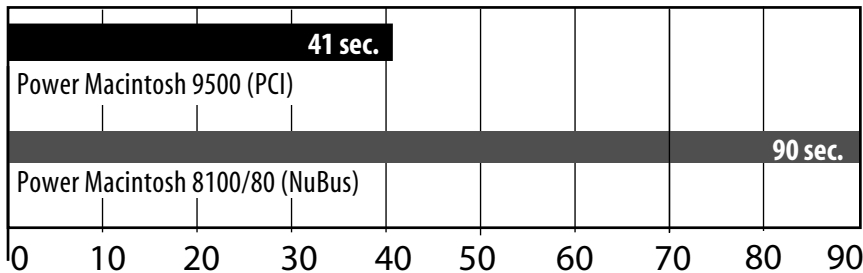


Chart 2. This chart shows the time in seconds of opening a 100-meg TIFF file. The time for the PM 9500 of the 7000 is 41 seconds, on the PM 8100 the time is 1 minute 30 seconds.

Legend “All testing done with the latest system software and Photoshop 3.04; 32 megs of RAM allocated to Photoshop; primary and secondary scratch disk preferences in Photoshop set to disk array; and Photoshop and TIFF file launched from disk array. Shorter bars indicate better performance.”



Another issue for users of NuBus cards is the new method of installation for PCI cards. In the NuBus era a compression connector on the bottom edge of the NuBus card tightly mated to another connector on the motherboard. For Power Macintosh with PCI, this type of installation scheme has been replaced with the use of edge connectors on the card that install into a slot on the motherboard. Though the PCI industry standard, this makes it easier for cards to be improperly installed in the slot on the

motherboard. To address this problem, the Power Macintosh plastics keeps a card in its slot by firmly locking the ISA-style fence into the machines backplane plastic. In addition, all the current Power Macs with PCI have an additional locking mechanism that gently secures the cards from the top. These innovations are lacking on almost all PC implementations of PCI.

“PC” Companies and Power Macintosh with PCI

The entrance of many PC companies into the Macintosh market through PCI will create additional confusion for users already wary of the many choices available. These companies are unproven entities on the Macintosh platform, though several have established leadership positions on Intel platforms. Some of these companies are serious about Macintosh and want to offer excellent products. Others clearly see the advent of Power Macintosh with PCI as a means to attack a market solely because it has the same expansion bus interface and have no idea what Macintosh users expect or want in their products. Only time will tell which PC companies can successfully deliver *real* Macintosh products on the Power Macintosh with PCI platform.

Probably, the most important question you need to ask yourself is, “What do I expect from a company whose prod-

ucts are to be used in my Power Macintosh with PCI?” Once this is answered, you will be able to determine if a PC company can meet your expectations. For instance, what users expect to see in any Macintosh product manual is often only included in the *best* manuals on the PC side. Technical support will clearly be an issue, as the much higher expectations of Macintosh users of technical support have been widely documented.

The key questions users of PCI will need to ask about PC companies selling Power Macintosh PCI solutions are

- What quality of technical support will I receive?
- What is the true level of Macintosh compliance I will receive?
- What help will I get in the integration of their PCI solution with my Macintosh applications and the Mac OS?
- How well have they engineered their products to work cooperatively with other Macintosh PCI cards and software products?

In summary, many PC companies will be entering the Macintosh market because of PCI. What remains to be seen is whether they can meet the higher expectations that Macintosh users have with issues of tech support, documentation, integration, OS compliance, and synergy with complementary hardware and software. Some of the PC companies will

“learn” the Macintosh way and offer customers robust, quality PCI solutions, while others will just “throw” their current PC products at the Macintosh. You, the consumer, need to be just as aware and selective as you have been in the NuBus era and not be swayed by wild claims of incredible performance at amazingly low prices.

Power Macintosh and PCI—Putting the *Real* Power in Power Macintosh

PCI for Power Macintosh brings to the Macintosh platform the *real* power needed for today’s demanding applications. Coupled with the next generation of PowerPC chips and system software, PCI provides users—especially in digital video, color publishing, multimedia, networking, and digital pre-press—the performance they demand to continue to push the envelope.

There are many questions surrounding PCI and the changes it brings to the Macintosh marketplace, but it is hoped that this article has helped you in your search for answers to these questions. ✈

Eric Herzog has just joined Automatic Software as vice president of marketing. Prior to that he had been in the Macintosh and microcomputer storage market since 1985, most recently serving as vice president of marketing for FWB, Inc.

The 8500 and QuickTime

Some Comments on the New AV Power Mac

by Dennis R. Dimick

It may be possible to write about a new Macintosh and have the machine still available for sale by the time this Newsletter publishes. It hasn't necessarily been so with Apple computer models the past few years.

In the case of the Power Mac 8500, you should be able to get one by the time you read this. Of the PCI Power Mac models introduced last August, this one has garnered a lot of buyer attention—but not much available supply. At least not here in early November.

The 8500 should still be selling in January, perhaps with a faster PowerPC 604 processor chip. The cool thing about the 8500 is early adopters can upgrade just by replacing the 120 MHz 604 processor chip via a small card. No logic board upgrade needed.

Some Context

Here's what I've found in about two months use with an 8500, the most capable of AV Macs introduced to date. Some of my comments may appear technical in nature, but I'm writing for people who have used and know QuickTime, have the 8500, or are planning to move to it or a similar machine (like the 7500) for AV use. (The 8500 can print to video, while the 7500 has no digital video outputs.)

Compared to my Mac IIci with its SuperMac Spigot II Tape board, NuMedia DSP sound board, Radius Pro 8.24xp video card, and DayStar Turbo 040 board, the 8500 is the model of stability. The 8500 arrived just in time; I spent more time keeping the IIci running than doing anything creative. But for the record, the IIci is a great Mac, long lived, and mine now works on far less strenuous tasks than QuickTime.

RAM and VRAM

The stock 16 megs of RAM on an 8500 is barely enough to write memos, but why did you get this Mac in the first place? Absolute minimum is 32 megs. Even with that, I can get out of memory errors when allocating more than 16 megs to Photoshop. Get a fast hard drive for Photoshop scratch space and video grabs, in lieu of many megs of RAM. That is, unless you're into huge Photoshop files. Then, lots of RAM and a high speed disk array is your ticket.

If you plan to capture digital video and looking to print to NTSC video on a TV or VCR, upgrade to 4 megs of VRAM. It's the only way you can see both your RGB monitor and the NTSC monitor at the same time. With two megs of VRAM, your RGB monitor will black out when you print QuickTime movies to the attached NTSC (TV) monitor.

Hard Drives and the 8500

If you expect to do video captures with the 8500, keep your expectations in check. The PowerPC 604 processor gives you all the horsepower you need. The issue of adequate disk storage space and the ability to write to disk 30 frames per second 320x240 video captures is not a forgone conclusion with out-of-the-box 8500s. You're fooling yourself if you think stock 8500s can do this.

PCI SCSI Accelerators

For serious video work, the first thing is to get one of the inexpensive (compared to NuBus versions) PCI SCSI accelerator cards. The FWB Hammer SCSI accelerator board goes for less than \$400 as of this writing. You will not regret the investment. Other cards from ATTO and the like, are available.

Look to External Drives

Even if you're not doing big Photoshop files, a PCI SCSI accelerator hooked to an external Fast SCSI-2 drive or Wide SCSI-3 drive can make life much easier, especially with QuickTime. If you're looking to create good-looking QuickTime captures, don't count on the internal 2 gig Seagate Hawk or the 1 gig Conner internal to do the job. Thirty frames-per-second video captures are meant for dedicated external drives via SCSI accelerators. (By the way, Apple claims only 25 fps performance on the 8500's internal 2 gig drive.)

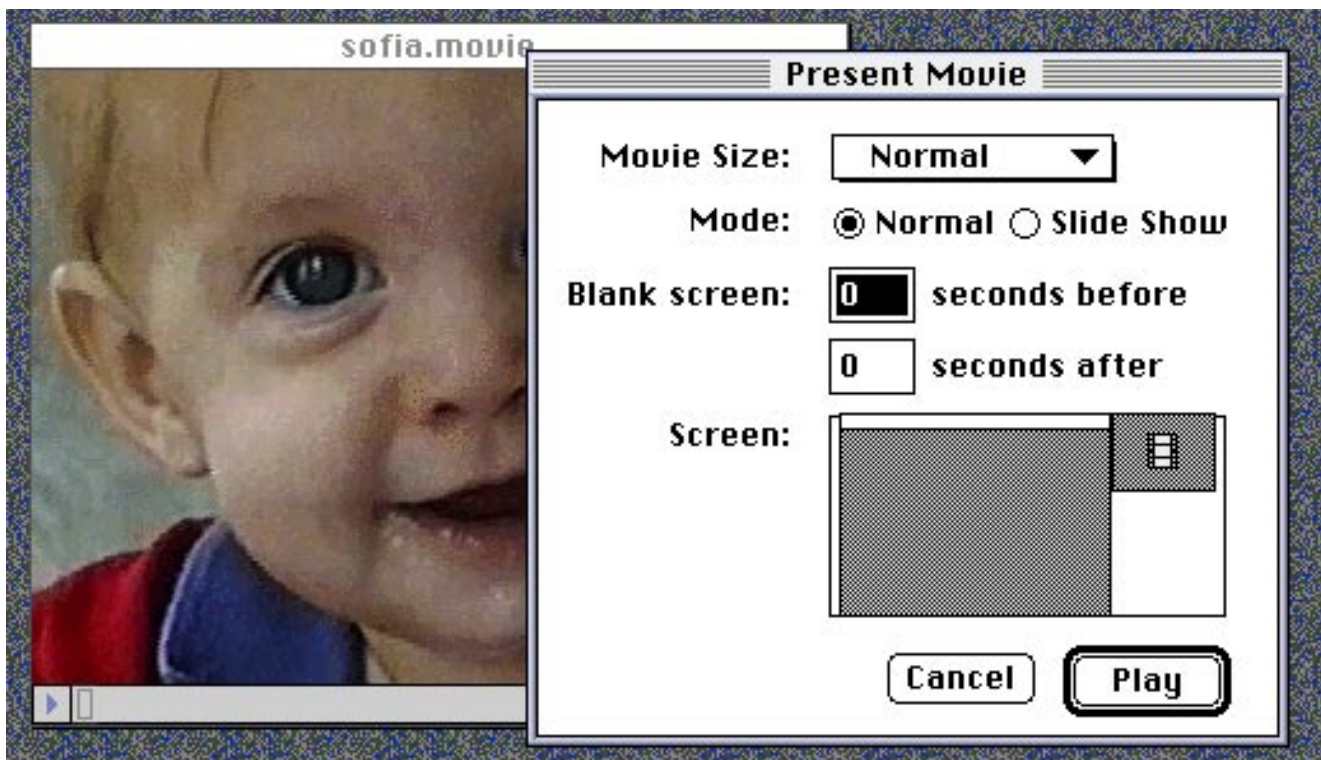
Cooling is the Challenge

The 8500 comes in the not-so-well-ventilated 8100/840 tower-style case, which also provides a second bay for an internal 3.5-inch drive. This physically could be a high-performance 7200 rpm drive on the Fast SCSI-2 internal chain which, in theory, will work for video capture. Don't succumb to the temptation. You will live a life of frustration and dropped frames on video captures if you choose this route.

Heat is the enemy of drives capturing video, and the second internal drive bay, though okay for a data or applications drive, will make you unhappy if you count on it to capture video. Don't even think of internal drives for serious video work.

Component Codec

So why all the talk of fast external drives hooked to SCSI accelerator boards? Well it deals with the native QuickTime capture codec for the 8500, called Component Video. It's the default, and best quality codec for QuickTime captures on this model AV Mac. Compression is low



Movie Player for Video Printing: When you "Print to Video" using Apple's Movie Player 2.1, you'll be presented a screen such as this. After you have configured your output NTSC monitor as a 320x240 screen, using the Desktop Control Strip, be sure to also set movie size at Normal. The process of video playback setup on the 8500 is somewhat arcane, but once mastered, goes quite smoothly.

and quality is very good, as it's based on the YUV structure of S-Video, but data rates are very high.

Read My Words: 4.5 meg/Sec

If you haven't captured QuickTime video before, Component codec will give you a rude awakening. If you plan to capture 320x240 windows at 30 frames per second, data rates to your drive will be up to 4.5 megs per second, depending on the quality level of sound that comes with video. This really is beyond the sustained ability of single fast drives attached to the 8500's External SCSI-2 port. Buy a PCI SCSI accelerator for decent transfer rates to external drives.

No Hardware Video Compression

The 8500 as yet, offers no on-board hardware assisted compression of video, akin to what Radius VideoVision Studio offers with its motion JPEG compression card. I've read on the QuickTime-dev mailing list, or somewhere, that the 8500 will support capture to hard disk of full 60 fields, 30 frames per second, 640x480 video with compact disk quality 44.1 kHz, 16-bit stereo sound.

The rub is that you will need an attached hard disk setup that captures more than 27 megs/second. In the real world this would require two PCI SCSI Jackhammer cards, feeding two high-speed Fast and Wide SCSI-3 Level 0 disk arrays. Not a cheap solution, even if it works. One can see why hardware compression boards were invented. If only an inexpensive one existed for the 8500.

No PCI VideoVision Yet

At this moment, Radius has not announced a PCI version or equivalent of the VideoVision Studio capture board. TrueMotion (formerly RasterOps) has announced intentions to ship a PCI version of its well-received Targa 2000 video capture card, and Media Translations has announced support for its Media 100 card. These cards run in the \$5,000 to \$10,000 range—not what one wants, or can afford, for some good-looking home movies, web page authoring, or CD-ROM work.

No Radius DAV Board Either

That's been the word anyway, on AOL's Radius tech support board. The Spigot Power AV boards for the 660/

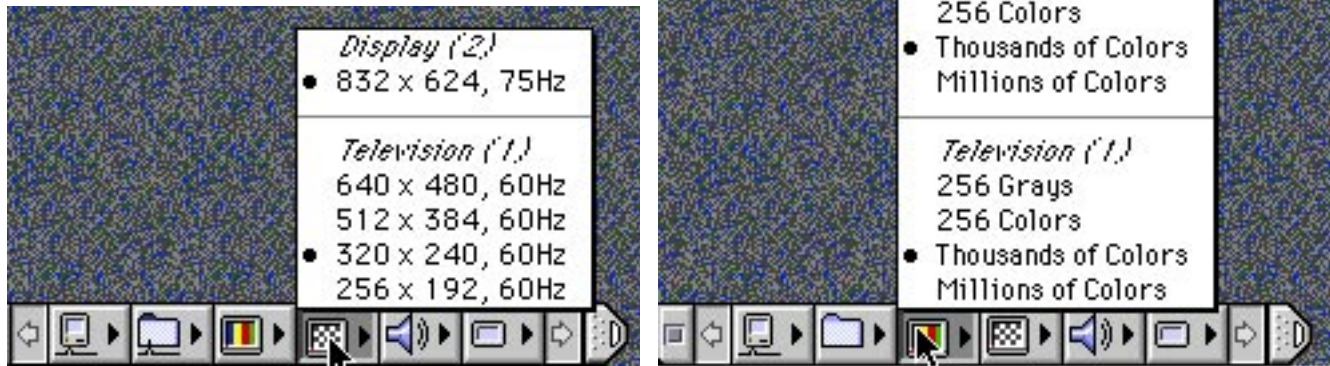
840AV machines have been such a technical support disaster as of October 31, 1995, that these boards didn't yet support QuickTime 2.0 in the now discontinued NuBus Power Macs, and don't even run in the speed bump (7100/80, 8100/100) AV Power Macs of last January. In short, the DAV slot in the 8500 probably won't get filled with a video capture compression board from Radius.

Apple's M-JPEG/MPEG Board?

MacWEEK reported in early August that Apple was developing with AVID, a hardware-assisted Motion-JPEG video compression board for the 8500/7500 that would provide 60 fields, 30 frames per second, 640x480 video in and out, for a price of about \$500. The report said the board, which also would support hardware-assisted playback of MPEG, would bundle with a basic editing program, and would ship about the time of Macworld Expo Tokyo, in March of 1996.

The report said data rates for this VHS quality output board would run in the neighborhood of 14 kb per frame.

Not broadcast quality mind you, but I'd rather invest in a board like this



Control Strip Pair: When using the 8500's desktop Control Strip for video playback setup, use the monitor icon with vertical stripes for color depth setup of your monitors, and use the monitor icon with squares on it for setting pixel size of the monitors. Please note to set the television screen size to 320x240 here, if you plan to print full-screen video to a TV monitor or VCR.

than another 4 gig drive. Some of us are happy with the experimental look in our movies. When the big Hollywood offers and advances come in, we'll upgrade to Media 100 or Targa 2000.

Movie Player and QuickTime 2.1

Use Movie Player 2.1, a gift from the Apple gods. The new feature that came with version 2.0, Print to Video is a wonder. It's easy to configure, and painless to select which monitor to print to—unlike Adobe Premiere. Movie Player is free, and available everywhere, just like QuickTime 2.1. By the way, my 8500 came with QuickTime 2.0 and Movie Player 2.0.

Upgrade to QuickTime 2.1 and Movie Player 2.1, and don't look back.

Sound and Displays Control Panel

You must have AppleScript enabled to use the Sound and Monitors Control Panel. This control panel, apparently an AppleScript-dependent application in the guise of a Control Panel, is among the worst designed pieces of software I've ever seen from Apple. Perhaps a software engineer hired from Microsoft designed this dog. I sure hope Apple gets a clue and redesigns the interface of this clunker.

Configure the Control Strip

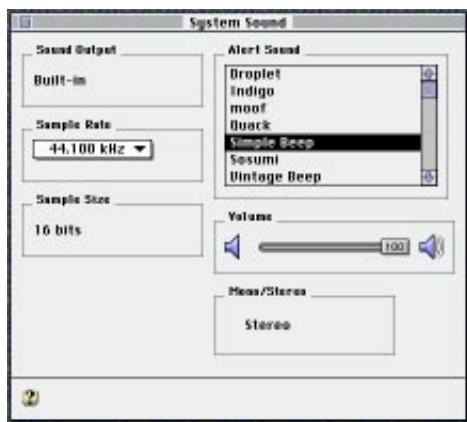
It's a tricky setup, the manuals don't help, and all Apple Guide does is take up needed RAM. You have to set color depth of your RGB monitor, then you set pixel size of your RGB and NTSC monitors. If you have a single resolution RGB monitor, you'll have one choice. If you have a multi-sync monitor, the place to change resolution is on the control strip. The same holds for output resolution of video from the 8500. This probably is the trickiest aspect of setup for video output on the 8500, and the only way I could figure it out was trial and error. To wit:

Use 320x240 for Full-Screen NTSC Out

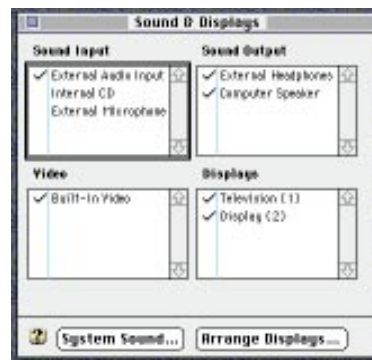
If you want full-screen smooth-motion video output, use the Control Strip to set screen size of your NTSC monitor to 320x240. Then, use Movie Player to "Print to Video," selecting the second, or NTSC monitor, and choose "Normal" size. Don't select 640x480 as screen size of your NTSC monitor (it's the logical choice), and don't "double" the size of your 320x240 movie on Print to Video playback. This, too, is the "logical" choice. Both choices will get you less than smooth playback.

Print to NTSC (TV), not RGB

Also, don't expect smooth playback when you "Print to Video" to the RGB monitor. Playback on the computer monitor, by comparison to the NTSC, suf-



On to Sound Quality Setup: This screen for sound quality, combined with another that allows choice of sound and video inputs, make up two of the three screens in Sound and Displays Control Panel. This Control Panel needs AppleScript to operate, and you must also configure the Control Strip to get proper video playback on the 8500.



Greetings from Sound and Displays: This screen greets you in the Sound and Displays Control Panel. You must master this unwieldy software and some features on the Control Strip if you want the 8500 to capture and playback audio and video.

fers by comparison. Be sure you have a TV or video deck hooked up to the video outputs of the 8500. If you don't, you won't see a second monitor to choose from when printing to video. The 8500 is meant to be used in conjunction with a TV and VCR.

Other Codec Choices

You can use Apple Video for capture, but don't expect the best looking clips if you re-compress via Cinepak. (Final file sizes in Cinepak are about half those of equivalent movies saved in Apple Video codec.) Video codec captures look pretty good at highest quality when printed to an NTSC monitor. Component gives the best quality, but even at 15 frames per second, expect to use about 2.3 megs of drive space for each second of video grabs. As with all digital video hardware, don't capture in Cinepak. This is a high-quality codec for final recompression after you've captured video to your hard drive.

Pare the Extensions

Keep the system extensions to a minimum. No Speech, no QuickDraw GX, no Telephony, nothing but the minimum. Use Apple's Extensions Manager, or better yet, something like Now's Startup Manager, or Conflict Catcher 3.0.

Apple's Video Player for Stills

This utility from Apple captures beautiful still frames from video signals. It produces clean two-field frame grabs up to 640x480 from either Composite or S-Video inputs. The PICT files it saves in SimpleText format are great for later use in documents, or as still images in QuickTime movies.

Video Player for Video

Apple Video Player isn't the best solution for capturing video streams to disk, as you cannot choose QuickTime codec or destination drive, nor can you select frame rate or quality. In all cases Video Player uses your startup disk as video scratch disk space. Better leave serious video captures to programs that can be set up more precisely.

Go Download Fusion Recorder

A creative alternative—and free—is VideoFusion's Fusion Recorder. Available on Radius' Tech Support area on America Online, version 1.1 is Power Mac native and works great as a configurable QuickTime movie capture program. This program was supplied free with earlier AV Macs. For editing you need something more flexible. (See my article on QuickTime editing programs in the Fall '95 BMUG Newsletter.)

VideoShop for the 8500

Avid's VideoShop 3.02 comes on a CD-ROM with the Power Mac 8500. It's a decent QuickTime editing program, but I've always found Adobe Premiere easier to use. Some like VideoShop's interface, but try as I might, I've never caught on. You can get all of VideoShop's manuals from Avid for \$29. Maybe I should order them.

Awaiting Premiere 4.2

This new version of Adobe's QuickTime editing program comes with a "CD-ROM Movie Maker" plug-in that will allow you to create low data-rate movies. Until now we've been depending on Apple's unsupported program by George Cossey called MovieShop. Cossey's venerable program croaks on 16-bit audio, and high-quality audio is now possible using QuickTime 2.1 and its IMA 4:1 audio compression now available for 16-bit sound. I hope Adobe's Movie Maker Plug-In lives up to advance billing. Premiere 4.2 is said to be optimized for use on the PowerPC 604 chip. I can't wait.

All in All

The 8500 is the coolest Mac I've ever met, a wonderful piece of enabling multimedia technology, and the best one-piece solution to come along for creating decent desktop video and audio. Plug and plays like a charm; this thing hooks to TVs, VCRs, and stereo components just like another stereo component with its RCA connectors. The 8500 is easily expandable, upgradeable and in my experience, very stable. It cost what my Mac IIci did five years ago.

Anyone who says Windows '95 and a Pentium can do what the Power Mac 8500 achieves, is clueless, or blind and deaf. Apple Computer needs to do a better job of pointing out the Mac's advantages, and the 8500 is a perfect example of Apple's technology prowess. 🦋

Dennis Dimick has written on QuickTime, CD-ROM, graphics, and Photo CD subjects for the BMUG Newsletter. A West Coast native and resident of Arlington, VA, he can be reached on the Internet via ddimick@aol.com.



Apple's Video Utility: Apple Video Player, which comes with the 8500, does a good job of capturing still frames from video up to screen sizes of 640x480. Though it captures video, other utilities are better suited and more customizable to this task.

Windows 95 for Mac Users

by Lyle H. Nishida

You've heard about it and if you are a loyal Mac user, your hype o' meter is probably pegged. 'It' is Windows 95, Microsoft's hyped, delayed, promoted, anticipated, and/or dreaded new operating system for Intel and Intel-Compatible PC's.

To tell you the truth, the source of my insights is that I have spent the last four months working for Microsoft's first Windows 95 licensee. (I don't know if I should brag or complain about that.)

So let's start with the highlights about this brave new Windows 95 world. (I don't need to tell you that these views are my own and do not reflect my employers'... blah, blah, etc.) I would hope that this will not get me flamed by either side since these are just my views and feelings.

A brief personal recap

My loyalty has been with Apple since the IIe, and I moved to a Mac Plus when the platform was, well, very expensive and not very open. I have enjoyed Quadra power and later, Power Mac power when it was the front of the Macintosh way. I have used a PowerBook in it's various configurations.

My Windows using friends have always tried to tell me how much less expensive their platform is (actually they always used the word 'cheaper'); my comeback was that if cheaper was such a factor then they should drive Yugos and leave the better cars to us Mac users who are used to paying more money for stuff... snicker.

On with the show

Hype #1. Windows 95 is a complete operating system. For the first time, Windows users do not have to have

their graphical OS run on top of MS-DOS.

Reality... True, but do you think that the old Windows and DOS lash-up made any sense in the first place? Mac users have had this from the beginning.

Hype #2. Plug and Play. You just plug the hardware in, run the set up new hardware program and use your new goodies.

Reality... False—I call it plug and cuss. There are about 150 PCs on our network with supposedly plug and play compliant hardware. Three techs spent a lot of time helping with such exotic things as printing, using on-line services, faxing, backing up to tape or using optical disks. I am told that when all of your hardware is plug and play compliant everything will work better. If there is not a driver with Windows 95 on your hardware you might be plain out of luck.

Trying to use SCSI devices is a riot.

Hype #3. Your applications will run faster.

Reality... Microsoft Office for Windows 95 seems to run faster than Microsoft Office for Windows 3.11, but I would suggest that unless you have a faster video card, your similar Mac will run faster. Meaning, the onboard video for 68040 and later Macs will run faster than most Windows video cards.

Since it is obviously in Microsoft's best interest to make Windows 95 look it's best I am sure that they pulled out all of the stops on Microsoft Office for Windows 95.

On the other hand, I have never believed that Microsoft was out to kill

the Mac, even when the Power Macs shipped and Excel ran like a slug. I mean, it seems that Microsoft has no real competition in Macintosh applications. Word and Excel dominate the landscape. On the Windows side there is Novell applications group and Lotus, with at the very least some market share in applications. I imagine that Microsoft makes more money from every Mac sold than they do from Intel based machines, even with the operating system revenues.

Hype #4. Networking is better.

Reality... For the advanced propeller head, yes. The Registry and System Policy Editor have much more power and flexibility than their Mac-based administrator counterparts. For the rest of us small office/home office users the fact that Apple has had File Sharing and Local Talk for years makes this less of a Windows 95 advantage.

Other points:

- 1) The former File Manager/Program Manager have now given way to a Mac-like desktop. Good, but still lacking the polish that the Mac has had since System 6. Just try installing fonts.
- 2) I find it difficult to believe that anything which professes to be so easy could have possibly produced as many how-to books as Windows 95. On the other hand, there are a fair number of Macintosh books too.
- 3) Many DOS and Windows applications simply don't run with Windows 95.
- 4) The minimum hardware required is really 8 megs of RAM and at least a 33 MHz 486 class processor. I know

this sounds lower than the Macintosh press has led you to believe but performance seems to be fine with that combo.

Okay lest you think that I am totally against Windows 95, a few things to think about.

IDE hardisk drives seem to have fewer problems and need less routine maintenance. Norton Disk Doctor is just about a weekly run for me and my Macs. It seems to find fewer problems with Windows.

The ability to run older Windows applications seems fair. I have several Windows applications which seem to crash more than before, but unlike a Mac, your

machine can continue on. Preemptive multi-tasking does work in Windows 95.

It is here now, so where is the next generation of Apple's OS?

If you need to work in an office where the plan is to use a form of Windows, Windows 95 is better than Windows 3.11.

If you or your company are debating which operating system to use, go with the Mac. It is still easier to use and has a much lower cost of ownership than does Windows. But, the gap is getting smaller. Microsoft has done an excellent job of bringing Windows 95 to the market place. It reminds me a lot of the Macintosh circa. 1987.

Compare Windows v1.0 to 95, and compare System 6 to System 7.5 of today. Who has come further? More importantly, who has the upper hand now?

My pleas are simple. Apple, get it together—because the gap is closing. If you cannot ship Copland soon, please ship us a refinement to System 7 with some of Windows 95's network administrator power... and don't laugh at where Windows 95 is today. Look how far Microsoft has come. ☞

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Native Wildflowers of California

By the Thousands!

by Brother Eric Vogel, F.S.C.

Brother Alfred Brousseau, F.S.C. (1908–1988) made a hobby of collecting 35mm slides of native wildflowers of California over a period of 45 years. His original collection of about 500 species faded because of the type of film he used, so he went back with his camera to redo his work. His collection now stands at about 20,000 pictures of over 2,000 species. He painstakingly identified the species, place, and time of photography for each slide.

Brother Alfred was born in San Francisco and raised in Napa. He joined the Religious Order of the Brothers of the Christian Schools at the age of 14. He attended St. Mary's College, where he later taught while simultaneously attending the University of California, Berkeley. He received a Ph.D. from Cal in Physics (with a 4.0 average!) in 1937. After a few years teaching at St. Mary's College, Brother Alfred was assigned as Principal of Sacred Heart High School. After 3 years there, he was appointed Provincial of the District of California. He returned to St. Mary's in 1959.

Brother Alfred published 56 articles in journals of national circulation and gave 46 lectures on various mathematical subjects to audiences all over the United States. He was the founding father, managing editor, and publisher of *The Fibonacci¹ Quarterly*. As a result he was featured in *Time* magazine (April 4, 1969), received international recognition from the California Mathematics Council, and had his name inscribed in a plaque at the new national center outside of Washington acknowledging him as one

of the four outstanding mathematicians of our times. He was pre-computers, so he did all his work on an IBM Selectric (*editor's note: for those of you of the post-baby boomer generation, the Selectric is a typewriter*).

Although he had many duties as Provincial of the California District of the Christian Brothers, Brother Alfred's position also afforded him an opportunity to travel throughout the state because it required him to visit all of the various communities and schools of the Brothers, which at that time included seven high schools and one college. He diligently sought out wildflowers, returning again and again to their habitat to get just the right picture. On one occasion I remember him going to Clear Lake, where he had chosen ten sites to photograph particular species for which he wanted better pictures. He visited the sites and returned here to St. Mary's only to find he had lost his house keys. He drove back to Clear Lake, revisited the sites, found the keys, and came home happy, especially since he had also found a new species of wildflower that day! One hates to think of the number of miles he put on cars in this pursuit!

Brother Alfred was a quiet genius. He talked little about his collection, and only gave one lecture that I know of, relating directly to it. The Biology department of the School of Science here at St. Mary's requested a lecture while he taught here and he obliged, astounding the botanists by calmly reciting the Latin names of hundreds of flowers as they were flashed on the screen. He had a remark-



Cirsium Occidentale (Family Compositae), can be viewed in flr_C. This picture was taken above the parking lot at McClure Beach on Point Reyes Peninsula.

¹Fibonacci was an Italian mathematician who was fascinated by the mathematical sequence built by adding two numbers together to get the next: 1,1,2,3,5,8,13,21,34, etc. This sequence frequently appears in nature, e.g. in the number of seeds in a spiral on sunflowers, in the leaf arrangement of many plants, and especially in pine cones and pineapple fruit. Brother Alfred's articles related many of these properties, and some of his lectures were on this subject. His real love of wildflowers came, however, from the fact that he saw the beauty of God reflected in this particular part of His creation.

able intelligence, and was typically able to use the standard wildflower text (Munz and Jepson) to identify the flowers himself. Whenever he was in doubt, he consulted his friends at UC Berkeley (especially a Mrs. Beard), as well as other associates at UC San Francisco.

Since we were members of the same Community of Christian Brothers here at St. Mary's College, and as I was one of his closer friends and associates while I taught Physics here, we often spent weekends at our summer camp on the Russian River. He liked to have me along, because I would do the cooking! He usually left camp in the morning and went out in search of wildflowers. He also made photographic collections of mushrooms, seaweeds, and trees! This is to say nothing of his very large collection of scenery, which was mostly of the High Sierra, although we also spent many an evening at the ocean waiting for a particularly beautiful sunset. Another of our major projects was the pursuit of the albino redwood—rumors of which abound in that part of the state. We finally located a site and actually found a completely albino specimen (white stems and leaves) on a small ranch along Willow Creek.

Before Brother Alfred died, I asked him what he was going to do with his collection. He replied, "Oh, somebody will get it." I suggested he give it to someone who would respect it. About a week later he came to me, asking me to build him a box of certain dimensions. We have a nice woodshop here, so I was able to make just what he wanted. He filled it with a selection of about 1,000 pictures from his collection, each with a card describing the characteristics of the flower, detailing when and where he found it, and giving its Latin name. He gave this collection to the Biology department of Saint Mary's—I think it consists of the slides he used in his lecture. After he died, his total collection went to the library, which did not know what to do with it(!). It ended up in the hands of one of the Biology teachers.

I have this collection now, and since I realized that the film was due to fade, I started computer scanning (after getting several small grants from various groups connected with the College) the set of 1,000 slides. Since I was planning a CD-ROM, I found that I had room for more



Calochortus Superbus (Family Liliaceae), can be viewed in flr_C. This plant is several feet tall with very large white flowers. It can be found in Sequoia National Park and in the Pinnacles National Monument among other places. (Munz p. 1351)

images, so I went back to his collection and selected additional pictures of the species in the box. This group finally included about 2,000 pictures of 665 species of wildflowers, which I had scanned by Barneyscan (130 Doolittle Dr. #8, San Leandro, CA 94577), saving the original scans as 24 bit to 8 bit adaptive pallet PICT files. I did all this in my "spare time," more out of respect for this outstanding person than out of any particular love of flowers, although I do a lot of planting and grafting myself. My work with computers just naturally fit in. I have three computers on my desk: one dedicated to scanning, a Quadra for this kind of work, and a 486 for IBM-type stuff.

I built a Hypercard stack to display the information on the cards and the pictures themselves. To my dismay, when Apple came out with System 7, it would show about ten cards and then hang—evidently other people had the same problem. (On top of that, Apple was no longer bundling the complete Hypercard program with their computers—needless to say, I was quite perturbed!) About three years later I was able to produce a CD-ROM using Supercard standalone pro-

gram to display the information and pictures. I also translated the images into TIFF files to produce another CD for IBM compatibles. These CD-ROMs can be obtained by contacting me.

I plan to continue this project, but I will probably have the pictures scanned using the Kodak system—all it takes is money (and time)! This process creates very large files, so something will have to be done here to fit a reasonable number of images per CD. Kodak only puts 100 files on one CD, which would make the entire collection a formidable 200 CDs! That's okay for archiving, but not terribly convenient for reproduction—and it is my intention to try to distribute this marvelous collection as widely as possible. The University of California at Berkeley has showed some interest in putting the slides together with their pressed plant collection, but they have many irons in the fire and I don't know if I can wait for them. ☞

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MacInTax '95

Intuit Tries Harder

by Scott Beamer

Last year, MacInTax got more press than ever before in its history. Most of the publicity was bad and most of it missed the point. Sure there was an insignificant bug and Microsoft tried to buy Intuit, which makes MacInTax, but no one noticed the product's change for the worse.

I have to admit, I chose the last BMUG Newsletter to get a lot of complaints about MacInTax off my chest. I felt the package had drifted away from the design concept of its original developers. In talking with BMUGers who read my article, I frequently get the question, "If not MacInTax, then what package should I use?" My answer is, there isn't any forms-based tax package out there that I know of (looks like a great market opportunity for someone). MacInTax is a good product, but I liked it better the old way.

Intuiting customers' needs

Year after year, I am impressed by Intuit's efforts. I expect to continue using Quicken and MacInTax as my financial software for some time to come. Although the majority of Intuit's sales are to Windows customers, the company continues to turn out a timely set of Mac products with good features at very reasonable prices.

Even though it is drifting even farther from its forms-based roots, MacInTax looks great this year. Intuit took the criticism it got last year seriously. It even sent letters to customers asking for more suggestions and criticism. That is a very encouraging attitude in dealing with a difficult situation.

A Range of Tax Products

This year's MacInTax has a look and feel that complements Intuit's other ma-

ior product, Quicken. It is attractive, non-threatening, and easy to use (at least for those not trying to use it as a forms based product). In the new versions of both products, there is an almost dizzying array of choices of help and tools.

MacInTax DeLuxe

Furthermore, this year, Intuit is offering quite a range of tax products. The most apparent new one is a CD-based version of MacInTax called MacInTax DeLuxe, which should appeal to a large portion of MacInTax users. Its chief advantage is tax advice in the form of two books—*The Money Income Tax Handbook* and *How To Pay Zero Taxes* and 30 IRS publications. These, in addition to the regular help, should give users all the help they need. Another useful benefit of the CD version is that it keeps tax forms on the CD, saving you about five megabytes of hard disk space.

If you're one of those who usually buys a tax advice book as well as MacInTax, the DeLuxe version is an obvious choice. Not everything on the CD-ROM is quality material, however. A large portion of it is video filler. I'm not as thrilled about the video clips of gratuitous advice sprinkled through Easy Step and in certain help sections. They are uninspired, simplistic, boring, and require at least a double-speed CD-ROM player.

MacInTax 1040 Business

Another new CD product from Intuit is MacInTax 1040 Business. It includes the complete standard MacInTax plus a tax advice book for small business, IRS business publications, more attention to business in the interview, more business tax help, and Corporation, S Corporation, and Partnership form sets.

MacInTax 1995

What can you expect in MacInTax 1995? In a nutshell, a less bulky package featuring some streamlined and improved functions while forms continue to lag behind. You will probably need the same 8 megs of RAM as last year and at least System 7.0 to run the program. This year's version is the first to be Power Mac native. And prices remain attractive.

Smaller is better

Not mentioned in Intuit's publicity for MacInTax but very welcome anyway is the program's smaller size. Every year since it was acquired by ChipSoft, MacInTax has been growing startlingly in the amount of hard disk space it requires (see Figure 1). This year, our poor overstuffed hard disks finally get some relief. This year's head start version has slimmed down compared to last year's final edition, from around 18 megs to 8.5. Let's hope this year's final version will not be too much heftier. The DeLuxe version is even more svelte, putting only three megs on my hard disk.

Streamlined interface

Best of all the functional changes in MacInTax is a new Fast Track alternative for filling out tax forms. For those who prefer to use the interview approach but have enough experience with their taxes to know which forms they will be dealing with, this alternative cuts out many of the questions irrelevant to their personal situation. It makes for a much leaner, quicker, less tedious interview. Now, the interview can also take you through the filing of 1040ES (estimated taxes) if you want to.

The Easy Step (interview) portion of the program has had a major over-

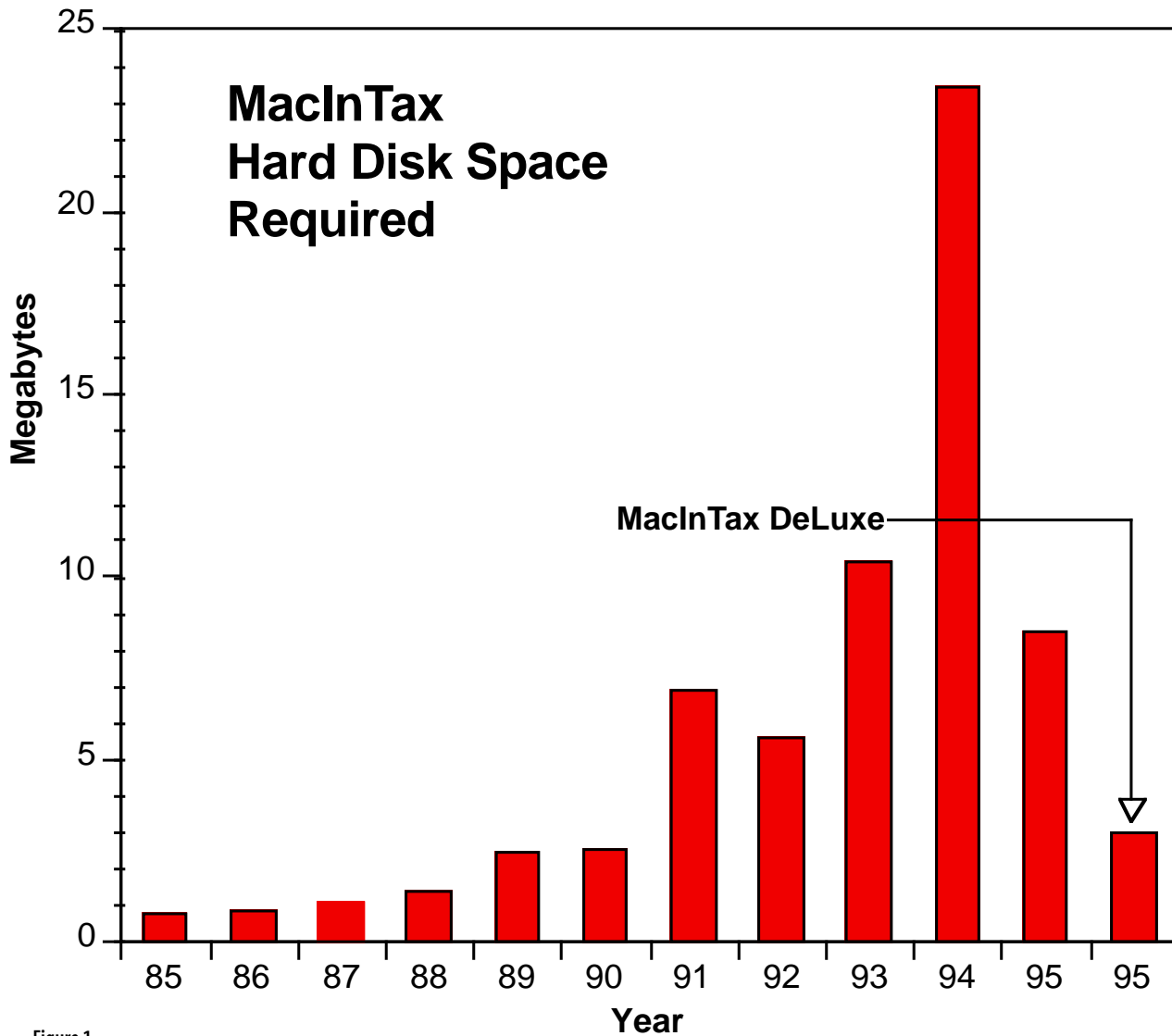


Figure 1

haul and is much the better for it. It has an attractive new screen and a tab navigation arrangement. Intuit has added the Interview Navigator, which allows you to see just where you are in the course of the interview and to jump to any other part of it.

For the first time this year, Intuit promises state versions of MacInTax for all states that require an income tax return, plus the District of Columbia. Wouldn't it be nice if next year, they put all the state returns on the CD-ROM version, replacing all that video filler?

MacInTax 1995 will offer better printing control than in the last several years. There are check boxes for itemizations and Smart Worksheets that allow you to decide whether to print them or not. This avoids printing many pages

of forms you will only throw away and speeds up printing considerably.

Building on Quicken 6

Those of you who have upgraded to Quicken 6 may have noticed its beefed-up tax features. Quicken 6 offers a nifty tax planner that gives a simple overview of what you can expect your next year's taxes to be. Its export tax data section looks improved and I am going to try again to transfer my Quicken data directly into my tax forms. This operation has never been satisfactory in the past; I have always found too many situations the software couldn't handle adequately. Maybe this year it will finally work.

Tried and True

Back by popular demand is the ability to mark entries as estimates. This is

useful as it allows one to keep working on a return while still waiting for some final information. Last year's figures are often best to use as estimates.

Again this year in MacInTax, there is a tax planner, allowing you to compare up to three scenarios or ways to fill out your tax return. The classic use of scenarios is to see whether it would be better for a married couple to file jointly or separately.

Forms lag function

For those who prefer the forms-based approach, there is little good news. WYSIWYG forms have not returned. In fact, there are fewer of them and more of the schedules are now infected with Smart Forms, for which I have yet to find a use. Luckily, you can now avoid printing out

the Smart Forms that distort the IRS forms. You can also hide them from screen view, but you must do so for each form separately.

Also disappointing this year, from a forms view, state forms have been infected with the Easy Step interview.

Some complaints

I still have some specific complaints about this year's MacInTax. The serious bug I found in Schedule E, doing my taxes last year is still there. I'm surprised they didn't fix it. As has been true for a few years, this year's version of MacInTax will not open last year's version. You will have to keep the entire thing on your hard disk to have on-screen access to your tax return in the months and years to come.

Heaven help you if you have to talk to a live tech support person at Intuit during tax season. Intuit is aware of the crush, especially as the April deadline draws near, and does the best it can. It offers alternative ways of reaching tech support via fax, Intuit's BBS, and on-line services. Consider using an alternative service if you need help during tax season.

Does MacInTax Make Sense For You?

Should you use MacInTax? People often tell me that they feel their return is too simple to bother with MacInTax. I suspect they're right. Most can do their tax returns with paper and pencil in a weekend afternoon. All they need is a couple of copies of a 1040EZ or 1040A, the slips the government has sent, plus W-2s, 1099s, and such. The best guide is usually last year's tax return. Just fill in the same lines.

But there is another group of taxpayers for whom MacInTax is obviously useful. These are taxpayers who file complex returns—itemizing deductions, including multiple schedules, C, D, E, and such.

Then there are the taxpayers between these two extremes for whom the value

of MacInTax is not as obvious. I have found many of the people in this group use MacInTax even though they know it isn't necessary for them. They enjoy using MacInTax and their Mac, want to learn something, and hope to save a few dollars through MacInTax's advice. I am very sympathetic to that.

However, there are taxpayers who use and don't use MacInTax for what I consider the wrong reasons. Some low-end users feel they can save the cost of a tax preparer by buying MacInTax. Some high end users often say, "Oh, I wouldn't even try going near my return. I just take the shoe boxes of receipts to my accountant. It's money well-spent."

Both groups are missing the point. I think the point of using MacInTax is to pay the lowest taxes you are legally entitled to with a minimum of effort, and receive the bonus of peace of mind after dropping the forms in the mail. The most important thing MacInTax can do for you is to help you learn something about your tax situation. Over time, you will learn how to make smart decisions from a tax point of view all year long.

While using MacInTax can save you the cost of seeing a tax preparer, you may also miss out on tax-saving opportunities. For many it is risky to file returns year after year with no one to double-check their filing strategy.

Similarly, those with complex returns are likely to pay considerable taxes. It would help them to have some sense of how they incur taxes and how they can lower taxes. Being thoroughly familiar with their tax returns seems like common sense. Having a \$200 an hour accountant do simple arithmetic and fill out forms is not. Why not prepare one's return the best one can, *then* go see that expensive accountant, if need be?

Pretty much anyone who uses MacInTax should be using Quicken as well. Together, they provide a particularly easy and inexpensive way for most

of us to get our financial house in order. Better yet, the variety of planning tools and advice included in the two products offers us a chance to learn more about our finances painlessly and get better at managing them.

Intuit this!

With MacInTax coming out in so many versions now, why not a MacInTax Classic? Hey, it worked for Coke. Intuit states the average MacInTax user has two-and-a-half years' experience with the program. I can't imagine that a significant number of these people wouldn't rather work on a forms-based version of MacInTax—a lean, mean, no-nonsense version. It might be a big hit with tax preparers whose business is too modest to afford professional tax software.

Maybe next year we can also have a Fast Track for forms-based users. This Fast Track would turn off the Smart Forms we don't use, especially the Federal Information Worksheet. This is an Intuit worksheet required of anyone who takes the forms-based approach. For most, it is a nuisance because all the information can be imported from last year's return. ☞

List/Upgrade

MacInTax/Personal 1040
\$39.95/\$29.95

Deluxe CD ROM
\$49.95/\$39.95

MacInTax/Business 1040
\$79.95/\$69.95

MacInTax/State
\$34.95/\$24.95

Intuit (tax division)

6256 Greenwich Drive, Suite 400
San Diego, CA 92122-5945
(619) 453-4446
(800) 756-6746

Archiving, Backup, and HSM

Three Data Storage Management Techniques Compared

by Fred Swan

Most computer users don't think much about data storage management. However, it is a significant cost center for most computer-integrated businesses. It can also be quite expensive for home users.

Studies have shown that the cost of managing every two gigs of data over a one year period costs the average business about \$7,000. This includes the cost of the primary storage (a disk drive), time spent administering and servicing the device, restoring or recovering lost data, etc. However, these costs can be reduced with just a little bit of effort on the part of individual users and their MIS departments.

There are three primary techniques used in minimizing data-storage-related costs. They are archiving, backup, and hierarchical storage management (HSM). Although these techniques are inter-related, their primary goals are different and so are their results. To maximize data storage efficiency, the use of all three techniques in concert is necessary.

The purpose of this article is to explain each of the three methodologies, define the applications for which they are best suited, and provide an example of how all three can be used together to establish an efficient and safe data storage system.

Archiving

Primary storage—the main hard disks or disk arrays on any particular computer workstation—is relatively expensive and, for that reason, is usually in short supply. When was the last time you heard someone say that their hard drive was too large? Probably never. This is the reason behind archiving.

*When was the last
time you heard
someone say that
their hard drive was
too large?*

Archiving is the transfer of infrequently used data files from primary storage to less expensive media—usually tape or removable disks of some sort. The files are preserved for future use, but are essentially offline. The expensive primary storage space made available by the removal of the files can then be used for more pressing matters.

Judicious archiving can save a considerable amount of money by reducing the requirements for hard disk capacity. On the Macintosh, archiving can be done manually by dragging and erasing files in the Finder. However, for many users it will be more efficient to partially automate the process with archival software. Archival software is usually combined with backup software. A good example of this is Dantz Development's Retrospect and Retrospect Remote.

Backup

While archiving is good at minimizing the hardware costs of data storage, it is of no help in the case of drive failures, viruses, theft, or such disasters as fire, flood, and earthquake. This

is because archiving alone only maintains a single copy of any data file. If something should happen to one of those files, the data must be recreated or it is gone forever.

The effect of data loss can be catastrophic to a business. A survey by IDC Corporation shows the typical cost for a company to replace just 20 megs of lost data. Of course, most companies have a lot more data than that.

Replacement Cost of Data Lost (by Department)

Sales & Marketing
Time: 19 days
Cost: \$17,000

Accounting
Time: 21 day
Cost: \$19,000

Engineering
Time: 42 days
Cost: \$98,000

The chart above shows the cost in time and money of recreating data files. But, is that the only cost? What about loss of business in the meantime? Or the effects of being late to market with a new product because of data loss? Studies show that in the first ten days after critical data loss, a company can lose 2-3 % of its annual sales. Fifty percent of the companies who are without this data for ten or more days never recover. Ninety-two percent of all companies without a disaster recovery plan, go out of business within five years. Yes, having backup copies of your files is important.

Backup is a process which creates duplicate copies of data files. Then, if the original files are lost or damaged in some way, they can be restored from the du-

plicates. Regular backup can provide considerable data security.

The most basic Macintosh backup would be using Finder copies to duplicate the contents of one disk drive onto another. However, this method has a number of drawbacks. It uses more of that precious primary storage space. It requires an on-going, concerted effort by the user to maintain a current backup. It is time consuming because it requires a complete backup every time. It doesn't provide adequate protection from such things as theft, viruses, and fire.

Studies show that in the first ten days after critical data loss, a company can lose 2-3 % of its annual sales. Fifty percent of the companies who are without this data for ten or more days never recover. Ninety-two percent of all companies without a disaster recovery plan, go out of business within five years.

A more robust backup strategy maintains at least three backup data sets on removable media, such as tape or optical cartridges. The sets are rotated so that there is always a current backup and two that hold slightly less recent data. The two sets which are not currently in use are stored off-site, preferably in a high-security, fire-safe location. The slightly older backup sets help ensure that data loss from a virus is minimized. (A backup of virus-infected data isn't much good.)

This sort of backup strategy is best managed through a dedicated backup software program, such as Dantz' Retrospect or Retrospect Remote. The software is helpful in a number of ways. It provides drivers for tape drives which use inexpensive backup media. It can automate the backup process to reduce the amount of time and effort required for routine backup. It will perform incremental backups—copying only files which have changed—thus reducing data storage requirements and saving time. It can also maintain catalogs of the storage sets and greatly ease the data restoration process.

Hierarchical Storage Management (HSM)

Archiving and backup (including backup of archives) are both important processes in data storage management. However, they don't provide a complete solution. To achieve that, HSM should be included in the mix.

Hierarchical storage management—typically administrated via dedicated HSM software—automatically moves infrequently used data to less expensive storage. Unlike archiving, however, it moves the data to storage which is still online and leaves a trail as it does so. This trail is used to automatically retrieve the data when it is needed. Typically, this entire process takes place transparently. The user's experience is virtually identical, whether they are dealing with normal files or files which have been moved by HSM.

The purpose of HSM is to reduce the requirements for expensive primary storage while still maintaining fast access to data. For the most part, HSM is only available for UNIX or NetWare environments. However, FWB, Inc. has an-

nounced that they will be shipping HSM Toolkit™, the first HSM software available for Macintosh, in late 1995.

In fact, the Macintosh is better suited to HSM than other operating systems in many respects. The Macintosh can easily mount volumes, including remote or removable media storage. The Mac OS provides aliases, which are an ideal means of tracking files that have been moved. The Mac OS stores files and folders hierarchically.

How HSM Works

HSM automatically moves (migrates) and retrieves (de-migrates) files based on a set of rules and filters defined by the user. Rules determine where and when the files are migrated or de-migrated. They also help determine which files are affected. Filters provide additional guidelines about which files will be moved. When HSM is initially configured, the user determines what rules and filters should be in effect. From then on, the software acts automatically based on those decisions. Of course, the user can intervene at any time and change the rules and filters as they wish.

The two most common rules are called "The Cobweb Rule" and "The Watermark Rule." The Watermark Rule determines how much empty space should always be available on the primary storage device (hereafter referred to as the "source"). For example, if the source is a 500-meg drive, and the user always wants 100 megs of free space available on that drive, then the Watermark should be set at 400 megs or 80 percent full. Whenever the drive becomes more than 80 percent full, data will be migrated until the used capacity is once again below the Watermark.

The Cobweb Rule is based on when a file was last accessed. Last-accessed date is a good means by judging whether or not a file needs to be kept on the source. Using a file's modification date would not reflect the instances when a file was opened and read but not changed. So, the user decides how infrequently accessed a file should be before it is migrated. Some users will prefer six months of file inactivity, some two weeks, and others a full year. Files will be moved when they become eligible for migration according to the user-defined Cobweb Rule.

The Watermark Rule and the Cobweb Rule can be used by themselves or in conjunction with each other. If they are used together, the files eligible for migration under the Cobweb Rule will only be moved once the Watermark has been reached.

Filters are used to eliminate certain files or folders as candidates for migration. For example, you wouldn't want your System Folder migrated to another drive. Therefore, a filter would prevent that. Other filters might keep applications, certain file types, or specific files from being migrated.

Actual migration takes place in several steps. Once a file has been selected for migration and the appropriate migration time is at hand, a copy of the file is made on that secondary storage device which has been designated as the destination for all migrating files. In the case of HSM Toolkit, the destination can be any writable, Desktop-mountable storage device.

When the copy has been made, it is verified. This ensures that the copy is identical to the original file. When the verification is successful, the original file is deleted and replaced with an alias bearing the same name as the original file. That's all there is to it.

From then on, when a migrated file is accessed (through its alias) it is de-migrated at the appropriate time. If immediate de-migration is not selected, then the file is opened from the destination and marked for later de-migration.

The Benefits of HSM

HSM reduces the cost of data storage by automatically and transparently moving infrequently used files to less expensive storage media. However, the files remain online. Furthermore, aliases are left behind with the exact names and locations of those files which have been moved. This means that, as far as the user experience goes, it's just as if the files had never been moved. HSM can provide

similar cost savings to archiving, with improved ease-of-use and time-to-data.

Putting It All Together

Now that the concepts of archiving, backup, and HSM have been briefly explained, an example of how they can all be used together would probably be helpful. For the sake of convenience, we'll use the BMUG office as our computing environment example.

The office has a number of Macintosh computers, all connected via a network. The Macs are used for a number of different tasks. Some are for accounting and administration, others for database management, and still others for producing Newsletters, flyers, and CD-ROM discs. Every day, important new files are created and existing files are modified significantly. It is vital that this information not be lost. The same goes for the important data files which have been created over the years—things like past Newsletters, artwork, and tax records. But some of those things aren't accessed on a regular basis.

To make sure that there are backups of the important data, BMUG uses Retrospect and a DDS tape drive regularly. Backing up to tape is fairly fast, easy, and the media is relatively inexpensive. And for BMUG, backup is essential. Can you imagine the impact on you, its members, and on membership renewals if a disk crash resulted in BMUG losing all the data from an upcoming Newsletter? And when the BBS crashes, backups are essential in making sure that all of your email and uploaded files are saved.

BMUG also archives data. Things like two-year old graphics and Newsletters, tax information, etc., need to be preserved for future reference. However, they don't need to be kept online for immediate access, because they aren't referred to very often. These files are archived to tape, MO, or CD-R discs. MO and CD-R are better for long-term archiving than tape because the media lasts longer. You

can put the cartridges or discs on the shelf and ignore them for years. Tapes need to be re-tensioned annually and replaced regularly. They are also more susceptible to environmental damage (data loss from heat, humidity, etc.). Because BMUG archives data, they can spend less money on hard disks. This helps keep membership costs lower and allows BMUG to spend more money on member services.

BMUG does not use HSM yet, because there is still no HSM software shipping for the Macintosh. But it is easy to imagine how BMUG might use software such as FWB's HSM Toolkit when it becomes available. A copy of the software can be run on the BBS server to move files in the Shareware library from the fast hard disks to slower ones. This will free up space on the main drive, again saving money. It will also increase the amount of files available on the BBS and help reduce the number of messages you get asking you to empty your mailbox. The administrative group can use the software to migrate last month's email, faxes, and other communications. The information is still online, but won't be taking up expensive hard disk space. The publications group can use the software to keep this Newsletter readily available to look up Choice Products and to refer to articles for the next few months, but will free up hard disk space to use for mastering more CDs.

Archiving, backup, and HSM are related, but not identical. They are all components of a well-planned data storage management system. Used together, they can ensure data integrity, reduce storage costs, and maintain easy access to data. Take a look at your data and how you store it. Chances are, you can save money or improve data security with a little planning. ☞

Fred Swan is senior product marketing manager at FWB, Inc. He has worked in the data storage industry since 1986.

Not Far Enough

Software Liability

by Rita M. Bowman

Some companies are addressing software compliance (being software-legal) for company-owned software. Those who continue to deliberately violate copyright law are simply gambling with time. However, I've never met anyone who has not seen software passed around within his/her company. This is the piracy that creates liability for companies who try to be software-legal. The common practice of passing software around involves inexpensive to multi-thousand-dollar software.

Games, usually illegal copies, are prevalent in all companies—accounting for 26,000,000 hours of work-time loss each year (*CNet Central*, August 20, 1995). Personal finance and tax programs can also be found. Pornography can mean double jeopardy—illegal software and exposure to “sexual harassment lawsuits because an employee is exposed to pornographic images in the workplace.” (*Marin Independent Journal*, August 28, 1995, “San Rafael Firm Audits Software,” Attest Systems, Inc.) Applications introduced by employees are also a major source of virus infection.

Just because the company purchases adequate copies of software for the business does not mean it has taken adequate steps. Users don't know laws or company policies relating to software. Often policies are inadequate. Just ask a few people around your company to see. An education program for all users, and regular monitoring of hard drives are necessary.

For example, on August 14, 1995 the Software Publishers Association (SPA) announced the settlement, in six digits, with a large Michigan hospital. It was believed that the hospital's software compliance program was adequate to prevent the use of illegal software. The hospital

was reported to the SPA. The Vice President of Finance was amazed when the ensuing software audit report showed illegal software from 38 different software companies. Audit and legal fees added to the expense. If a lawsuit goes to court, fines can be as much as \$100,000 per software title, plus audit fees, legal fees, etc. Once a company is investigated, the probability of a repeat visit is highly likely. Diligent effort is required to enforce company policy and compliance.

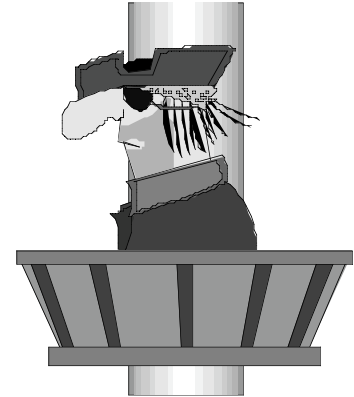
Auditing Tools

GASP Macintosh and GASP for PCs were welcomed releases in 1995 by Attest Systems. The PC version has a huge application database reference—over 3,000 references, and many cool report features. It does not require a TSR. These tools were developed specifically for software auditing.

GASP
Attest Systems
San Rafael, CA
(415) 491-7800

LANsurveyor 2.0 by Neon Software gathers software audit data over a Macintosh network. QuicKeys by CE Software Inc. can be used to automate the process; a script could also be written. Great improvements were made in version 2.0 of LANsurveyor. The Find feature makes it possible to find a given computer within a network zone, significantly increasing its usefulness when there is a need to audit a specific computer.

LANsurveyor requires simple network management protocol (SNMP) on each computer. Problems occur if users delete it from the System Folder. An inactive SNMP can be detected. Making it invisible is one solution, or informing



users that it is important and must not be deleted. Following through on reprimands if it is deliberately deleted is another. Note: If the operating system (OS) is reloaded, the SNMP will also need to be reloaded. This must be checked before accusing a user of deliberately deleting SNMP.

LANsurveyor 2.0

Neon Software
Lafayette, CA
(510) 283-9771

QuicKeys

CE Software Inc.
West De Moines, IA
(515) 221-1801

KeyAudit by Sassafras is a good tool to have on hand. With KeyAudit, it is necessary to go to each computer to run it and then save the data to the server; data can also be collected on a floppy disk. KeyAudit can be used to involve users in an initial software audit situation so they know what a software audit is about.

KeyAudit
KeyServer
Sassafras
Hanover, NH
(603) 643-3351

SPAudit by the Software Publishers Association can also be used to collect audit data.

SPAudit

(Mac and PC)
Software Publishers Association
Washington D.C.
(800) 388-7478

Metering Tools

Network metering software is a tool that controls application usage over a network to endure license compliance. Access to application use is dependent upon the number of licenses purchased. Some people like metering, others don't. Metering centrally controls metered software and can correct software inequities throughout a company. However, if an insufficient number of licenses are purchased, productivity can be stunted; frustration and resentment can be raised if users are denied access to an application when a rush project must be done. If licenses are not added, the stage is set for unauthorized copying of software. Users will go to great lengths to procure needed tools for their work. A thorough evaluation of application usage is in order before implementing metering. Metering does not eliminate monitoring of hard disk content for unauthorized applications.

KeyServer by Sassafras controls Macintosh and Windows application usage at any given time. It is effective in controlling license usage and has other nice features.

Express Meter 3.0 Audit Kit and Express Meter 3.0 by Express Systems have some very helpful features. The function, Audit Graphically, shows PC application usage patterns over a 30-day period, then compares usage to the number of licenses a company has, to determine license shortages or over-purchases. Express Meter 3.0 controls software application usage and "suite" utilization.

Express Meter 3.0 Audit Kit

Express Meter 3.0

Express Systems
Seattle, WA
(205) 728-8300

Skyline, developed by The AG Group has a feature that caught my eye from a computer asset management point of view. Skyline alerts the network administrator if a computer is taken off the network, or added to it. Being alerted of a change can help protect assets. The AG Group also offers other network tools.

Skyline

The AG Group
Walnut Creek, CA
(510) 937-7900

Other applications addressing Macintosh software metering and inventory can be found in the *Macintosh Product Registry*, a quarterly publication by Redgate Publications Corporation.

Macintosh Product Registry

Redgate Publications Corporation
660 Beachland Blvd.
Vero Beach, FL 32963

Different Tools for Different Purposes

As with network and individual computer management, different tools serve different purposes. Having a few different ones is very helpful. Metering can help control license usage. And, a dedicated auditing tool is an important addition to compliance management—to see what is really on each computer. Demos can be requested from companies mentioned above; some are linked to <http://www.advotech.com>. 🦋

Rita M. Bowman, CSM is a specialist in computer and software asset management. She can be reached on Planet BMUG at Rita_Bowman@bmug.org or at advotech@ccnet.com. For more information on Computer and Software Asset Management and links to related topics, and other fun stuff, see the AdvoTech Web Page at <http://www.advotech.com>.

The Volunteers of TEAMSaturday

by Karin Hart

On almost any Saturday afternoon between 1 and 5 PM you can stop by the BMUG office and meet a unique group of BMUG members having a good time while they provide a valuable service to our organization. These are the members of TEAMSaturday, Volunteer members do a variety of tasks: putting the labels on another mailing for the business office, returning phoned in questions to the Helpline voice mail system, helping members with hardware appointments trouble shoot Mac problems, or install a new hard drive or more memory.

Most of the volunteers have full-time jobs during the rest of the week. They see Saturday as a chance to do something a little bit different from their hectic lives, while helping other members at the same time. Others want to learn a new skill or brush up on changes to newer versions of Macs. I personally enjoy sharing the “can do” spirit of each volunteer, most of which come back week after week or every few weeks. I thought I’d tell you about a few of us.

For a long time Dave Granquist beat all of us to the office, even whoever had the key. He would race in and clear off your calls from the voice mail so that other volunteers can call you back. A little while before this newsletter went to press Dave told me his job was sending him to Japan for some kind of photo shoot or filming. In the past two years or so, Toni Meyerhoff, Chris Harris, and Ricardo Canepa have spent a lot of time returning calls. Ricardo has shared a lot about graphics programs to the group and has moved on to learning more about hardware. John Charles can dissect your computer



Carol Haberberger stuffing newsletters.
—all photos by Karin Hart, 1995

and zip it back together faster than anyone else here. Bill Noland has unselfishly shared his professional skills as a certified Apple computer tech with us and alternates his volunteer time between us and another non-profit on Saturdays. Bob Rosas, Peter Linde and I have spent



Bill Noland pops the cover before installing more memory.

the last year experimenting on sharing the responsibility of being Team Leader for the Saturday Clinic, in an effort to keep any of us from burning out.

Thomas Benner is often covers “the late shift” on Saturdays, coming in after his daughter’s soccer games or a week-



Carol Baumeister holds up a completed trouble ticket after a marathon of call backs.



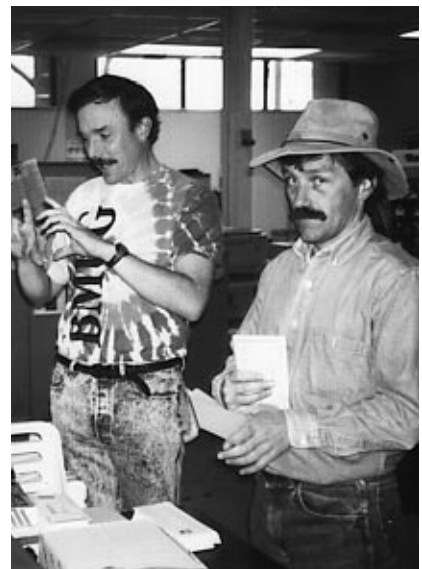
Chris Harris returns a call to a member out of state with a mac problem.



Toni Meyerhoff reviews trouble shooting points via phone with member.



Wednesday Helpline Leader Lorca Hanns troubleshooting a software problem with a member.



Dave Granquist and Thomas Benner help with a mailing before the afternoon appointments.

end call to one of his computer consulting clients. He has great timing by showing up just as others have to leave.

Finally, the Saturday Helpline has had guest appearances throughout the year from various BMUG celebrities like: Fred Swan, chairman of BMUG's Board of Directors, to recover a crashed hard drive or just to lend a hand, or our very own short stop Tim Holmes, who has single handedly dissected every version of the PowerBook known to man. He and Mitch Huitema have a knack for popping in, just in time to share their knowledge, when one of us is stuck on what to do next. Carol Haberberger joined us for several of the labeling projects and handed out newsletters at the office for members wanting to pick up theirs on the weekend. Of course we love it when other helpline regulars join us like Gretchen Brewer, Thursday co-leader Bruce Linde, Carol Baumeister, and Wednesday Team Leader Lorca Hanns.

My volunteer efforts for BMUG began as simply as responding to a no-

tice posted on Planet BMUG BBS for someone with a pick-up truck to take a load to the dump. After it almost expired without a response, I emailed the clean-up event coordinator that if they still needed help we could use my small truck on a Saturday. After Ian and I went to the dump, Peter Linde recruited me to return a few phone calls to members having trouble logging on to the BBS. One thing led to another and he convinced me Saturday was THE place to be.

Well, there you have it... a peek into some of the people who are here on Saturdays. If you're in the area, consider joining us on Saturday or one of the weekday Helpline clinics. ☸

Karin Hart is a TEAMSaturday volunteer that takes her Power Book 160 with her on the road in order to dial in to BMUG from afar. She's hoping, of one day becoming a digital road warrior. She can be reached via email on the Planet or at what@netcom.com, or live at BMUG Saturday afternoon clinic.



Ricardo Canepa demonstrating to other volunteers.

Living with the Mac

Buyer Beware

A Cautionary Tale for Mail Order Consumers

by Kim Flom

For the BMUGers who frequently network regarding computer equipment and purchases, I have a horror story for you. Fortunately, the price I paid for my wisdom was the cost of purchasing a cashier's check and a lot of time and hassle. Briefly, this is the course of events which should send "red flags" to anyone purchasing from a mail order house.

The Search

The assignment was straightforward. Knowing the specific model of the peripheral needed, I was to find the best price. Sitting down with my list of 1-800 numbers gathered from a variety of sources, I had the system of checking availability, price, and shipping costs, down to a science. I talked with Greg, Cheryl,

Dave, and Stan among other sales representatives to collect the necessary information for the spread sheet I tracked the information on.

And then there was Shane.

Before Shane came on the line, I listened to a recording on how this company was dedicated to customer service and offered warranties that went beyond what manufacturers offered. When Shane came on the line, he explained that he worked on commission and was I really ready to purchase the item today? Answering in the affirmative, he asked me what was the best price I wanted him to match. I told him truthfully what I had been quoted in my previous twenty calls. The price was matched, shipping costs were agreed upon, credit card number recorded, and the sale was completed.

However, since I was a new customer and the company had been burned with credit card fraud, I was instructed to fax a copy of my credit card. Being slightly suspicious, I consulted with my credit card company who firmly instructed me never to fax a copy of my credit card.

The Purchase

Shane really wanted my business though, and he had an alternative for me: if I purchased a cashier's check made out to the company for the specified amount and faxed a copy of the check, the merchandise could be shipped that very day.

The hoops I would have needed to go through for this payment option were not convenient. On the other hand, this company had a respectable two page ad in *MacWorld* versus the other mail order company who had quoted me the same price but seemed less than profes-

There was a problem. I would have to send \$100.00 more in order for shipment to proceed.

sional. Besides, the concern with invalid credit cards was a plausible problem. The cashier's check was purchased, the fax sent, and the sale was final.

The Snag

The next day, my friend Shane called. There was a problem. I would have to send \$100.00 more in order for shipment to proceed. My challenge to this request led to a discussion with a man representing himself as a manager. He confirmed the additional \$100.00, and promptly hung up on me. After talking with this "manager", I suspected that if this had indeed been a credit card transaction, the \$100.00 would simply have been added on.

Hindsight shows clearer red flags to this transaction. Fortunately, a copy of the credit card was never faxed, the cashier's check was never sent and my purchase was available from another source. My credit card company was so concerned with the final request of this ques-

Since I was a new customer and the company had been burned with credit card fraud, I was instructed to fax a copy of my credit card.

tionable sales transaction that it canceled the card and issued a new number.

The Moral of the Story

Despite this experience, I continue to do business through mail order companies and appreciate the convenience and economical costs. The list of 1-800 numbers called is shorter however, with more emphasis on referrals from others based on first hand experience. I will be quicker to use the Better Business Bureau's reports—especially when eager sales agents never can quite close the sale. ☞

Another resource on this topic is 'Maddening Mail-Order', in the MacWorld December 1995 issue.

Buying Computers By Mail

The following is an article from the Council of Better Business Bureaus' webpage, <http://www.cbbb.org/cbbb>, reprinted with their permission, ©1995.

Because of competitive prices, huge selections, immediate availability, and reputable reliability, millions of consumers are now buying computers by mail. To ensure your transaction goes smoothly, the Better Business Bureau suggests you do some preliminary research on the type of equipment that would satisfy your needs and also consider the following points before buying a computer by mail.

- Contact the Better Business Bureau where the company is located to get a reliability report.
- Know what the system's specifications are. How much memory does the system have and what is the size of the hard drive. It's important to know whether the system can be upgraded. You may want to expand your capabilities later on. Ask whether there is room to add another hard drive, tape drive or CD-ROM.
- Look for both manufacturer and vendor warranties on the products you are considering, and read them carefully before you decide to buy. Also, if your method of payment is by credit card, check with your credit card company to see if they will extend the warranty since repairs may be needed after the manufacturer's warranty lapses.
- Before you order, ask if there is a "no-return" policy or a time limit on returns if the system does not meet your needs. Most companies allow 30 days to receive a full refund. Also, ask about the company's replacement policy. Usually when an item is not in stock, vendors may replace it with another brand stating in their solicitation that they "reserve the right to substitute an equivalent item." Be sure that the return policy allows you to return the system if you are unhappy with the substitution.
- If the company offers on-site service, find out who is eligible. Some companies may advertise on-site service; however, it may not be offered to everyone, or at every location. Also find out what kind of technical support is available. Many mail order vendors have 24-hour toll-free support hotlines which can be valuable.
- If you have problems with an order, first contact the company. Communicate, whenever possible in writing. Be sure to keep a record of your order and correspondence and a log of any phone conversations. If you're not satisfied with their response, you can contact your local Better Business Bureau where the company is located or your local consumer protection office.

My Life with a DOS Card

How to Serve Your PC Friends Humble Pie

by Philip Michaels

Since I was acquiring my first Mac via a full retail (sigh) purchase, I wanted both sides of my brain to be involved and in agreement. They settled on a Power Mac 6100/66... with a DOS card. The heady negotiations went like this:

Left Brain (LB): I think we need a home computer. Enough of this fiddling with clunky second hand systems.

Right Brain (RB): Buy a Mac!

LB: Well we did get snookered into building our own 486/33 last year.

RB: Buy a Mac!

LB: And I know I've made you suffer with that Mac Plus for god knows how long.

RB: Yay! A PowerPC!

And so this intrepid computer user went out to satisfy his lust for a Mac. The craving dates back to 1983, when his university was requiring them for incoming freshmen. Of course, he was a sophomore that year.

In one "swell foop" I shot from System 6.0.8 to 7.5, added that color monitor, CD-ROM player, and all the trappings that I had lived without for most of my virtual life. But I didn't stop there.

I bought the 6100 because I could get a DOS card with it. I figured the card would make things smoother for my work life. You see, I have this unfortunate habit of working for PC-based companies. Besides, I already had heaps of PC Shareware and Windows trinkets.

PC Friends Eat Humble Pie

But who wants a PC, really? Why bother going halfway with my cyber dollars? Well, I'll tell you. Nothing has worked more to humble my hard-headed PC friends into admitting the power of my new Mac than to see their favorite system run as a background task, with a few extra perks.

Here are some slices of humble pie they shared.

- *Sound.* I didn't have to go out and buy a SuperTronic Whizbang sound card. The DOS card is using the (ahem) existing Mac hardware to emulate a Soundblaster 16-bit stereo card.
- *CD-ROM player.* It's there, and it runs both platforms from either side! You know those Mac/Windows CD-ROMs? Well I can run them both from the Mac or the DOS card, whichever side I think is best. I can even change the tracks on an audio CD from either platform!
- *Floppies.* The PC side now has the advantage of the motorized Mac floppy drive! Command-E will eject my PC disks from DOS/Windows!
- *Monitor.* My Mac monitor also does double duty and is perhaps the weirdest part of this binomial reality. To see my PC applications on an Apple monitor is either a perverse truth or nightmarish reality. Luckily, I can also plug in my orphaned SVGA monitor and have two monitors side by side!
- *Keyboard/Mouse.* Okay I had to drop ten bucks for a 2-button mouse to appease the WinDemons. But don't you get it? I have two fully functional computers for the price of one!
- *Hard Drive.* I can make any number of PC partitions that do whatever I want. Nothing is more exciting than dragging an entire installation of Windows to the Trash. Ahh, revenge!
- *Serial Devices.* One modem, one printer, two CPUs! PC documents will spool through the Mac printer port if I so choose, and *no* switch box is needed for the two sides to share a modem.
- *Cut and Paste.* I can easily cut and paste between Mac and PC applications. The system can even automatically

copy clipboard contents from one side to the other if desired!

What Hath God Wrought?

I'm driving my WinFriends nuts. I can restart the PC without affecting the Mac. I can drop files on a Mac folder and have them show up instantly on the DOS side. I can allocate a scrooge-ish amount of RAM to the PC, since the Mac handles most of the stuff that would suck up a typical user's PC memory.

I can even boot the PC from a floppy while the Mac is doing anything I please!

I can boot my Mac from the CD-ROM drive! Take that Microsoft! PC users are astonished by this reality. I'm not, because Apple computers are still the best personal computers around. What I've described is the way a personal computer *should* work.

Ask your Win95 friends if they can boot from a floppy or a CD as easily as you *still* can from a Mac. They'll mumble "BIOS something" or "MSCDEX" and then try to distract you with all their new screen savers. They just don't get it!

The Final Irony

I've been around since "Real Men were DOS users" and the rest of us were hooked on Macs. I've seen and had a spate of arguments with folks from every stage of the Mac-PC Wars—from the Why-do-you-need-a-mouse?-Just-type-it-in-from-the-Command-line folks to the I-hate-clicking-on-icons crowd. And I see them rushing out to install Windows 95 and deny the very example that set them straight in the end.

The ultimate irony is that I bought a PC-compatible... from Apple.

And it's the best PC you could ever buy because it's really a *Mac* first and foremost. ☞

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Is Computerization Killing Our Libraries?

An Alert! Responsibilities and Opportunities

by Bill Hale

In *Silicon Snake Oil*, Cliff Stoll muses that once we have it all online we'll have no further need for libraries as we have known them. While he may be mixing in a fair bit of facetiousness, he also may not be too far off the mark. The Gold-Brick Road?

Surely, an "electronic library" sounds attractive at first. But behind the luster of that rosy enticement lurks a potentially heavy price tag that we, as a society, may well agree demands much closer scrutiny.

The San Francisco Public Library has charged ahead down that path. Why should San Francisco's Public Library (SFPL) system be of interest to you if you live in Berkeley, or San Diego, or Reno? First, as a primary library system, San Francisco, along with some other "major players," is charting a course which probably will influence libraries across the country. Second, for those of you who are residents of California, your state supports SFPL with funding that gives you rights and entitlements to services there. Thirdly, SFPL has funds for growth. San Francisco is fortunate in having had its populace pass special legislation to fully fund its library system. Further, it has a very industrious, dedicated, and successful staff of Rumpelstiltskins honing in on and acquiring a truly vast array of grants.

To the extent that information can be obtained online, it will be possible for libraries to dispense with increasingly costly materials acquisitions—i.e., buying periodicals, etc. The library claims that

you will have the online access. But online reference service comes with a cost—a fee. It's called "fees for service" plus document delivery.

Last August, San Francisco tentatively instituted its *LibraryExpress* "fees for service" program on a 6-month trial basis as a "pilot" program with a drop dead date in February, at which time the library commission will consider its future.

Defective Planning Process

The "problem" with the planning and approval process was that several vital issues of the program's impact were advertently ignored—little things such as the ethical implications of fee-charging for service acting as an economic barrier to information access by large segments of society. Another "problem" was the refusal to contemplate the long-term impact of this course on the collection development plan itself.

As time has marched past, I have sat back (as a computer neophyte) and watched in incredulous horror while computer user groups have failed to step forward and oversee the actions and attendant implications of the library's administration and commission. Those of you best suited to lend solid stewardship for our libraries' new directions have been absent from the process.

Costly and Unequal

The mission statement of the library is that there be "free and equal" access to information for all. But library officials,

envisioning avenues to wholesale cost-cutting and conversion to, not mere *cost recovery*, but *profit-based* operations, are now repudiating that mission commitment, watering it down to new, unilaterally invoked standards of "free and equitable" and "free and universal" access.

While there may be no "free lunches," we have agreed as a society to publicly fund our libraries. If we are now to shift to a two-tiered system, one for the haves and one for the have-nots, then we will have forsaken a fundamental ideal of this institution. Such a giant change should have a very broad-based consensus that is nowhere in sight.

Hidden Agenda

Library administration officials claim that this is all being done in the name of and for the benefit of the "business community," who have purportedly requested this "fees for service" program. However, the business community has always had access to information brokers, thus there is little if any evidence that this reasoning is bona fide. This postulation is clearly a red herring with some ulterior motive.

Before resorting to a "fees for services" paradigm shift, officials should have first completed their analysis (it is only now underway in S.F.) and determination of how their library's basic reference services should evolve (not "if"), rather than approaching the evolutionary process as being one characterized by "add-ons" and "extras" for which fees

The “problem” with the planning and approval process was that several vital issues of the program’s impact were advertently ignored—little things such as the ethical implications of fee-charging for service acting as an economic barrier to information access by large segments of society.

should be charged. Yes, the library is under attack, in part, from within.

In San Francisco, the library commission has made commitments which it never intends to keep—to insure that the services available through its basic reference service equal that which it sells through its “fees for service” arm, *LibraryExpress*. It proposes to do this through the use of *volunteers*. Unfortunately, at present it is inadequately funding the training of its own library staff while drawing on some of the best of its skilled workers for the new fee-charging department.

Your Input Is Needed

Seasoned computer users must step forward to keep us all on the right path. Stewardship is as needed by the library community as by its patrons. We are all new to the evolution of the myriad of computer, telecommunications, and information science roles within our libraries—their futures are inexorably intertwined with our own future.

In this writer’s experience, the San Francisco Public Library’s administration and policy setting commission truly do not want oversight or patron input; they truly seek to work in their own vacuum. They have been requested to outreach to user groups for input to no avail. So, we must proactively go to them. Of course, this applies to all library districts, many of which are yet another problem to be dealt with.

Simple First Steps

The first and simplest way to involve yourself is to go to the library and look over its present holdings, as well as what it has on order. SFPL’s catalog, etc., is also online (Dial-Up-Access) and can be accessed via modem at (415) 557-4450. You can access full text magazine articles if you have a library card. You can telnet in (telnet://sfpl.lib.ca.us), using “telpac” at the login prompt. On the internet, its address is <http://sfpl.lib.ca.us>.

Make computer-learning-aid purchase suggestions on all levels—books, books with disks, periodicals, videos such as *MacAcademy* and the like, CD-ROMs, and so on as you have experienced and know those works to be of quality. Equally, recommend against items which you know to be of poor quality. Request the appropriate forms from the librarians.

Bigger Steps

Have yourself added to the SFPL Commission’s mailing list for notices and agendas of meetings by calling Commission Secretary Margaret Culver at (415) 557-4233. Ask questions; go look at and review public documents; use San Francisco’s unique Sunshine Ordinance and other state laws (i.e., the Public Records Act and Brown Act) which give you access to the library’s inner workings.

This is *your* library; this is *our* library; and it should function as we collectively feel it should. If you run into stonewalls, contact the Public Access Project at (415) 921-6972, email publicaccess@igc.apc.org, or contact me.

Other Steps

Need to catch up? Drop by SFPL’s Administration Headquarters at 45 Hyde Street, corner of McAllister in San Francisco, and read through press clippings (or purchase photocopies) from Community Relations Officer Elanore Shapiro to get yourself in the picture, and/or stop in at the Library Commission Secretary’s office and browse the commission’s files.

Do note that SFPL is opening a new Main Library in mid-April. If you don’t find staff at 45 Hyde Street, they will have moved over to the new building half a block south.

Attend commission and committee meetings. Figure out what’s going on or what’s not going on—and tell us! Give everyone the benefit of your opinion and your insight. Madonna instructs us that we’re all “entitled” to her opinion. I think I’d prefer yours on these subjects.

Mark Your Calendar

February 6, is the date of the commission meeting that will reconsider the issue of “fees for service” and whether or not to give permanent life to its *LibraryExpress*. It should also be the time to truly consider the hard issues which have been previously ignored and swept under the carpet. Check with the commission secretary for the meeting time, which could change. 🦋

Bill Hale is a library activist living in San Francisco and has attended and participated in SFPL Commission meetings since the late 1980s. Contact him at (415) 995-2353 or email Holdout@glide.org for more information.

Save the Mac!

by Gregory Stapp

The greatness of the Macintosh computer can be judged in no small part by the simple fact that it exists at all. What lesser product could have survived Apple's catastrophic blunders regarding licensing, pricing, sales channels, product forecasting, lawsuits, etc.? Pundits in the industry and press, daily castigate Apple for its failures, and while some offer thoughtful insight and constructive criticism, most have hopped on the bandwagon that has been predicting the demise of Apple since the Mac's debut. After all, everyone knows that the Mac is only a toy!

What often is ignored in all this carping is the incredible success that Apple has achieved with the Macintosh. Millions of people now own Macintoshes. In fact, the success of Microsoft's imitation of the Mac OS (Windows in all its nefarious incarnations) has only validated the principles of the graphical user interface and ease-of-use that the Mac first brought to the market.

However, even the Mac's most ardent supporters candidly admit that Apple has consistently failed to fully capitalize on its opportunities and strengths. This article is not intended to rehash those past mistakes, but rather to suggest means by which Apple and the entire Macintosh Community can unite to turn the tide of history.

Actual and rumored plans for Apple's sale or merger have been rampant for years, but no one who has seen the devastating results of previous mergers in the industry and throughout the market can sanguinely predict a better future for the visionary ideals that Apple has espoused after such an event. Still, it is likely that Apple will shortly face new

bids for its acquisition and/or dismemberment.

Full-blown partnerships and a true commitment to licensing still hold great, if somewhat diluted, promise, but one need look no further than Symantec (to say nothing of Adobe or Microsoft) to see the havoc that monopolistic consolidation can wreak upon excellent products, while spin-offs can sometimes cause more problems than they solve. Perhaps Copland and Gershwin wouldn't be so far behind if Apple had kept all of the talent it released to Taligent, Kaleida, and General Magic in-house.

A general consensus was reached long ago that Apple needs to support and listen to its users, developers, information managers, and resellers so that it can properly focus its product development and sales strategies. Yet its constant reorganizations have brought only chaos, confusion, disenchantment, and an enormous exodus of talent while delays, frustration, broken promises, and incompatibilities have tarnished its release of recent products. It is time for a real, dramatic change.

It is time for Mac's actual users to change the management of Apple Computer by launching a grass-roots movement to acquire a controlling interest in the company's stock. Mac users know exactly what works and what doesn't. They are the ones who really push others to acquire or avoid purchasing products from the same company. Indeed, those who originally bought into the Macintosh dream despite its exorbitant price are the ones whose faith and recommendations allowed the Mac to succeed in the first place.

Thanks to the huge base of Macintosh owners and the tremendous communi-

cations available through the Internet, on-line services, and electronic bulletin boards, as well as the network of Macintosh User Groups, it would be relatively easy to launch such an acquisition bid. The individual cost of acquiring a share of Apple's stock in this communal endeavor would be trivial, especially at today's depressed prices.

Then when the company is not only for, but also by and of *the rest of us*, a management team can be installed that will eschew golden parachutes and obscene executive salaries in favor of an honest, responsive, innovative, and inspired leadership that rewards achievement, fosters excellence, and provides long-term benefits for its investors and customers.

In this brave new world Apple would hire rather than fire, lead rather than chase, buy rather than sell, fight rather than concede, and win (lower case!) rather than lose. Products designed to meet the needs of today and the dreams of the future would be released on time, bug-free, in sufficient quantities, and at competitive prices. Instead of hindering clone-makers, Apple would actively encourage them and together with them, it would trumpet the Macintosh advantage, in a massive advertising campaign. Soon, the Mac OS would be everywhere.

Join me now in this wonderful revolution. Buy a share of Apple's voting stock today. After all, the worst case scenario is that you'll make some money when some corporation tries to acquire Apple for itself. ☮

Gregory Stapp is an opera singer who has lugged his Macintosh Portable to his performances around the world. He can be reached via email at primobasso@aol.com.

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Through a Mac, darkly...

by Rae Montor, M. A.

The following was written, for the most part, in 1988. It languished in a file drawer until recently, when I took it out, reread it, and got scared. Very scared. So now it's your turn to read it (updated, but essentially unchanged):

"No matter what... you do, the general procedure will be the same: First you make a selection. Then you act on that selection."

Christmas. Birthdays. Psychology labs. Remember the golden early days of childhood, when all you had to do to get a cookie was point? Remember the lovely large blocks, enormous but somehow still light, that you could pick up with both hands and put *anywhere*? Remember when you couldn't read?

Apple does. And they've given you a newer, shinier, faster-moving toy than you ever dreamed of. The quote at the top of this column is from "Approaching Macintosh" by Michael Tchao, *et al.*, and it describes—you guessed it—the Mac. The newest thing to come down the pike, and the best. The future of us all. Oh?

Frankly, it worries me.

Not because it wants good eyes, fast hands, and coordination between the two, and I'm nearsighted, arthritic, and klutzy. (Although that, God knows, contributes.) Not because it's all picture and motion, and I'm a logical-verbal type. (Although that's getting close.)

No, it worries me not because of what it is, but because of what I think it may mean.

Look at our (mostly local) world for a moment. The flap of a few years ago about the "Graying of America" has all but died out. (Funny, everyone I know is still getting older.) Women are having babies at 40+ now—waiting until they're "mature enough" to have kids, waiting until they're done playing.

And late in the 80's I saw a commercial on TV for one of the new cars. It showed a young man (late 20's or early 30's), clearly a broker or perhaps even a trader, in his office and on the floor of the stock exchange, working hard at his exciting, demanding trade. But the background music was "I Won't Grow Up", from Peter Pan, and the tag line of the commercial, as the young man got into his whatever-it-was, grinning, was ap-

proximately: "You pretend to be a grown-up all day. When you get into your car, don't you want some *fun*?"

Pretend, is it?

The thing that bothers me about the Mac is not that it caters to the illiterate (well, it does, but that's not necessarily a drawback; and anyway, many folks using it, happily, are far from illiterate), it's that it's designed to evoke—and respond to—the preliterate. The mental state one automatically falls into in front of a Mac is one of childish delight: it practically supplies its own Disney dust.

So am I a crabby old sourpuss? What's wrong with delight? Not a darn thing—unless you experience it, not as an adjunct to, but in the stead of rational thought.

And I find myself increasingly concerned that that's what we, as a culture, may be doing: "experiencing" instead of contemplating; "experimenting" instead of thinking things through; "doing" instead of thinking at all. Note: "instead of" is the operative concern here. Experiencing is vital if one is to remain a viable, growing human animal; experimenting is one of the joyful necessities of a curious mind; doing makes reality.

But it can be argued that it is thought, that makes man a new species; that it is rational thought that makes civilization; and that it is compassionate thought that makes that species and that civilization worthy of existence. If there is truth in that argument, then activity without thought is awesome to contemplate.

***The mental state
one automatically
falls into in front of
a Mac is one of
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practically supplies
its own Disney dust.***

Perhaps if I show you part of what I'm looking at...

We, as a nation and a culture, have spent many years glorifying youth. The postwar era of the late 40's and early 50's saw the explosive emergence of the first "teenagers" into their new status as a valid, separate social and economic group. If you aren't old enough to remember the reaction to the young Sinatra—or even the young Presley or the Beatles—think of what happened around Kurt Cobain (the screaming, weeping pre-adolescent girls and the boys in the mosh pit). Remove the violence, and give it steroids. Remember you are, historically, dealing with hysterical idol-worship as the *only* sexual outlet for newly adolescent, determinedly virginal girls.

The 60's saw the birth of the "flower children"—not, you will note, flower people. These children soon had children of their own, frequently without benefit of formal sanctions, perhaps the first generation to do so in such a profligate manner. But they did not seem aware, for the most part, of having future people: they named their babies "Free," "Sunshine," and names that meant "world peace" in other languages, and expected their growing kids to find personal identity in cosmic labels.

The adolescents of the 70's? Well, it's been called the "Me Generation" by better heads than mine. No wonder: look which group of carefully-identified consumers—which batch of children—became older, but hardly wiser.

And then we were in the 80's. And many women of all ages subscribed to the new fashion of wearing dresses that were too big, with waists around their hips, accessorized with white ankle socks and single-strap flat shoes—looking very much like little girls playing dress up. The magazines talked about the teenage-pregnancy problem as "babies having babies." It became clear that we, as a culture, didn't consider; we didn't plan; and we didn't even seem to know how to learn how.

And now it's 1995. "Generation X" is in full swing, and everyone knows what "slacker" means. For many young people, even the meaning of "planning" has become barren: they don't think it works—possibly, at least in part, because they've rarely seen it in action at all.

For many young people, even the meaning of "planning" has become barren: they don't think it works—possibly, at least in part, because they've rarely seen it in action at all.

We, as a society, have less and less impulse control: we have enormous drug problems; we have murder-for-running-shoes in alleyways and fist-fights for no reason at all in traffic jams; we have garbage in our oceans and our air on a scale that would have been unthinkable a century ago; and we have a national debt that would be just fine if the world blew up next Tuesday, and under no other circumstances.

We have an attention span ideal only in a two-year-old (or in a regular watcher of tabloid TV and crisis-laden talk shows); all it takes is a sensational new headline to completely wipe out our memory of—or concern for—people who can't afford to pay high prices for their television or other art forms, education from a national perspective, the need for available medical care, endangered species, or even the state of our own environment. And that doesn't even count the *fait accompli* disappearance of the Congressional Office of Technology Assessment (which, I'll wager, most people didn't even know was there in the first

place, although it was the premier futurist organization in the country).

We have a literacy rate so low that it is a shame among nations. (Literacy, one must remember, takes a certain kind of non-impulsive thought to learn, and someone with perseverance and an awareness of consequence to teach.) We have a throw-away society (objects and people both, so sadly interchangeable). We have even had a presidential campaign that frightened us with the notion of "hard choices"—at a time when all we seemed to be equipped to choose from was whether we wanted a BMW or a Hyundai.

There are lots of theories, from lots of disciplines, about WHY this is the case: hopelessness and lack of belief in the future in the face of The Bomb, alienation due to Depression-generated over-mobility of populations, war-caused break-up of the nuclear family, just for starters. But whatever the causes, the fact is plain: we aren't growing up much anymore.

Of course there are individual exceptions—probably lots of them. For which I thank Whomever it is appropriate to thank. But what I'm looking at here is the culture as a whole: what shows most, what's loudest, what pushes hardest against the fabric of our civilized history.

And it is into this world, into this place where mature, adult, compassionate, considered, rational thought is so desperately needed, and is at such a premium, that there comes yet another toy that has the potential to shorten even further the supply of that thought. And this toy is perhaps more insidious, in that you need to learn to play with it: you need to retrain and realign whatever kind of abstract thought you were using (linear or stochastic, overview or detail-oriented) in order to be able to use it at all.

And it's a work tool. It's a good work tool, so you should use it. And it's fun, so you can enjoy your work. But what work are we doing? And for whom?

I was told the other evening that the specters of Government Specs have a new comper: that, in some departments, the people reading the proposals are in their 30's and 40's, products of the TV generation, "therefore" (therefore?!) needing

pictures. Which the technical writer who was speaking produced, of course.

What does this say about who's minding the store? What does it mean about their analytical capabilities (you can put only so much complexity into a bar chart, after all). How do they study history? (Do they study history? Or will we all repeat it?)

Please, please note: I am not equating visual intelligence, or creativity, or even preference for good graphics with childishness. I am not that foolish: I know far too many brilliant visual types, many of them talented artists one way and another, whose maturity and adult perceptions have long since earned my profound respect and awed admiration.

What I am saying is that in a world rife with impulse disorders, with personal lives so often perceived as dissociated from societal consequence, with children frequently having no one but older children to guide them, I wish there were something thoughtful to celebrate: something rewarding temporal awareness and complex, considered, word-oriented thought. I wish there were something that reached beyond the grasp of the bright-eyed, eager two-year-old who points and says "Do that!" I wish there were something both literate and accessible, as lovable and as downright seductive as this charming, impulse-effectuating, non-rational, non-literate wonderpoke.

It's not really the Mac, folks. I don't blame Apple for the state of the world. I even, personally, rather like the more-or-less boxy surprise package with its mouse-with-tail-on-wrong-end.

Perhaps I'm just being reactionary. And I do, after all, consider it altogether possible that spatial awareness, kinesthetic responsiveness, and direct perception will guide our futures to far, far better places. I may turn out to be historically incorrect for holding literate thought in such esteem; perhaps non-literate thought is as good as literate, and may in fact, be capable of a darn sight more compassion.

What I *do* know, though, is that they *are* different—and that the wholesale application of the non-literate, through unconscious but very real choice, will make our world different. And that's a consequence I'd like us to look at while we still can.

I spoke, earlier, of "what I think the Mac may mean". Look: I know it's a physical psychic device—that is, I'm aware that it is a maker of miracles, a joyous freedom for the creative, and a responsive tool for the easy implementation of dreams. And I'm certainly not saying that DOS or UNIX are any better marvels. I do think, though, that learning a language—any language, however idiotic and arbitrary—is different from not learning one: it uses different parts of the brain to perform different operations; the mental gears turn in that same old literate way. The Mac brings freedom—but look steady at what you're being freed from.

...perhaps non-literate thought is as good as literate, and may in fact, be capable of a darn sight more compassion.

It is no coincidence that in any serious discussion of the nature of computers, their architecture always becomes central to the conversation. What is built—and how, and why—is, with computers as well as with buildings, a function of architecture: of form following function, of utility and art merging toward a single end. And it is from this point of view that the present situation can most easily be seen.

Toward the end of the last century, architects were feverish to break free from the clutter and detail of the Victorian style: they dreamed of—and began to build—soaring, open, graceful spaces, with long, clean lines and enormous amounts of light.

They argued that the buildings of the future should be glass and featureless, to mirror the wishes of the dreamers they believed men to be. (And we know, now, that when all buildings are mirrors, they mirror only each other—the dreamers become starved, and the dreams often become sterile.)

Architects, then, believed people should be able to come to those new buildings seeking inspiration and information, without pre-conceived patterns to supply needless constraints. They believed that the clutter and detail of the old buildings distracted and irritated.

They assumed interior richness would continue; they did not know, as psychologists, neurologists, and educators do now, that richness of detail in the environment does not distract—it feeds and strengthens. They did not know that without a cluttered, loud, full environment, the mind develops more slowly and less well. They were not aware that the curls and lines, faces and details, colors and crannies of their beautifully disorganized buildings provided cloud-shapes, perhaps, for their imaginations to build on. They did not remember that it is the irritant that produces the pearl. They did not guess that what irritates the mind to search for a better way can produce wonder. The Mac is indeed a wonder: a Transition Machine, planting its iconic flag in the soil of a brave, very new world. I do see that it represents and requires a fundamentally new way to think, with a remarkable freedom of ways to act on thought. And I know, too, that it does not solely shape us: it reflects us.

But that's my point. What it shows, through a fun house mirror, darkly, is a society over-run with impulsive children, all desire and motion, all reach and no grasp, all determination and no thought.

And I wonder to what extent that admittedly twisted view is correct; to what extent this little magic box is a reflection of things to come.

And I'm worried. ☹

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(Almost) All I Need to Know About Macs I Learned From BMUG

by Carol Haberberger

Old-fashioned volunteerism is alive and well on the Planet. There is more help available than I've ever believed possible—via email, the BBS, afternoon clinics, main meetings, SIG groups.... Everyone, even the techies, gets stuck once in a while, so I'm in good company. Before calling "Help!", I should zap my PRAM and rebuild my desktop. CYA¹ and KISS². Lost documents can often be recovered, but I should have *backed them up*. My modem is my lifeline, connecting me to the Planet and beyond. There will never be enough time for me to explore all the folders on the Planet. Everyone's a winner on the Planet, but stay until the end of the main meetings and you can win tangible stuff, too. Shareware can be better than commercial stuff—just look at DiskDup+, for instance. The BMUG semi-annual newsletter puts *the New Yorker* and *Cosmo* to shame. I can spend more on technological gizmos than on anything I've ever bought before. (But members get such great specials, via User Group sales, special offers, and other inducements!) No matter how much RAM and ROM I have, it will never be enough. Equipment gets outdated faster than milk does. Fonts can be fun, forget the message. If the Planet isn't enough for you, there's always the Internet to tool around in. BMUG really is...out of this world! ☾

¹CYA = Cover Your A...

²KISS = Keep It Simple Stupid

More on this in the Online Lingo to the right.

Online Lingo

A partial list of alphabetic and symbolic shortcuts to communicating online.

found on the Planet by chris harris

ADN	Any day now	:-)	Smiling, happy face; don't take me too seriously
CU	See You		
FOAF	Friend Of A Friend	B-)	Above, but poster wears glasses or sunglasses
FWIW	For What It's Worth	8-)	Same as previous; also used to denote wide-eyed look
GA	Go Ahead		
GIWIST	Gee, I Wish I'd Said That	#:-)	:-) done by someone with sort of matted hair
GD&R	Grinning, ducking & running	:-(Sad or angry face
GROK	As in "I GROK" means thorough understanding. From R.A. Heinlin)	@=	Flame about nuclear war, power or weapons follows (mushroom cloud)
HHOK	Ha Ha Only Kidding	;-)	Winking happy face (something said tongue-in-cheek)
IC	I See	:-P	Tongue stuck out
IMHO	In My Humble Opinion	:-b	Same as previous
IMNSHO	In My Not So Humble Opinion	:-o	"Oh, noooooo!" (a la Mr. Bill)
L8R	Later	#:-o	Same as previous
LOL	Laughing Out Loud	(:-)	Messages dealing with bicycle helmets
O & O	Over & Out		
OTOH	On The Other Hand	<:-)	Dumb questions
ROTFL	Rolling On The Floor Laughing	oo	"Somebody's head-lights are on" messages
RSN	Real Soon Now	;-)	Wink (take this message with a grain of salt)
TANJ	There Ain't No Justice	-)	Late night messages
TPTB	The Powers That Be	:-^)	Messages teasing people about their noses
TTBOMK	To The Best Of My Knowledge	:-{#}	Messages teasing people about their braces
TTUL or T2UL	Talk To You Later		
WAWA	Whatever It Was	*:*	Message about fuzzy things

BMUG Meets MicroTimes

Number 14

by David Morgenstern

When We Begin the Beginning

The great medieval philosopher Bahya Ibn Paquda (1050–1120) said, “Knowledge: A little light expels much darkness.” This is one of the things that BMUG stresses—the sharing of information.

No matter how easy the Mac is to set up and use, under the skin, it is like any other computer, and a very complex device. Some people have problems with “the simplest tasks,” while others are stumped by the most ticklish of programming codes. It’s all the same to BMUG.

Unlike some other groups, which seek to pump up the egos of certain leaders, BMUGers have always prized the person who offers a good idea, no matter their age, place in the group, or corporate affiliation. It’s not just how much someone has done, rather it’s how much you want to give to others.

BMUG members are encouraged to share information and experiences through participation at meetings, talking to people on the Helpline, and working on our publications. Whether they are the most powerful of power users, or newbies just beginning to use their Macs, volunteering as well as our membership bucks provide the means for us all to help and support each other with the Macintosh.

This is the energy and spirit that have made the weekly Thursday night BMUG meetings the crossroads of the Macintosh world, the knowledge and rumor center par excellence. Thus it was

only natural for a computer magazine to look to BMUG for good Mac information and tips.

In 1988, Mary Eisenhart, the editor of *MicroTimes*, California’s computer magazine, approached BMUG for a monthly column. The proposed column would combine discussion from meetings, Helpline experiences, and hot tips. This was a terrific opportunity to reach members and non-members in between Newsletters. Remember that at the time, the BMUG Bulletin Board was only a single line, making it difficult for us to reach members outside the San Francisco Bay Area. But who was naive enough to be sweet-talked into volunteering?

Hello! I had just completed a couple of lengthy Newsletter exposé articles covering the Microsoft Word 3.0 disaster and the newfangled practice of selling developmental “beta” software. Unlike the usual software review, or hardware article, these investigative stories had the semblance of mainstream journalistic practice.

I was persuaded that the column would be “a piece of cake,” and all I would have to do is write out verbatim the question-and-answer session of the weekly BMUG meeting, and explain the problems encountered on the Helpline. “It’ll only take a couple of hours to write,” was a key selling point.

Ha!

Seven years later, BMUG and the column are still going strong. I now work at MacWEEK and couldn’t be happier. Unfortunately, I have less time to hang

out at BMUG, but I can always be found online and at BMUG West meetings. Long live BMUG and the Macintosh!

This article consists of the last half year’s BMUG columns from *MicroTimes*. I’m afraid that some bytes and pieces will be passe and old hat to some of you. Sorry about that, but we all know how quickly the Macintosh scene can change.

If you’re considering forking out hard earned money for a Mac-something or other, please check if there’s a BMUG take on the product. Look in the Choice Products section of the Newsletter, ask a question at a meeting, or post it on Planet BMUG. There are also excellent deals from the User Group Connection for new

MicroTimes, BAM Publications, Inc., 3470 Buskirk Avenue, Pleasant Hill, CA 94523. www.microtimes.com. 14 Issues, US: 1st Class \$65, and 4th Class \$35. Overseas Surface \$50 (6-10 weeks). Sample issues are available for \$5 (\$6 overseas) to cover postage and handling.

Observant California-based readers may notice that the actual dates may be off a byte. Since the magazine is often published at the end of the month, it covers the following month.

and refurbished equipment for BMUG members.

And you don't actually have to move kit and caboodle to the Bay Area to receive the benefit of BMUG's collective wisdom. We're fortunate to live in the age of telecommunications, where a guru is just a phone call away. BMUG is trying to expand our online presence from the Planet to electronic services as well as the World-Wide Web over the Internet.

But learning will only come to you if you will open yourself to the opportunity. Please join the virtual or physical discussion, and ask a question. There's an old rabbinic saying that addresses this: "Learning is not obtained by the bashful."

It is a great privilege to write under the BMUG banner. The helping and giving that flows daily from our staff and volunteers is the embodiment of the spirit of computing. Computers are not just machines. They are the synergistic combination of silicon and biological memories. They can be a force for positive change, and BMUG needs the support of members and the developer community to keep up our good work.

I've been fortunate to be able to bend the ears of the best Mac virtuosos in the business—residents of the BMUG peanut gallery. I thank the many BMUGers that have sent me personal stories and tips for the column—please keep them coming.

My special thanks to: Scott Beamer, Raines Cohen, Lorca Hanns, Ron Hipshman, Stephen Howard, Art Lau, Peter Linde, Robert Lettieri, Leonard Rosenthal, Tom Santos, and David Schwartz.

July

Remember those great days in kindergarten? You'd bring something really really great from home to class for a show-and-tell presentation. I recollect that once I brought in a dried puffer fish I bought with my allowance at the aquarium. Unfortunately, my show wasn't too well received, since the fish was in its non-puffy state. "It expands, I promise," I explained! Kids are cruel and I bet that none had ever seen a dried fish of any type, exotic or edible.

These childhood experiences are the first step on the pot-holed path leading

to the weekly product demonstrations and lectures offered every week at BMUG meetings. And just as the audience and presenters have had some let-downs early on, they are prepared for the screw ups that always seem to make their appearance. "It worked back at the office, I swear!"

The demos flew hot and heavy in May during the annual Apple Worldwide Developer Conference held in San Jose. In addition to a preview of new second-generation PowerPC models, the code-meisters got the skinny on the changes due for the Mac operating system.

Coping with the Future

If there's a secretive company in Cupertino, it's Apple. They are nuts about keeping their cards close to the vest. At hard-headed industry pow-wows I've listened to many Apple project managers and marketing gurus talk around in circles around unreleased products and technologies.

I remember sitting next to a young and naive hardware engineer from a big-player company at a recent conference. After listening to an Apple project manager speak in the stratosphere about several topics on a panel discussion, the fellow attendee turned to me and asked if anything had really been said. Of course it had, I answered, but it required the ultra-sensitive ear of a BMUGer to catch the nuances of expression hidden in the non-disclosure-agreement-speak.

Given its closed-door call-out-the-FBI-mentality, why was Apple unveiling Copland, its next version of the Mac operating system, to the press and public in May? Could it have any small byte to do with the release later this summer of Windows 95? Do you think so?

Unlike Microsoft's latest, Copland is expected to come out sometime next year. According to Apple, the new systemware will run everything better, faster, and cooler. Sounds like fun!

The new OS will require big changes in the basic structure of programs, and will signal a break with the old Mac architecture that found its genesis in the original 128k beauty. If you have a Mac model that does not use a PowerPC RISC processor, then don't count on riding the Copland train. The first generation of Power Macs were designed to be very

compatible with older software, but the forthcoming flavors will be more picky.

Apple said the new software will let Macs run faster and with greater stability. It will use a new PowerPC-native microkernel, or core, that will let it use memory more efficiently and let programs handle large files more safely. Programs will load into memory only what they need at a given point in little chunks instead of requiring the whole kit and caboodle at once.

If you've ever been to a cocktail party with a bunch of PC and workstation geeks then you know the derision surrounding the Macs lack of "protected memory" and "true multitasking." This will change somewhat with Copland, so we can hold our heads up high and meet them sneer for sneer.

The new software will use preemptive multitasking for some low-level processes, such as the file system, storage and serial input and output, and extensions. Applications will use the current cooperative multitasking model, but in Gershwin, the system revision beyond next-year's Copland, the Mac will reportedly get the entire package.

Copland will also let applications create protected processes that won't be touched if an application crashes (programmers will have to add a bit of special code to enable this feature). This means you won't have to worry about interruptions when printing very large files or doing some computation-intensive image filtering.

All of this and more will be appreciated by users, but Apple has not forgotten its primary call to fame—user interface and ease of use!

Making an Appearance

One of the important principles of Mac user interface design similar to the claim of the runner-up hamburger shop—you can have it your way. Users are not confined to one set of actions or commands to initiate an action; you can select a command from a menu, use a key-combination, script a set of actions or click a button. But we ain't seen nothing yet!

Copland will provide Custom Workspaces, which will bring greater control for users over what their environment looks like. It's much more than

the small changes that are available today from extensions and Finder hacks with ResEdit—you will be able to change the colors and shapes of almost every interface element, from windows to menus and from buttons to sounds. Icons and items can be animated and tied to different actions. Hopefully each user can have a computing experience that is closer to their own personality and personal preferences.

Apple and third-party developers will create designer combinations of elements, called themes. To change a theme you can just put a settings file into the System Folder. Some will be slanted toward the needs of new users, others to children. One of the themes will make a new Mac run like an old-fashioned one. Copland will come with one that looks a lot like the At Ease program, which is handed out with the Performa models.

We saw a horrible black and silver, super-high-tech theme that turned the Menu bar into awful black buttons. It must have been designed by a Raiders football fan (Bay Area fans have never gotten over the move of the Oakland team to Los Angeles). I did like a Memphis-like style that had different shapes and multiple colors on each side of a window.

The new user interface elements will not be confined to the Finder, but will be spread across all applications. When you're in a program, then all windows will be still be thematic.

Custom workspaces will really help out situations where Macs are used by more than one person, which are most desktops in homes, schools, and small businesses. Even better, it will be possible to switch to different workspaces without restarting. The changes will not just be confined to appearance, but will also control which extensions will be loaded, so that appearance and function are customizable.

My wife recently started to use the computer after many years of simply looking at the Mac as a piece of industrial design or furniture. She is a very techno-phobic person and doesn't care for most "new" technologies, such as the VCR, automatic bank tellers, and the telephone. Helping her has been a good exercise in patience—both hers and mine.

But as the most senior user of the machine, my set of preferences for our Desktop are the ones put in place on our Mac. The aliases sitting on the Desktop, screen saver, and Apple Menu selections are all designed to fit my computing style, not that of my newbie wife or semi-power-user daughter. It would be great to simplify the Desktop for my wife, who uses only a couple of programs; and I would avoid having to re-adjust all of my carefully positioned icons on the Desktop after an accidental slip of the mouse.

Even better, when launching Copland, it will ask the user to select a user account tied to the system-level PowerTalk password. This will let the users of a machine to automatically get their individual electronic mail or even send mail to other users on a single machine.

Find Every Mountain

There are additional elements that will be added to the new Copland Finder. Here are a few of them:

- Apple said it will move up from Apple Guide, introduced in System 7.5, to an "assistant" technology. The current guides help users to do things by showing them what, where, and when to click. The future assistants will step up from the not-so-simple act of showing how-to do the actual doing of operations.
- Users will also be able to create scripts for the OS to perform at regular intervals. You might set up the assistant to check your electronic mail inbox or back up your hard drive. The actions are not just one-program and one-action kinds, but can involve multiple applications and processes.
- Windows will be shrinkable into Drawers, or pop-up window tabs, that will stay at the bottom of your display. The drawers will not be confined to the Finder, but will be available for access across other applications. This is conceptually an extension of the functionality found in the Control Strip control panel, which is currently found on PowerBooks. Control Strip is a little tab on the side of the Mac screen that pulls

out to reveal a palette of icons and pop-up menus.

- Users will see new spring-loaded folders that will help users navigate a series of folders on a drive. When pausing over a folder in the middle of a drag, the hierarchy of folders will automatically pop up for the user to see inside. Also the new Finder will let people work and move around in the Finder while copying multiple files.
- BMUGers have frequently heaped abuse on the current Open and Save dialog boxes. They really don't show enough information or conveniently let you maneuver around a packed hard drive or server. Copland will take some of the heat off of the poor dialog programmers.
- The boxes will sport panes giving a snapshot of the total disk hierarchy. Users will be able to sort and filter the views by type and other kinds of Get Info fields. There will also be a little pop-up list (a la Boomerang and Shortcut) that will give frequently accessed files.

There's a lot more to look forward to in Copland. Can we wait? Do we have a choice? Hello!

Bytes and Pieces

Here are a few little items that crossed my desktop recently:

- Heard at the Developers Conference, "Let's double-click down into this topic." The translation from geek to English, "Let's examine this more closely." Frightening.
- If you're into Japanese and running the Japanese Language Kit, check out Version 1.2, released in May. The software lets users input and edit documents with Japanese text as well as Roman-style scripts. The new version is compatible with System 7.5, adds new GX fonts and the latest edition of Kotoeri, the Japanese Input Method.
- One of the new extensions recently added to the System Folder is Stickies, which lets you write little Post-it-style notes and "stick" them on the Desktop. It also has a great secret trick.

- Make a new note, type in the word “Antler!” If you aren’t running System 7.5, you can see the results in the image shown in Figure 1.

Shareware Spotlight

Some people running the latest System Software Update (detailed in last month’s column) have complained that they’ve had problems with their parameter RAM and Desktop settings. The parameter RAM is a little piece of memory in the clock chip on the motherboard that holds most of the primary control panel settings such as keyboard, mouse, time, and date.

It’s backed up by a battery that needs changing every few years, so if you’ve never changed the battery and have an older Mac model, you might want to replace the battery. If your Mac starts applying odd dates to files, this is likely the culprit.

To reset the settings back to factory defaults, you hold down the Command, Option, P and R keys while turning on the Mac. However, MicroMat Computer Systems has a Freeware utility called TechTool 1.06 that gives an easier way to zap the PRAM. It lets you just click a single button.

Even better, the program lets you save the PRAM settings to a file before you clean house and then restore them afterwards. This can save you from opening all of the control panels one by one.

TechTool also kills the invisible Desktop DB and DF files and then automatically invokes the Finder to rebuild them. It also details all kinds of low-level system and hardware information that you can print out for the inevitable call to technical support when some very bad problem occurs.

The utility is available on most electronic services and Planet BMUG, our membership bulletin board service (BBS).

August

It’s a moribund time in the Macintosh world; we’re on hold and stuck between innings, waiting for the Boston Macworld Expo. The crowds at the weekly BMUG main meetings are anxious for the flood of new Mac models and low-cost clones expected to cook up performance in the late summer sun. And there’s always plenty of speculation even

among the Mac faithful over the denouement of the almost year-long hype of Windows 95. Sigh.

But do BMUGers kick back, hang up their PowerBooks and pull down a few cool ones? No way. It’s only at the après-meeting dinners, in the questionable glow one experiences after several product demonstrations, that we ever let our hair down (those who can) and reflect on the state of really important matters—the coolest characters on Star Trek Next Generation spin-offs and the execrable representations of computer technology in the summer’s science-fiction movies.

This month we will take a peek at some odd media happenings, check out the goings-on at the Mac hackers convention and get a rundown on some interesting software. Onward.

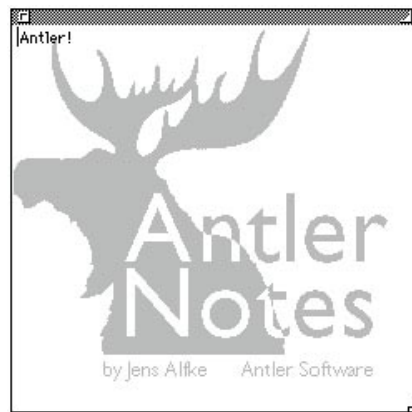


Figure 1

A Window on the Mac

I have commented in the past on how old habits are hard to break, for life in general as well as in the computer industry. It’s tough to look at our beliefs and actions and then actually change longtime patterns of behavior.

Routines and rituals are a good thing for the most part. I check both ways before crossing the street. I always lock the driver’s-side door with the key, so I won’t lock the key inside the car. I save my work after every few sentences just in case there’s an unexpected power outage (caused by my foot pulling the plug out from the wall as I fall off my chair to grab the cat). These are all extremely good and prudent habits.

But the same can not be said for the hard-working crew of computer journalists, corporate-information technocrats and superstore salespersons who have ignored the Macintosh for the past ten years.

After giving it a look-see in 1984 or ‘85, they put the Mac into the it-will-never-fly category and have never revisited it since. If someone asks them the most fundamental question—which computer should I buy—they are steered to a flavor of Intel-based PC running Microsoft Windows. What else is there, they say?

This situation has always been emotionally tough on BMUGers. We give our good counsel to acquaintances, friends and family, only to see them swayed by the momentum of the Intel/Microsoft bandwagon, the questionable wisdom of “real” experts and the rock-bottom prices of entry-level machines. We sigh and say a little prayer for them. They will need it.

But in the past few months, in the middle of the Windows ‘95 love-fest, a very odd series of unconnected occurrences has made the earth shake for Macintosh aficionados. Industry mavens are actually taking a look at the real life of users and writing about this process. Could they have been infected by the BMUG spirit, or read our newsletter? It could happen. Or perhaps they got tired of answering the ever-rising number of calls the personal technological-support line from their family and friends.

Here are a few of their comments:

- In the *San Francisco Examiner* last June 28, Scott Rosenberg wrote a long article recommending the Mac to new users. He described his efforts to play Windows CD-ROM titles and said, “Last week I sat down at a PC to review the hot new “Johnny Mnemonic” CD-ROM game. It took an hour of head-scratching on the part of two experienced computer journalists to get the thing properly installed—and once it started, it refused to proceed past the end of the first scene.

But then, I never did get “Myst” to work until I got a version to play on my Macintosh.”

- Earlier in the same month, an article in the Personal Technology section of the *Seattle Sunday Times* came to a similar conclusion. Remember that this is the heart of darkest Microsoft territory!

“Which computer do I recommend? I think you should get the same kind of computer that your most technically astute friend uses; a friend you can call at midnight on Sunday when you really get stuck. If you buy a Mac, you won’t need an expert, since you won’t get stuck nearly as often. And if you don’t have a technical friend, you will be much better off with a Mac—with some exceptions that I will discuss later.

Which is easier to use? Is the Mac really that much easier to use? Consider this: One quarter of all the questions that Patrick Marshall has answered in his Q&A column in *The Seattle Times* deals with PC problems that never occur on a Macintosh. ...”

- An astounding article in the June issue of *Windows User* was written by Sean Geer, with the title, “Mac The Nice.” Geer had a call from a friend asking for some help fixing a computer. Thinking he would greet a Windows system, he instead found a new Power Mac waiting. No problem. Or not much of a problem.

Although Geer is familiar with the Mac, he admitted that “anything newer than a IIfx running System 6 is something of a mystery to me.” And in the process of helping his friend he “discovered some pretty astonishing things.”

“I shan’t trouble you with the precise details of this adventure, but I can tell you that Macintoshes (even Power versions) are prone to the same sorts of system crashes that appear so regularly on PCs, and that their causes appear to be much the same. I can also tell you that Macintoshes are capable of booting from a CD-ROM drive. I can exclusively reveal that reinstalling the Macintosh System 7.5 operating system is an almost surreally pleasurable thing to do.

And, finally, I can tell you that the Macintosh user interface is a thing of great beauty—truly Apple’s Esmerelda to Microsoft’s hunchback.”

Am I dreaming, or in the *Twilight Zone*? These transmissions from out of the blue are too good to be true! But what is going on here? Could this be the beginnings of a trend?

Maybe so. I suggest that the Now Generation has finally discovered the computer and found it wanting.

New users nowadays are not content to simply crank up the word processor and scratch-off a letter to grandma, or begin their life’s work on a spreadsheet from hell. They have seen Paris on the big screen, in school and on the tube, they are not willing to begin their computer journey back at the farm. They want to get out surfing on the Internet. Now. They want to check out their cousin’s World-wide Web page, and crank up the multimedia CD-ROM player. Now. They want to blast some digital video, instead of “simple” sound and graphics. Now.

Your run-of-the-mill PC can’t give you all of this without a considerable level of pain. Some say pain and stress is a growth process. But it tends to be an experience that is shared with the owner of a system and their best friend, co-worker, neighbor or relative that knows anything about computers. Mac users have problems too, but they are usually less painful and more easily shared. That’s why BMUG is so much fun—there’s a lot of sharing of information.

Unlike the Mac, flavors of computers that run Intel-compatible chips have come lately to user issues. PC machines have stressed speed and performance, but have lagged behind the Mac in ease of use. The Macintosh began its life with a foundation of hardware and software integration, graphical user interface and quick setup. The early Macs came with a single short manual and an audio tape to help with the setup. The cassette wasn’t really necessary to get going with the system, but it reassured some new users that thought there should be more. Where’s the beef, er—manuals?

Apple has over the years added many important technologies that ship standard with the Macintosh, such as SCSI, built-in LocalTalk networking, QuickTime dig-

ital video, and speech-to-text conversion; the latest addition is QuickTime 3D, a system-level way of handling three-dimensional graphics. But all of these goodies rest on the great total system that is Macintosh.

BMUGers are happy for Windows users; there are a lot of great features in Windows ‘95. But it ain’t a Mac. Perhaps the “rediscovery” of the Mac by PC devotees will steer some lucky new users over to the Mac side of the aisle.

Make My Hack

Every year the brightest Mac programmers from around the world gather together in Ann Arbor, Mich., for MacHack, a week of summer hacking and all around Mac-lovefest. The conference is a great place for Apple system engineers, third-party developers and freelance code-slingers to shoot the breeze, get some answers and create some software on the spot during all-night group programming sessions. There is usually a contingent of members from BMUG’s programming Special Interest Group in attendance.

The Best Hacks programming contest is the highlight of the event. Programs written before the conference as well as during are shown and judged. Some of the better hacks make their way into Shareware and even commercial products afterward.

Some of the hacks are gags or fakes, such as a Nerf crossbow controller application. But here are a few of the better offerings:

- Greg Landweber, the author of the Greg’s Buttons desktop customizer, unveiled a couple of interesting programs. Aaron 1.0 is an extension that gives you the buttons, folders and windows found in the forthcoming Copland operating system. You can see the before and after in Figure 2 and Figure 3, respectively.

Greg’s Hack was another interesting extension that performs anti-aliasing routines to text displayed on the screen. Anti-aliasing uses shades of gray to slightly blur the hard edges of PostScript or TrueType fonts, which reduces the jaggies, and makes small text easier to read and smoothes large text.

Unfortunately, the anti-aliased fonts have a different line-spacing than plain fonts. Greg said that text may appear in the wrong position, and word processors may misplace the insertion point. Good printer output or glasses? Take your pick!

- BMUG's own Leonard Rosenthal and Victor Tan wrote CyberFinder, which lets you create a new type of Finder alias pointing to an Internet Web page or ftp site. You hold down the Shift key and the New Folder command becomes a New URL (Universal Resource Location) command that creates a new kind of Internet resource document. When you double-click on the URL alias, your Web browser, or ftp client software launches and you're connected.

The CyberFinder URL files work just like Finder aliases, and you can change them with the Get Info command, or rename them. Each type of URL is given a particular icon so you can eyeball its type, but as with a normal alias, you can always paste another icon over it.

- Don Brown of CE Software lifted an idea from Windows '95 in NewStuff. Like CyberFinder, NewStuff also alters the New Folder menu item. It adds a New Item command, with a hierarchical menu that lists documents of different types. It's easy to add extra templates by placing them in a folder in the System.

Bytes and Pieces

Here are some of the latest comings and goings in the Mac world this month:

- From the RTFM (read the f@#&in' manual) file. Reportedly overheard at MacHack: "Call a ReadMe file 'Power Users' and everyone will read it. But name it just 'Read Me,' and no one will."
- Don't call it a seedy ROM. The CD-ROM Setup 5.1.1 update, released in July, is required for use with the 600e, Apple's new 4X-speed CD-ROM drive. But it also adds support for multi-session discs and a new flavor of audio CDs called CD Plus or Enhanced CDs. The Plus and Enhanced discs are start-

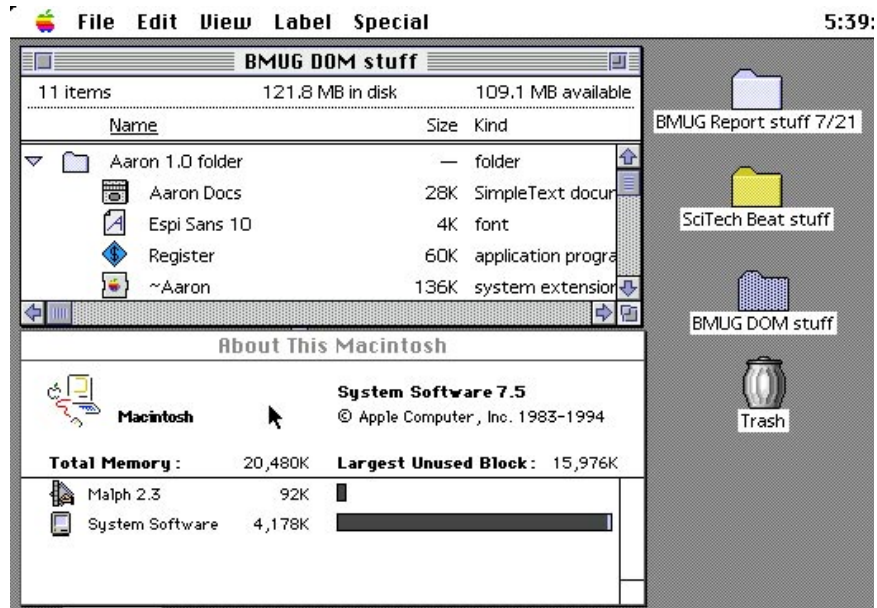


Figure 2. Before Aaron.

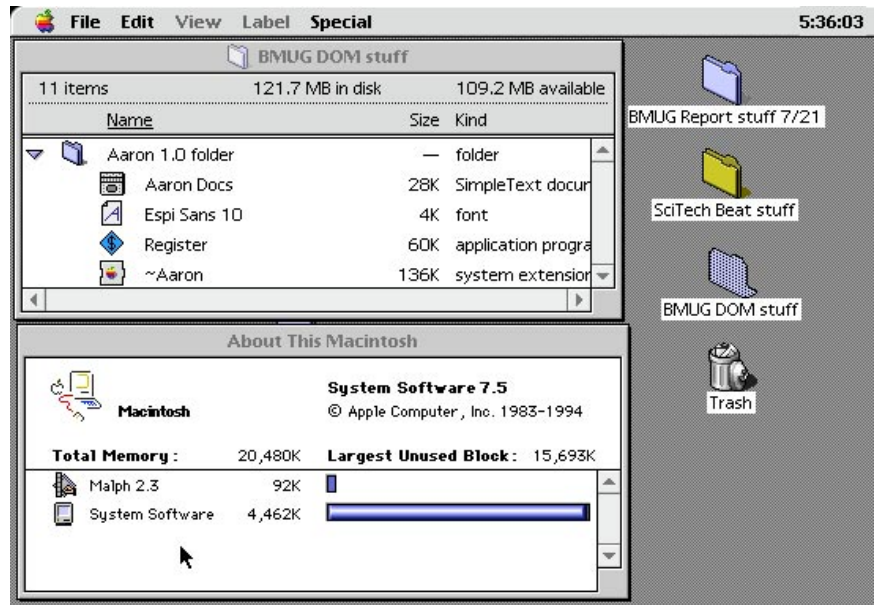


Figure 3. After Aaron.

- ing to make the scene and they can include computer data, such as a QuickTime video, liner notes or lyrics along with the regular audio tracks, like their larger laser disc cousins. Very cool.
- It's a stretch department. The latest Performa models were highlighted at a big bash in New York City that showed off the latest Macs, Internet and eWorld sites, multimedia games, and educational software. The bash was led by hip performance artist, Laurie Anderson.

Am I the only person that finds Anderson's connection with this particular lineup a bit strained? I can see the multimedia link and the Internet, but she certainly doesn't spring to my mind when I hear the phrase "children's educational software!" Hello!

- Not-butt-headed composer. After the problems with the Carl Sagan code-named hardware, Apple legal has reportedly been telling employees not to say that the future Copland operating system is named the fa-

mous American composer, Aaron Copland. There's an old Jewish saying that says, "With a lie, only children can be rocked to sleep." So perhaps only the very, very young of heart will be persuaded with legal's Copland line, since the other recent OS releases were code-named Mozart, Beethoven and Gershwin.

September

This month we take a hard, cold look at the hot goings-on at August's Boston Macworld Expo. Steaming like dim-sum in the East Coast humidity, the 60,000+ attendees found the semi-annual show a Macintosh love-fest. Actually, the weather was great—considering that a killer heat wave had rolled into the Northeast several weeks before the Expo. It made the usual hot weather during the show almost seem like a trip to the North Pole.

If only every Mac user could make a pilgrimage to the actual crossroads of the Mac world, the BMUG main meeting, they'd find an Expo-style experience every week!

Exponentially Great

In bygone years, the combination of high heat and high humidity have frequently taken some of the starch out of Expo attendees. But at this year's show, spirits were especially high, even in the face of the relentless and unavoidable hype surrounding Windows 95.

Last year particularly, I felt a byte of malaise had crept over both the crowds and the vendors hawking their products. The first-generation of Power Macs had just shipped, which was great news, but there seemed to be concerns over the viability of the Mac and Apple.

This year, in the face of P.T. Barnum-level Windows publicity, the Mac community took a good look at itself in the mirror and liked what it saw—screaming new PCI Power Macs, an aggressive clone market and lots of fantastic products. The Mac platform is alive and kicking!

Attendees tolerated with smiles even, the sly harassment of a clown at the Power Industries booth; he was a real clown, not a run-of-the-mill marketing type. He was shilling the company's Math Circus program and magically persuaded suit-and-

tie business execs into wearing elaborate balloon hats. They could be seen for blocks walking around the Expo.

The new lineup of PCI Macs, the Power Macintosh 7200, 7500, 8500 were of primary interest to the crowds at the Expo. The PCI models were such a big draw that they changed attendance patterns of the show.

The summer Expo is divided between two venues, the main hall at the World Trade Center near downtown Boston and the Bayside Expo Center, located about 20 minutes away. Bayside was considered by vendors to be the second-class spot, since most attendees start their Magical Mac tour at the Trade Center. No longer!

Instead of hanging out in a cramped, air-conditioned circus tent alongside the WTC—and forcing people to wait in lines in the sun—Apple this year placed its booth indoors at Bayside. Now with PCI Macs, both joints were jumpin'.

Eye to Eye with PCI

As we mentioned a couple of months ago after the release of the Power Mac 9500, the new models use a high-speed Peripheral Component Interconnect bus instead of the old-fashioned NuBus, which has been used on modular Macs since 1987.

PCI is used by many different segments of the computer industry, from desktop machines to workstations and that means that Mac users will no longer be confined to a Mac-only market with a rather limited number of developers and high ticket prices for Mac-only cards. Both PC and Mac vendors at the Expo demonstrated PCI cards offering large monitor support, graphics acceleration, speedy storage, fast networking, and DOS co-processors.

Apple's new PCI models move the performance gains from the high-end six-slot 9500 down to entry-level desktops. Although familiar on the outside to Mac users, the new machines all have three slots using the flexible and fast PCI bus.

There's quite a range in prices too. More bucks gives you faster processors, bigger hard drives and different built-in video display and output capabilities.

The two configurations of the entry-level 7200 cost from \$1,700 to \$1,900.

The 7500/100 is about \$2,700 and the 8500/120 is about \$3,900. Some BMUGers at the show said that the 7500 looks to be the next IIci, a machine with a lot of "legs," or longevity.

If you attend a BMUG meeting then you should write down the code names for the models, since most people don't like to use the numeric designations. Catalyst, TNT and Nitro are the names for the 7200, 7500 and 8500, respectively. Tsunami was the code-name for the 9500.

This Boston Expo was also the first show featuring Mac clones on the floor. Try hard to avoid saying the word "clone" in any of their booths; some of the sales reps have a cow if they hear their precious babies referred to as "clones." They prefer you call the machines "compatibles."

Although not having a booth, Power Computing made a big splash at the show by placing more than 50 of its 8100/100-flavor machines around the floor. Radius and DayStar Digital also invited people to pound away on their new clones. The BMUG booth had Power and Radius boxes for attendees to play with.

The BMUG Zone

BMUG's booth at the Expo also showed off the latest edition of the semi-annual BMUG Newsletter. The book (we call it a newsletter, but it's hundreds of pages long) is filled with great stuff and has in-depth articles on the forthcoming Copland operating system, OpenDoc technology, and World-Wide Web tips as well as more than 70 reviews.

Hans Hansen, BMUG's publications manager, did a neat, less-is-more trick with this newsletter. By tweaking the layout and shrinking the type face, he jammed 500 old-style pages of information into 344 pages; the process also saves BMUG dough for shipping and handling.

Instead of a floppy disk, this newsletter comes with a CD-ROM disc featuring 200 megs of Shareware and 50 megs of updaters for commercial products, as well as many versions of Apple system software, utilities and updates. The disc also has demo versions of some programs found in the BMUG Choice Product list, so you can try something out and see if you agree with our selections. In addition, the CD also has a number of terrific audio tracks done by BMUGer

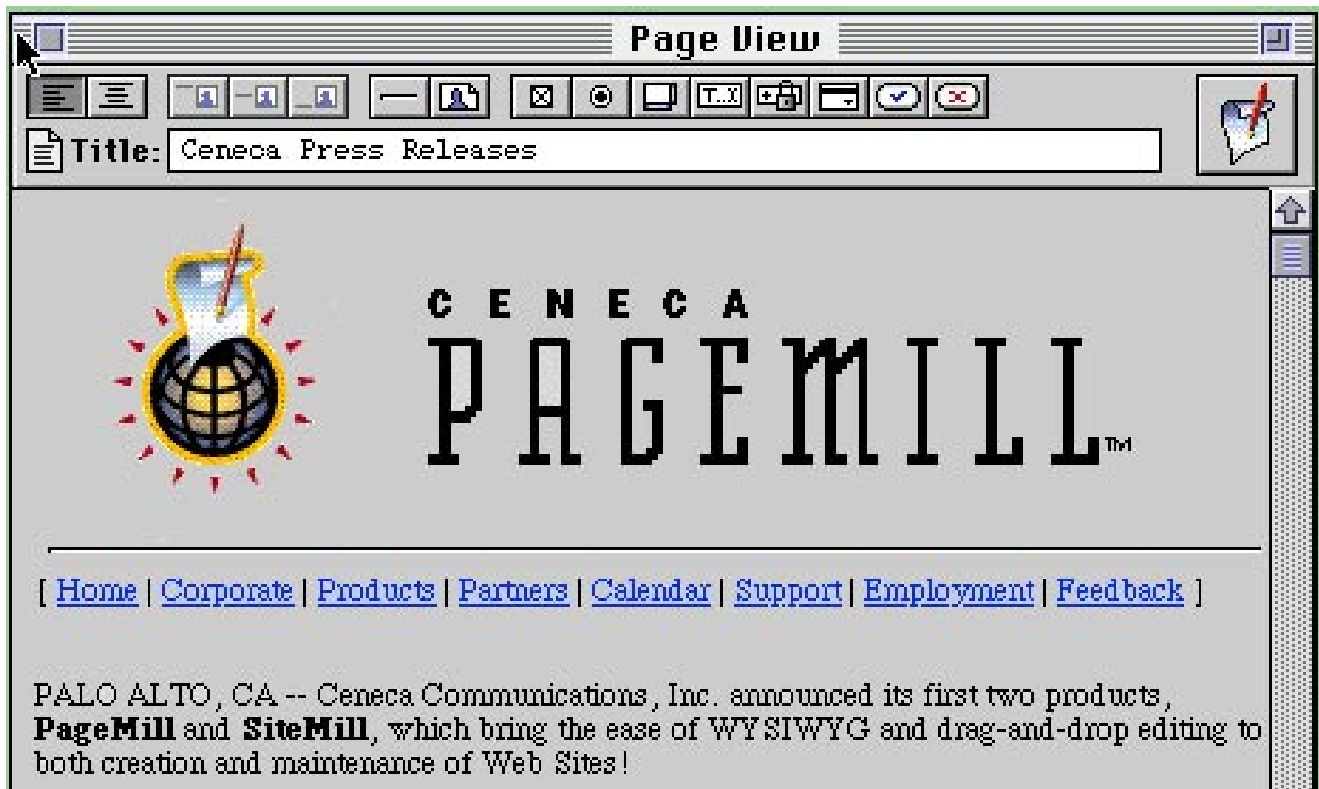


Figure 4

Manabu Ishikawa, a San Francisco Bay Area composer.

Expo expository

There were many exceptional products introduced at the Expo and too many to enumerate here. But that will not stop me from running on about a few stand-outs:

The program at the top of many BMUGer's lists was PageMill, an editor for World-Wide Web pages from Cene-ca Communications. The \$195 software has a graphical user interface and works much like a word processor. "I want it *now!*" said Lorca Hanns, one of BMUG's primary Internet gurus.

As you can see in Figure 4, PageMill looks just like a Web browser, but with a special toolbar across the top. It gives you a WYSIWYG environment for creating pages. Instead of having to fuss with the HTML (HyperText Markup Language) code that is the foundation of a Web page, you can drag and drop text and graphics on the document, as well as move them around as you would in a draw program.

PageMill has tools to do all the fancy stuff that people are unfortunately crowding their pages with, including

background colors, pop-up lists and radio buttons. The program has a pretty good image editor and can convert PICT images to GIFs automatically.

Another Ceneca program that had people jumping up and down over was SiteMill, a \$795 Web administrative tool that helps managers maintain hypertext links at a site.

One of the major headaches dealing with a Web site is broken links. Whenever an image file is renamed or moved, the corresponding links are broken, since all the links refer to the old names and pathways. The result of this is the infamous Error 404 message familiar to all Web devotees.

SiteMill maintains the links and gives managers a graphical overview of all the images, files and folders on a site.

Hans Hansen put his hardware vote in for Casio's \$999 QV-10 camera. Unlike the QuickTake 150, the QV-10 is quite small, about the size of a small film camera. It has the look of Sharp's video cam-corder, with a back-panel color display and a side-mounted swiveling lens. You can move the lens up and down while you peer down into the display—then click!

The camera's little LCD lets you check out the shots you've taken and clear out the ones you don't want to keep. It can show the images one at a time, or up to nine finger-nail-size ones at once. It holds an amazing 96 images, but the shots don't have the resolution of the QuickTake.

A cool feature is the ability to upload PICT and TIFF images from your Mac to the camera. You can then show them to people on a television using the camera's video-out port.

Since I wrote this column the **PageMill** and **SiteMill** products were bought by Adobe Systems Inc., but here's the Ceneca contact info anyway...

Ceneca Communications Inc.,
96 Colonial Lane,
Palo Alto, CA 94303.
(415) 842-6810;
fax (415) 842-6818;
info@ceneccom.com;
http://www.ceneccom.com.

Casio Inc.
570 Mt. Pleasant Ave.,
Dover, NJ. 07801
(800) 962-2746
fax (201) 361-3819.

There was other camera news at the Expo. If you're into QuickTime VR—Apple's new virtual reality environment—you might want to check out Kaidan's new \$109.95 QuickPan tripod head for the QuickTake 100 or 150.

QuickPan lets you pan automatically to various positions for the proper overlap of shots needed to create images used by VR technology. It was very neat and can mount on any tripod.

Kaidan
218 Anvil Drive,
Suite 110,
Feasterville, PA 19053.
(215) 364-1778;
fax (215) 322-4186;
kaidan@aol.com.

Connectix wowed the crowds with its release of SpeedDoubler, a utility that speeds up 68K emulation for Power Macs and optimizes the way that the Finder copies files. It reportedly can give you a 80 to 100 percent boost in performance! Pretty good for only \$99.

Connectix Corp.
2600 Campus Drive,
San Mateo, CA 94403.
(800) 950-5880;
fax (415) 571-5195.

Paris Business Products showed CompuNotes, some interesting personal accessories. The company takes old scrap motherboards, without the chips, resistors and other parts, and uses them as the covers for notebooks, clipboards, journals and address books. A small journal notebook cost me \$10. Their letter-size 3-ring binder had plenty of style, but it unfortunately also weighs a ton, even without paper. But if you're in buff condition then check it out.

Paris Business Products,
122 Kissel Road,
Burlington, NJ 08016.
(800) 523-6454;
fax (609) 387-2114.

October

Windows 95. It's the hype glacier sitting at the top of the computer world. The thousands of related stories floating across the pages of newspapers, Web sites and techno-zines are jabbing icebergs to the hearts of the Mac faithful. But BMUGers are not truly chilled by this blast of cold Redmond air.

The current situation will pass and Win 95 will fade into the background buzz, much like the other ever-present dangers of modern life: smog, ozone and radiation levels. And none too soon.

Besides, there are many more important things to discuss today: tips on taking the Mac off to college and a new semi-Mac virus. And some Windows 95 jokes, to boot!

The School of Hardware Knocks

After climbing through a long year of academic hoops, the last question a family wants to deal with is: which Mac shall we buy? It's not fair. The kid is packed off to school, their room is rented out and the loan payment-schedule is calculated down to the fourth decimal place. But along comes another finger-nail-biting major-economic decision.

This year there are more choices than ever before. What a dilemma! Families not only have to decide between desktop or notebook flavors of machine, but the company that manufactures our Mac OS computer. The clones ain't bozos in the Mac scene.

Apple offers new entry-level desktop Power Macs with a PCI (Peripheral Component Interconnect) bus as well as low-cost Performa bundles. Some of the Performas sport PowerPC processors, while others use the older 68040 chips. Of course, there are different models of PowerBook notebooks with a wide range of prices.

The new Macintosh desktop clones from Power Computing Corp. are available by mail order, as well as from the Computer City superstore chain... choices upon choices galore.

Compared to the Macs available just a couple of years ago, any of these machines offers an incredible mix of performance and price. No matter the model that piques your interest, take a look-see at the bundles offered at both the college

store and the outside computer stores. There are sometimes special promotions on either side of the ivory tower that can save some dough.

It's also a good idea to add some extra random-access memory (RAM) that brings the total to at least 12 megs. Twelve megs is enough to run System 7.5 and several programs at once—required for full use of the World-Wide Web's graphics.

Working through these issues with my daughter, a high school senior, has given me an unfortunate up-close-and-personal new perspective on the CPU question. In visits to a half dozen university campuses this summer, I received a hardware-headed on-the-spot education of late-twentieth century student computing.

Here's the dilemma. While PowerBooks have the advantage of being able to walk into the library or classroom, they are also easily and frequently stolen.

Students need to have constant vigilance about their notebook computers, even in places that have the appearance of safety, such as the library. I worked in an academic library for more than a decade and had the sad chance to console naive students after the loss of their computer, purse, or Walkman.

Some kids have trouble paying attention to mundane details. If your student has a history of losing personal items easily, a missing PowerBook certainly ups the ante from the loss of a book, jacket, or purse. Maybe not a bicycle, however.

But desktop models are not necessarily a better alternative. In the tour this summer of campus dorms, I discovered that most campus housing is usually deserted during spring and fall breaks. Local thieves are well aware of this situation and see this as an opportunity for early Christmas gift selection. So a system that can be easily carried to secure storage, such as an all-in-one 52xx model or a PowerBook, may help this situation.

It's a tossup. But the computer is a necessity for today's university education—or even for high school. Buy any Mac OS model and your student will be happy.

Keeping a Good Mac Down

The Talmud says: "The person who does not rely on fortune postpones misfortune." Here are a few more computer



This is the art that was used for a t-shirt to celebrate the release of the PowerBook 5300. The t-shirt was a custom job for the team that designed the machine. Unfortunately, there's no sign of a fire extinguisher on board. Apple had to recall the models and remove all the fancy lithium-ion batteries that were the hallmark of the notebook. It seems that two units in Apple's labs overheated and burst into flames... not a good feature.

security suggestions for students heading to school, or those in the process of highering their education:

There are several security kits for desktop models that include a lock, galvanized steel cable, and a few steel tabs that lock into slots on the back of the CPU, monitor, and keyboard. The cable is fed through holes in the tabs, and then through holes in the desk, or other heavy object. There are special versions for the different flavors of PowerBooks, too.

Sometimes the thefts are ones of opportunity, especially smaller peripherals, such as external hard drives and printers. Take a look at the Color StyleWriter 2200 inkjet printer, which is a sibling of the desktop Color StyleWriter 2400. It's small enough to carry around or even better, stick in a desk drawer.

Straps and block fasteners from Q-Safety Inc. of Pasadena, Calif., can also discourage the opportunistic rip-off of computer equipment. The items use industrial-strength Velcro (don't laugh, it's

very solid stuff! It's used to hold panels in car doors and is very hard to pull apart) and if you're going to school in California or Japan, it can also hold things down in an earthquake. They have a wide range of products for electronic equipment, bookcases, drawers and even glassware.

You can order a **Q-Safety** catalog by fax at (818) 932-1287.

A campus guide mentioned with pride that his room-mate's term paper had once been lost due to a power brown-out. Given the semi-reliable state of campus power grids, it might be good to purchase a surge protector. It won't help you if the power goes out completely, however, so students (and everyone else for that matter) should save their work often!

It's also a good idea to buy a surge protector with lots of power plugs and

phone-line protection if the school is in a part of the country that suffers from lightening strikes. BMUG has always recommended the Panamax brand, which has a good reputation and offers a replacement warranty for systems attached to the unit.

Most new Macs come with modems, a good thing since students can usually get an email account through the campus. They can reduce their phone bills to high-school friends scattered around the country and calling Mom and Dad for some extra cash.

Parents should also get their own accounts (and a Mac to go along with it) to better communicate with the kids. You will have a much easier time getting through to them and you won't have to deal with leaving messages with room-mates, or worse, the latest boy/girl friend.

None of the universities that we visited had dorm rooms wired with connections to campus networks. They all rely on students in dorms or off campus to log in via modem to servers. This is yet another issue for the security conscious.

Just as students need to follow the rules for safe sexual practices, they also need to pay attention to computer security for network accounts. Students should be warned to never leave the passwords to email and campus accounts by their computers.

In addition, it's best to have several passwords, one for each account, and to change them frequently. The passwords should be memorized; if written down, students should not look them up in front of others. And they should also never give the passwords to friends, even the best ones that they trust absolutely. Never. Ever.

Just Say, "Ahhhhh..."

The arrival of the first cross-platform virus this fall seemed to catch the computer world by surprise; so much so that no one could decide on its name. The virus attacked users of Microsoft's Word 6 word processor, which is also a part of the company's Office suite.

Some people called it Word Macro virus, Word Concept or the Prank Macro, while others named it WinWord. Concept or WW6Macro. This situation

parallels the fractious world on the Intel-standard side of the industry.

Scripting viruses are not exactly new. I remember reading about a macro virus in a 1-2-3 spreadsheet seven or eight years ago and there have been several HyperCard-based viruses. But this is the first virus that can infect users of a program that has Mac and Windows versions.

The Word Macro virus was first discovered in Microsoft Word for Windows, but since Word 6 has common file formats, the virus can also infect Mac files.

Users open an infected file, which launches a Word Basic macro that infects Word's global template file. This means that all of your files will be infected as they are opened. If you have ever been shown a dialog box with the number "1" your copy of Word is likely infected.

Fortunately, the virus does not destroy data. It simply alters the program's Save As command, and forces users to save infected documents as templates.

Microsoft has created a tool that can scan files for the virus and posted it on most on-line services. [sidebar: You can order the Mac scanning tool by calling (206) 635-7200 or download it from Microsoft's Web site at <http://www.microsoft.com/msoffice>.

That 95 Thing

How have Mac users weathered the typhoon of publicity surrounding the introduction of Windows 95? Some better than others. The constant "start me up" refrain that rang in my ears, day and night, was worse than the dreaded jungle drums, which beat in movie serials for generations gone by. The commercial made me grind my teeth so often I made a special trip to the dentist for an enamel integrity checkup.

Start It Up. Bah, Humbug!

Here are a few random bits of Windows 95 reaction that floated around Planet BMUG, our bulletin board system.

Apple insiders reported over the Internet that Microsoft's Windows 95 launch in Hong Kong was an all-singing, all-dancing party in Times Square. Reportedly, the coup de grace of the event was the appearance of twelve male and female dancers in leotards prancing around the square.

Their job was to leap around while carrying large pieces of a monster jigsaw puzzle, which they would gradually attach to a large board. The concept was that the dancers would put the puzzle together, and it would spell: Windows 95. Witnesses said Microsoft did not count on "Hong Kong's notorious ability to get the English language a little askew."

As the jigsaw formed, onlookers noticed that the party was in fact celebrating the global launch of the "Mindows 95" operating system. "Despite frantic gesticulations from the gathered Microsoft spods, the dancers remained blissfully unaware of the mistake and carried on with their gyrations."

Question: How many Windows users does it take to change a lightbulb?

Answer: One, but they'll swear up and down that it was just as easy for him as it would be for a Macintosh user.

Question: How many Microsoft employees does it take to change a light bulb?

Answer: Eight. One to work the bulb and seven to make sure Microsoft gets \$2 for every light bulb changed anywhere in the world.

Question: How many operating systems are required to screw in a light bulb?

Answer: Just one. Microsoft is making a special version of Windows for it.

Apple puts out a limited edition t-shirt at the drop of a hat, usually for the team working on a new project. The release of Win 95 prompted the creation of a shirt that says "Been there. Done that." It lists many Windows 95 features that have been standard equipment on Macs since 1989.

You can fax an order for the shirt to the **Apple Company Store** at (408) 974-9773 and include your name, address, phone number as well as a Visa, MasterCard or American Express card number and expiration date. You should include the quantity and sizes of shirts; each costs \$11 plus \$5 per order for shipping and handling.

Longtime Mac users lit up the switchboards and walked into the Cupertino store to request one of these counter-Win 95 rags. Someone finally got the light bulb—they could make a buck from these shirts.

November

We will stroll down memory lane a byte this month and remember the not-so-long-ago time when Microsoft's DOS operating system equaled productivity to information managers. The Mac with its graphical user interface was the odd ball, while everyone crowded over the larger installed base of "real" software for business applications.

The status of the Mac, with its easy setup and highly integrated desktop, is still balked in business by ancient impressions and earlier market conditions. Somehow micro-mavens ignore that times have changed.

Although Windows 95 is out on the street, there's a dearth of 32-bit applications to run on it. This was Mac's situation at its introduction a decade ago. Nowadays, the Mac has tons of 680x0 and PowerPC-native software as well as Mac flavors of the major cross-platform biz candidates. And there are plenty of vertical-market applications for everything from legal offices to dog breeding. This is night and day from the era of the Mac Plus or Mac II.

Even the criticisms of the Mac clone market compare its early daze to a decade-long process in the Intel-standard PC market. Six months or a year seems like ages in this helter-skelter industry, but it's really not to companies new to motherboard engineering. Sigh.

A Window on the Macintosh

A recent survey on the cost of technical support in business was released in October by the Gartner Group Consulting Services, based in Orlando, Florida. The report contradicts the popular wisdom held by information services managers that supporting the Mac is an extra burden to businesses.

The study said there are no extra costs for companies supporting both Macs and Windows-based PCs instead of just using Windows machines alone. Even better, the Mac is easier to support than the other systems!

The report showed that a site with more Macs has lower technical support costs than those with fewer—duh! It said the costs for Macintosh support are approximately 25 percent less than those for Windows.

There are some caveats. The research was done in the first half of 1995, before the release of Windows 95. This may, or may not, make any difference in future studies, since moving to an upgrade for almost any hardware or software requires an adjustment period. Win 95 is leading businesses to boost hardware platforms and application software; this leads to a double cost, since there's additional support needed for installation and tweaks.

In other Windows 95 news, Sun Microsystems' boss, Scott McNealy, in October said the new Windows operating system is a great gift to give a kid for Christmas because it will keep him or her fascinated for months trying to get it running and trying to figure out how to use it. In the *Investor's Business Daily*, McNealy said people confuse computer activity with corporate output and productivity. He called Windows 95 a "personal activity generator."

No matter how it pains me, this is obviously a cheap shot. The Mac is easier to set up, maintain and use than either a Sun or a Windows machine, but it often takes some feeding and care, as evidenced by the questions needing answers at BMUG meetings. We are still in the beginning stage of the personal computer and they do not have the reliability and native ease-of-use found in toasters and radios.

McNealy's shots remind me of another infamous quote about interfaces. About 1988 or 1989, Randall Fields, the husband of cookie-magnate Mrs. Fields, flamed all graphic user interfaces at the Portable Computing Expo in New York.

He said, "the Macintosh must have been designed by the Soviet Union to limit American productivity." He hated icons, fonts, WYSIWYG displays and the whole kit and caboodle. He also hated the introduction of Windows 1.0 and said that Windows would "take our economy down the tubes."

Not!

These far-sighted comments have been proved totally wrong and graphical

user interface operating systems have led to a revolution in publishing, digital video, the World-Wide Web and CD-ROM-based multimedia. As BMUG has stressed over the past ten years, GUI interfaces have more importantly brought the power of data processing and information retrieval to a greater number and variety of people. Information and computers need to be the workaday tool of everyone in society, not just for a cadre of techno-elites.

Some people seem to have trouble seeing the display for the pixels.

Open the Door and Let Me In?

The use of subliminal images has long been the fodder of science fiction stories. In the golden age of sci-fi, brainy heroes watched movies and were fed complicated texts in flashes, which only registered with the unconscious mind. Fortunately, the fictional characters had an eidetic recall of all of the buried text, which they could quickly use to invent a super weapon and save the day.

In the past couple of decades, movie directors have spliced images such as skulls or mutilated bodies into key emotional moments in films; this was done by William Friedkin in the *Exorcist* as well as *Jade*, his new film released in October. The images are just a few frames long and are not visible

by the eye—until the film is released on video and stop-motion can be employed by couch potatoes.

The use of computers in video production make it easier to insert images into a film. But humans have more than one sense for media producers to subliminally seduce.

Reportedly, Time Warner Interactive Group this fall will release *Endorfun*, a new computer game by the author of *Tetris*. According to reports, the game includes a bunch of subliminal audio messages, such as "I expect pleasure and satisfaction," "It's okay for me to have everything I want," "Today I expect the best," "I can do anything," and "I forgive myself completely."

Time Warner reportedly said that the messages improve player's "positive feelings" and get them in the mood to buy the game for their friends and family.

Self-esteem is great, but perhaps the current generation could use a byte more subliminal guilt? Please notice [Send cash to David!] that I rejected the obvious joke [It will make you'll feel better!] of including subliminal messages in this section [\$20 bills preferred].

An Apple a Day

Many years ago, when I was BMUG's librarian, I received an audio tape from the Hawaiian Mac users group.

The group was having an election and one of the candidates sent an audio cassette to all the members that included a verbal appeal to voters as well as a song. The candidate in question was named Apple Pi; yes, this Mac maniac had his moniker changed legally.

Although I seem to remember hearing at a BMUG meeting that he lost the election, Mr. Pi has not given up his presidential aspirations.

Taking a cue from *Time* magazine's granting its Man of the Year award to the computer, Pi believes that computers may be a constituency for his political aspirations. Here's a piece of his samizdat at www.epf.org/~pi/.

"Welcome to Pi for President, a work in progress.

Now is the time for all good hackers to come to the aid of their Pi (Process Integrity). A united effort will produce ultimate results.

No one can tell someone else what the truth is because for every opinion there is an equal and opposite opinion. Everyone has the ability to determine what the truth is for themselves. We have a world full of geniuses. We have the technology to facilitate those geniuses to communicate. Anything is now possible.

You are looking at the beginning of a new system for facilitating productive global-scale solution-oriented processes. Because what we do here in the United States has ramifications world-wide it might make sense to be aware of the potential outside of the United States. We are now a one-world entity.

Since non-human forms of intelligence are not "currently" accepted as

candidates for the U.S. Presidency, I hereby submit my name for nomination as “their” representative. The platform and party will be determined by users of the Internet who choose to participate.

My actual position in this endeavor is to supervise the “suite of management systems” (mostly on computer) to facilitate problem identification and viable solution-oriented-process determination.

Advisors, experts in the various areas of public interest, will be determined from the “pool” of volunteer participants. Although my name will be on the ballot, I represent a “team” of experts and technical consultants. The public will be voting for this facilitative team as opposed to a single person whose personality, values, and opinions can be manipulated and distorted very easily in the media.”

It’s a tough job, but Apple Pi’s the viable-solution-oriented-process being to do it.

Tip City

Here are a couple of stray tips that wandered across Planet BMUG, our on-line service, over the past month:

- Some people are finding running a PowerPC-based Mac with only eight megabytes of RAM a difficult proposition. There’s no doubt that eight megabytes is often too slim even for running a bunch of applications simultaneously on older Macs, which use flavors of the 680x0 processor. So if at all possible try to get enough extra RAM to take you between 12 to 20 megabytes.

But Power Mac users should check some settings in the Memory control panel that can prevent applications from sending you a low-memory alert message. Here are a few recent suggestions from the ClarisWorks Journal, the monthly publication of C•WUG, the Plymouth, MI,-based ClarisWorks Users Group (their fax is (313) 454-1965).

You should see if your cache setting is a byte too high; the default is 96 kilobytes. The report said that for most applications 256 kilobytes

of cache gives the best compromise between speed and memory use. You may not get that much extra performance from boosting the cache any higher. Sometimes less really is more!

Virtual memory can also be more important on the Power Macs. Although many people turn it off on 680x0 systems, the setting should be clicked on for the Power Macs or the new PowerPC-based Performas.

If virtual memory is off, the Power Macs load the entire data fork of an application into memory when the program is launched. This can consume a considerable chunk of RAM.

When virtual memory is turned on, the Memory Manager doesn’t worry so much about running out of room and loads an application as needed in bits and pieces. It loads only the part that it needs for a particular operation. This may seem like the opposite of how it should function, but the Mac is trying to insure that it can actually run the program you’ve launched. You wouldn’t like to get halfway through something and find yourself unable to proceed. Actually, the Mac may still tell you to stop, or worse, freeze up when memory gets very low.

In addition, power users of older Macs that have upgraded to the next-generation models may be compounding the RAM problem with previous good habits that are not applicable to the Power Macs.

In the past, hard drives were slow and some people used to pick up the pace with RAM disks, parts of memory that trick the system to believe they are virtual hard drives or floppies.

People used to create a RAM-disk volume and place applications or even the entire System Folder into it. It really got things cooking—it still does for some people, especially with PowerBooks. But Power Mac users should see if they are really getting any benefit from using a RAM disk.

This is also how Chad Magendanz’s popular Shareware ShrinkWrap works when loading image files; which are special archives of floppy disks. Most often used by application installers, the images are loaded into RAM and used just like a disk. But faster.

Remember that ShrinkWrap doesn’t recognize virtual memory for loading images; it can only use real physical memory. If you need a little extra RAM for an installation, try telling the Mac to ignore extensions by restarting with the Shift key held down.

- Some Mac notebooks with a grayscale display can support a second desktop monitor, such as the PowerBook 520. But you may have noticed a problem with color when running Quark XPress.

Even though you’ve switched to 8-bit 256 colors, the Edit Color dialog box shows everything in gray and Pantone color swatches seem to be hiding. Everything else in color looks good. What’s up?

It seems that the software checks out the display connected to Monitor 1 (the built-in monochrome display) and figures out what features can and can not be used with the display. Even though you are really using the second color monitor for your work, the software gives more consideration for the primary monitor.

The fix is easy. Open the PowerBook Display control panel and turn off the Video Mirroring setting, then select the external monitor as the primary display. 🐉

David Morgenstern is a longtime BMUGer, and a writer at MacWEEK. He is the self-proclaimed BMUG Cheerleader, and with Lorca, Ron and David S., helps run the monthly BMUG West meetings at the Exploratorium science museum in San Francisco. You can reach him at David_Morgenstern@macweek.ziff.com

FYI

Computer Resources for Education

by Carol Haberberger

Of the 110,000 schools in the US, nearly 10,000 are in California. Here's a sampling of resources which should help educators (and others, too!) tap into some useful information and will help them better understand the rapidly changing technology available.

Online

"NetDay" is coming March, 1996, with the goal of wiring all public and private schools in California for networking and Internet access readiness. This massive state-wide volunteer initiative is being spearheaded by John Gage of Sun Microsystems and supported by technology companies and individuals. (Reportedly, for instance, MCI will be offering Internet software to as many schools as possible, and AOL will offer a free year of service to schools.) To help out or get more info, <http://goldmine.cde.ca.gov> under the "What's Hot" heading or contact Don Merck, manager of California's Ed Tech Office (916)657-4415. See related article in this newsletter, too.

Planet BMUG is now accessible on the net, bringing our world-wide members even closer. Help is at hand as our community continues to grow.

GINA/CORE, California Online Resources for Education, has outgrown its original free connection via the State University system and will now be provided via the net or by dial-up service (Sprint) at \$12.50 a month for 75 prime time (and 90 non-prime time) hours, and 50 cents per hour after that. CORE accounts (\$60 new and \$45 continuing) will continue to be available separately, since some schools/districts provide their own access. They include GINA software for

both Mac or Windows, email, a large information area (with gopher/ftp/telnet), conferences and Internet access via macweb or winweb. Netscape also works well with the GINA software. Modems will be 28.8 and access guaranteed 95/100 times. Contact Sue Mangiapane, Director of Marketing, at (310) 985-9100 or smangia@cello.gina.calstate.edu for further information.

KQED's public television **Learning Link** education area is now accessible only on the net via <http://www.kqed.org>, and it has grown! Check out their beautiful home pages and links to all kinds of resources, including their programming and materials for the Ghostwriter series, NPR, and daily CNN education report. (For more info call KQED's School Services at (415) 553-2140, or email kqed.org.)

Also, the **Corporation for Public Broadcasting's** EdWeb project has links to educational networks, information on exemplary school Internet projects school email addresses, and lots more. Check out <http://k12.cnidr.org:90/>

SchoolSite™ has some great links to related education pages (<http://www.schoolsite.com>) and will offer other resources for \$. (800)964-7483.

Computer recycling

BMUG now accepts modems, for the new Youth Outreach program. Modems and Planet accounts will be given to connect students to our BBS... and beyond!

Center for Accessible Technology (formerly the Disabled Children's Computer Group) in Berkeley, California, accepts software and hardware in good working condition. (510) 841-3224.

Computer Recycling Center in Mountain View, California, is at 1245 Terra Bella Avenue, open weekdays 7:00 am - 3:30 pm. (415) 428-3700.

Detweiler Foundation in San Diego has a Computer for Schools Program and accepts Macs with hard drives and 286 PC's or faster. They are backing a major ten million dollar initiative with the state of California to locate more sources of equipment and work on matching schools' sources. They repair CPU's only, so other parts must be in working order. There are 40 drop off sites in California-phone (619) 456-9045 or fax (619) 456-9918.

Groups

BMUG, of course, has a range of free services for all members which is especially useful for educators: member discounts, Shareware, special interest groups, hardware clinics, and the Planet all help to make the Mac easy to use, while providing backup and trouble-shooting advice. Find us on the net <http://www.bmug.org> or call (510) 549-2684. And don't forget our transcontinental siblings at BMUG Boston, who can also be reached via the net!

The **Center for Accessible Technology** in Berkeley offers classes for all ages, all kinds of adaptive technology and resources, a library of software and hardware to try out, consultations to meet individual needs at the Center or at school sites, and a free BBS (510)841-5621.

The **Computer Learning Foundation** is a non-profit group with the mission "to increase the number of people receiving the benefits of technology." They sponsor a computer learning month in the US and Canada, host many contests to encourage the use of technology, have initiated a corporate partner pro-



gram and serves as a clearinghouse of information for parents and educators. Email address: clf@legal.com, phone: (415) 327-3347, fax: (415) 327-3349. CLF™ P.O. Box 60007 Palo Alto, CA 94306-0007.

Computer Using Educators is a state-wide group which sponsors two state-wide conferences, a newsletter, many meetings/fairs for its 23+ affiliate groups across California, and seven SIGs. Its headquarters are in Alameda at 1210 Marina Village Parkway, Suite 100, Alameda 94501, phone: (510) 814-6630, fax: (510) 814-0195, email: cueinc@aol.co. Dues are \$30 a year inclusive.

ISTE, the International Society for Technology in Education, can be reached at (800) 336-5191, or at 17787 Agate Street, Eugene, Oregon 94703-1923. They publish a wide range of information for educators.

Apple's **Bringing Learning Home** is a program (and promotion!) which provides kits for schools to hold a parent workshop night about computers.

Microsoft & Compaq periodically sponsor free all-day educator workshops around the country which are quite worthwhile.

Far West Laboratory for Educational Research has published a comparison of state education and technology and telecommunication plans. Contact FWL at 730 Harrison Street, San Francisco, CA 94107 for more information.

AT&T's **Computer Learning Foundation** has a pilot Technology for Education program in 8 states (including California and Massachusetts) where AT&T customers can get Tech credits based on usage (like frequent flyer miles) which can be given to a designated school to trade in for technology. CLF, PO Box 60005, Palo Alto, CA 94306, or at (415)327-3347.

And...

Scholastic Magazine has been offering free one-year subscriptions (6 issues) to **Electronic Learning-Your Resource for Technology & School Change**. 1(800)544-2197. They also publish the Scholastic Network on AOL and have a website: <http://www.scholastic.com>

Reading, Rhythm and Rom is a unique business in Petaluma, California. Owners Tim and Pat McCarthy wanted to combine the best of technology with other quality literature and music for children. Their children's store offers care-

fully selected software, a hands-on area where kids can really try out the software on both platforms, good books, children's classes and a summer "camp". They work with the community and local schools, too. Best of all, they dispense good advice based on real children's reviews of software and their own backgrounds in technology, literature, and parenting. If you can't visit their enchanting store, they are on the net as <http://www.wco.com/~readrom> (lots of great links and appropriate shareware/freeware), by email as readrom@wco.com, or available at 800-722-2912. Tim is adamant about quality and helping to clear up misinformation and lack of information about what really works for children, "Be prepared to educate people, just don't put the box out".

Obviously, this is only the tip of the iceberg. It does show, however, that resources are readily available to enable users of all levels to expand their skills and find new resources for themselves, their students and their classrooms. ☺

Carol Haberberger wants to promote meaningful, creative and less stressful use of technology for education. Reach her as carol_haberberger@bmug.org or chaberb@cello.gina.calstate.edu.

NetDay'96 – March 9

Coming To Your Neighborhood

10,000 Reasons to Connect

by Carol Haberberger

An ambitious project, through private initiative, for the almost 10,000 schools in California is underway for Saturday, March 9. Many high-profile tech companies, parents, teachers, volunteer engineers, and other businesses will be collaborating to wire thousands of California schools with the technology needed to connect classrooms, libraries, and laboratories to the Internet. The project has the support of State Supt. of Education Delaine Eastin. So far almost a thousand volunteers have picked a school to help, and almost all of them did that in the first week following President Clinton's announcement.

The goal is that at 9 am on March 9, ten volunteers will wire every school and as many classrooms as possible. That afternoon high-tech companies will send volunteers with professional testing equipment from their companies to the schools to test and certify the work done.

According to the NetDay96 website,

“At the end of the day, each school in California will have been visited, surveyed and certified...For the first time, we will have a complete inventory of the state of technology in California schools; this inventory will be perma-

*For some schools,
wiring is impossible.
Asbestos, brick
walls, structural
problems, or other
factors may not let
us lead wire to
connect the rooms in
the school.*

nently and instantly accessible on the Word Wide Web.

We will use exactly the same technology for the schools that we use to network our own companies and institutions. We will use the same installation

tools, planning manuals, and testing equipment we use daily in our businesses. We will install simple, but technically advanced technology to solve one third of the challenge of connecting our schools to the internet...This complements other initiatives to link the central point to the outside world, and other initiatives to place computer equipment in the classrooms and libraries.

For some schools, wiring is impossible. Asbestos, brick walls, structural problems, or other factors may not let us lead wire to connect the rooms in the school. For a limited number of schools, AT&T and others will provide wireless connection: radio links that are fast enough to carry data from computers in classrooms to a central point, for connection to the outside.”

NetDay's first www site, development services and software for the ongoing project was provided by SunMicrosystems/w3.com. (<http://www.w3.com/netday96/>), but the ongoing site will be hosted by the Well, and will have the name “Netday.net”. Eventually this will include all 10,000 schools' home pages. For questions not answered by the Web pages concerning NetDay '96, please email John Gage at john.gage@eng.sun.com., or call (415) 987-2121. ☎

First One's Free...

Stories of Online Addiction

by Bruce Linde

It started innocently enough, when I joined BMUG. With a few simple clicks of my mouse, and a modem, I connected with a large community, all sharing and accessing incredible amounts of information... and fun.

As I spent more and more time on the Planet (BMUG's main BBS), I was drawn more and more into the BMUG community. I started going to main meetings, working the Helpline, and eventually joined the staff. Even before that, though, I became one of the Planet Administrators, responsible for helping make sure that the Planet runs smoothly. Since I enjoyed being online, it seemed like Christmas when I was informed that, as an Admin, I would have unlimited time on the BBS—24 hours a day!

These days, I still spend hours every day online, logging into multiple services, for different and varied purposes. And, every day I have to ask myself, "Is this how I should be spending my time? What about quality of life?"

With this in mind, I sent the following survey to some of my online cronies, asking them to participate in a little information gathering:

- Name?
- Occupation?
- Email accounts?
- Online activities?
- Time estimate for email and other online stuff?
- Guilt, denial, or other conscious or unconscious (how would you know?) therapeutic (my own word!) issues that come up for you around how much time you spend online?
- What would you do with the time if your power went out?

Since I started this, I'll start with me:

Name: Bruce Linde

Occupation(s): Entrepreneur, musician

Email Account(s):

bruce_linde@bmug.org,
brucelinde@aol.com,
smike@best.com

Online Activities: I log on several times each day using Claris EMailer to get my America Online and Internet email. This includes work-related stuff; random responses from miscellaneous posts I've made in various conferences and newsgroups; email from the folks (who were in Italy for seven months); the daily German news (my wife is studying German, so I subscribed to a mailing list offered by Deutsche-Welle television, in Germany); and messages inspired by my songwriter collective Web site (www.songwriter.com).

Then, I use Netscape to read my subscribed newsgroups, check my Web pages, and do a little surfing. I read comp.sys.psion since I got a Psion 3a palmtop. The 3a has a built-in programming language and does digital recording, which prompted me to write and upload a very successful little Shareware strobe-tuner program for any musicians who also happen to own a 3a.

PSTuner 2.0 is available on America Online, CompuServe, and at the main Psion Internet site in the U.K.

I read alt.guitar.lap-pedal since I traded an 8-meg simm to a friend for an MSA pedal steel guitar (two 10-string necks, 8 pedals, four knee levers!), for tips, tricks, and tablature (a way of writing down what strings, pedals, and/or levers were used to play a given song). I read best.www to keep up on Web site tips and tricks, and occasionally shop for hardware in comp.sys.mac.wanted.

I use NCSA Telnet to get a command-line interface to my Best.com account, for quick .html edits, or to change or set permissions on Web pages. (or to get my UNIX email). I use Fetch to upload files.

After I've taken care of all of that, I log onto the Planet. As an Admin, I lurk in different conferences, keeping an eye out for technical or customer service problems, sometimes dealing with them, sometimes watching as others volunteer their time and efforts to help the newbies, and sometimes letting the appropriate staffer know what's up; there are usually multiple messages waiting in my personal mailbox, asking for information relating to Planet procedures and problems. As a member of BMUG's Board of Directors, I'll check the BoD conference for current issues and discussions, upcoming meeting schedules, etc. And, as a BMUG member, I'll check Buy/Sell Hardware, the File Archives (especially New Uploads!) and my current favorite conferences.

Estimated Daily Online Time: I'd say it takes me two to three hours every day to take care of both business and pleasure. Judicious use of EMailer, which collects all of my Internet email for me, and BulkRate, which is the offline reader of choice for FirstClass systems (like the Planet), does help, but it still takes time to answer (and ask) questions, stuff and unstuff files for uploading and downloading, and rebooting for occasional crashes.

My PPP connection sometimes drops (funny how every time the Cable T.V. guys do anything on my street the phones get weird) and I have to reconnect, which is irritating, and time-consuming. Still, I try to remember that I'm having fun. I am having fun, aren't I? 8-)

Guilt/Denial/Other Therapeutic Issues:

I have to go back a few years to answer this question, back to when I began the preparatory work for my mid-life crisis. It's taken me a number of years to distill it all down to one working mantra that hits the issue right on the head: quality of life. I am watching less television, playing more tennis, and working on my second CD (four songs already!), but two or three hours a day is still two or three hours a day; even if it's only two hours, that works out to 30 24-hour days a year or over 18 40-hour weeks—yikes!

There are times when I'm riding my online surfboard, with the virtual wind whistling in my ears, hunting down or stumbling across information I want or need, and thinking that we live in phenomenal times. And then there are times when it's all a real pain, and I know that it will be some time yet before I can shut down and get on with things I'd rather be doing.

And If The Power Went Out? Although I'm a PowerBook owner, and could actually run for a while on batteries, I think I'd consider a power outage an omen, with the god(s) telling me to grab a guitar and sit in the dark and relax into some mindless doodling—a pro-

cess, by the way, which has resulted in some of my best songs.

And now here, for your edification and delight, are the responses I received from some of the online junkies who took my little email questionnaire right in stride.

Name: Ann Wrixon

Occupation(s): BMUG Executive Director

Email Account(s): BMUG, Internet, IGC, others I do not really use [ed., but probably pay for!]

Online Activities: Mainly I just respond to email, although I'm spending more time browsing Planet BMUG. Very rarely I will visit Internet sites for specific information I need.

Estimated Daily Online Time: I spend three hours a day responding to my BMUG email alone (21 hours/week), and maybe another three hours a week responding to my other email.

Guilt/Denial/Other Therapeutic Issues:

At home, I spend too much time online. As a result I feel like I neglect my husband and friends who would like to spend real time with me. In fact, I have a tendency to try to hide when I am online, although Thom always knows and teases me about it.

And If The Power Ran Out? It has never happened, but the thought actually frightens me, since the amount of extra time and work it would require to communicate with all these people would totally swamp me.

Name: Tim Holmes

Occupation(s): Senior Geek (that's what it says on my biz cards anyway), Apple Computer

Email Account(s): timbmug@aol.com, shortstop@eworld.com, shortstop@applelink.apple.com, tim_holmes@bmug.org, 72511,424@compuserve.com, tim_holmes@quickmail.apple.com

Online Activities: Lots of email to read and send of course.

My parents and all of my brothers and sisters are online, so that makes communication easier. This is also

true of the several best friends from high school, though I write too infrequently.

I read the news on AOL and download any Shareware I haven't already gotten on Planet BMUG. On Planet I deal with BMUG stuff in general (I'm on the Board of Directors so there's always something "interesting" going on.) I help moderate the Buy/Sell (non comp) conference, as well as act as a roving moderator on the BBS in general.

I keep up on Mac technical issues on CompuServe in the ZDNET/Mac area, as well as visit with the Mac cognoscenti: Levitus, Wolfson, Aker, Inahtko, etc.

On eWorld I read mail, do some work stuff and am on a mailing list for Ani Difranco, a wonderful folk musician.

Estimated Daily Online Time: I spend probably 2-3 hours every day outside of work online.

Guilt/Denial/Other Therapeutic Issues:

I don't bother denying any of it. Haven't for years.

And If The Power Went Out? I have a PowerBook and phones are, of course, on a different power source. When my batteries run out? It hasn't happened to me yet.

Name: Leroy Sprinz

Mother so wanted that no one should call me other than Leroy. No nick names. John and Robert, Charles and Gerald provided all sorts of opportunities for her to avoid. So, Leroy, Lah ROOOY; not Lee or Roy or LEE Roy. So her husband, my father, made us both squirm whenever he teased: "Little EEE Roy."

After three decades of her desire and suffering the many variations, I decided my name, her version, was quite acceptable. After all, it translates to "the king," at least to "royal." Not a bad tag.

Sprinz is a problem, too. I'm embarrassed to admit how I cringed each time I heard "Sprintz." In an Irish Catholic grammar school, in the 40s, merely aural association

with the crucifiers of Christ damaged my self-respect. To be called "Spring" made me feel like some kind of dummy. Springs were and are for cushioning or triggering. All right! Triggering action isn't so bad, but being no more than a leaf or coil spring! That's pretty static, dumb, oxen-like.

The years have made me less sensitive. Perhaps I've selected my contacts carefully. So, the last decade or so has treated me to soothing, affirming, comfortable soundings of Leroy Sprinz. When the exception has occurred, I've not cared. Then, too, name is convenience, shorthand, not substance.

Occupation(s): For more than a quarter century I taught high school English, especially writing and criticism and creativity. For most of those years I delighted in the challenge of coaching baseball at the varsity level. Then the day came that I lost my respect for my principal's view of baseball—he seemed determined that it should be an end rather than a means. I resigned. Within weeks, I resigned as a teacher because athletic programs received more support than academic areas; football-stadium building received enthusiastic support, not just reams and reams of curriculum statements.

My mother died. This woman who had fussed over non-essentials, such as names, for all her life died well. She faced the diagnosis of a melanoma deep inside her right nostril with courage, with grace. For the minimum six months she was given, she endured Orwell's cage-of-rats-fastened-to-the-face-moment-to-moment visceral experience. This woman who had demanded guarantees of everyone with whom she interacted spent her last months expressing pleasure and thanks for the smallest of attentions. My mother died a month or so before I turned my back on the school district in which I had as much tenure as anyone.

My woman calculated that the government collected most of my salary. We agreed that my father

would need attention. So, since the summer of 1987, I have stayed home to serve as a primary care provider to my father (he died January, 1994) and mother-in-law (still healthy and active, though approaching 95) while my woman continues to teach and administer, with the expectation of my presenting her with an occasional piece of writing.

Email Account(s): In the past, I've had GEnie and CompuServe accounts but used them rarely. At the same time, as well as after I canceled them, I had an AOL account. That led to beta-testing AOL's Macintosh software and, eventually, to exploring the TechLive function and unlimited overhead. (That experience takes words in the last Newsletter.)

My BMUG account has proved the most satisfactory (free of gremlins, glitches, bugs) and extending (a source of technical information and useful software and contact with some interesting artist/writers). I also have an account with Virtual Valley Community Network, a FirstClass BBS serving the communities of the Silicon Valley. My woman has an account with BACES, a FirstClass BBS that attempts to network the Coalition of Exemplary (I think the "E" stands for Exemplary) Schools in the Bay Area.

Online Activities: My constant search is for artist/writers with whom to share writing. I relish offering constructive criticism and receiving it. Occasionally I discover a kindred spirit. Then I spend more time with that person's writing than with my own. The reward is more time for my stew of creativity to simmer, perhaps, with some new insights and experiences.

Friday last (September 22nd), I spoke with a Deputy City Manager of the City of Fremont about the possibilities for connecting the Fremont community to the Internet. He desires interested community members (or people who work in Fremont) to join him in exploring ways by which this interface

can become a reality. We both are aware that VVCN (VVAL) provides this networking function for the civic governmental, educational, recreational entities of the area Planet BMUG South tried to serve.

I have not shared this brain storm with him. But I wonder if BMUG could squeeze more opportunity and service from its resources if it pursued ways by which it could infuse a community such as Fremont with its technical prowess/experience in return for a site on the community BBS.

Estimated Daily Online Time: I start checking my mail boxes about 6:30 am each weekday morning. Responding can easily take me to 8:00 am. Frequently, I can tap out responses and new messages, critiques, and maybe something new until noon except for breakfasting myself and my mother-in-law.

Guilt/Denial/Other Therapeutic Issues: I don't like my inclination to waste time on garbage. But I need to peruse lots of writing to discover some that challenges. Also, my inclination is to explore the responsiveness-to-criticism of some person who does something well in an otherwise inchoate piece. My woman needs to remind me, often, that I lose sight of one of our goals in my staying home: to produce my own work.

I am very vulnerable to trying new software. Because I'm using an SE with a 50 MHz '030 CPU and 16 megs of physical RAM, I walk through a mine field each time I try something new. Bad F-line instructions and memory addressing errors are familiar to me. And, of course, once something goes wrong, my next few hours become rescheduled. I must find out if I can work around the problem. So fritters away time that I could have used for writing. So germinates my next idea for a BMUG Newsletter article.

Actually, I spend only a few minutes a day online. But the consequence of those 5-10 minutes can consume hours more of time at my Titus Andronicus (remember

that Titus chopped up his enemies to serve in a steaming-fresh pie to his chief antagonist); so my SE seems to do at times, chop up my work and/or time (Woman calls her identically upgraded SE Iago).

The best play is challenging work. All that I've written for you is play for me, yet it can, hopefully, and will affect you positively, give you pleasure, perhaps centrifuge your mind in a new direction, reinforce something you wished more stable and now can be. It is my work; I seek opportunities to play.

And If The Power Went Out? Tend to the thirty and more finch in our outdoor aviary; exercise separately our two dogs (Joshua allows me to experience Marmaduke first hand); remember to give some banana to Jordan Baker (our yellow nape); doodle some tune at our Yamaha E-30 organ; try to recapture some of my trumpeting skill on my Bach Strad; clean the house; and water Woman's growing things so that when she comes home we can thwack some tennis balls if she has some energy left. Then I must find time to run, really jog (I move as fast as I have for the last twenty-five years, but, as Arthur confesses in Camelot, I need longer to reach my destination), 8-10 miles each day.

P.S. There is obligation: to cooperate in the spinning of Webs that tangle fear, anger, intolerance so that understanding and communion eventuate and the new that the merger of the past and familiar affect. Again, thank you for the opportunity to have this pleasure.

Name: David Schnider

Occupation(s): law student

Email Account(s): das@ccnet.com, schnider@bmug.org

Online Activities: WWW, MUD

Estimated Daily Online Time: 1 hour per day

Guilt/Denial/Other Therapeutic Issues: Should I be doing my homework? Should I be talking to my girlfriend? The usual.

And If The Power Went Out? No answer

Name: Dennis Dimick

Occupation(s): Editor for National Geographic

Email Account(s): I have accounts on America Online, CompuServe, and eWorld. The office pays for AOL and CIS. I pay for eWorld. I want to support Apple Computer. I'd probably quit using computers before I was forced to use Windows or spend any money to make Bill Gates richer. I do have a classy Apple IIc+ that I could press into service if needed.

Estimated Online Time: Much of what I do online is related to research and fact-finding. It's my job to design the projects we do, and to figure out what are relevant themes and ideas to pursue photographically for the stories.

My work tends towards environmental and natural resources issues. In the past few years I've worked on pieces dealing with national parks, the endangered species act, Colorado River, Ogallala (High Plains) Aquifer, logging, mining and grazing on federal lands, non-point-source pollution, sustainable farming, and the like.

As a result I tend to spend 60-90 minutes a day online looking for stories and information on the environment and current affairs. I'm also a fan of QuickTime and its enabling abilities for motion and time-based media production, and I use telecommunications as a way to keep up to date.

Online Activities: I dial into BMUG Boston, and once in a while to Planet BMUG in Berkeley. I'm active with the Washington, DC Apple Pi Users Group, and moderate their BBS board on issues of QuickTime and multimedia. I use the World Wide Web via AOL's Browser, but the main reason I use the Web now is to grab the daily Internet FAX edition of the New York Times. I like the Utne Reader site, and tend to check out Adobe's site to see what's new in the way of Acrobat and their

graphics applications. That's about it for the Web now. No Internet newsgroups, except for alt.sustainable.agriculture. Newsgroups have way too high a signal-to-noise ratio for me, and are generally a huge time sink.

I used to be on the Well, and I liked it a lot, as I have been a subscriber to The Co-Evolution Quarterly (now Whole Earth Review) since the beginning. But I found that the Well was just too expensive, and I was really spending too much money and time debating the issues of our times. Had to pull the plug. Before I quit two years back, I started a topic in the media conference on the Newsweeklies Time, Newsweek, and USN&WR. This has been a very popular topic, and I noticed this is where Time and Philip DeWitt were savaged for that hokey cover piece this year on CyberPorn—the full text from the Well debate, in the newsweeklies topic, was splashed all over HotWired.

Beyond research, I use AOL for email with colleagues, and, depending on the various technical forums for up-to-date information and software on Mac issues, especially QuickTime and multimedia. I don't do any of the online chats or any of those things where special guests come online to hold forth at their keyboards. What a waste of time. Oh, I don't watch TV, except for the CBS Evening News. I have no idea what the X-Files is, for example.

Guilt/Denial/Other Therapeutic Issues:

No guilt really. I just wish I had more time in the day. We have two little kids at home, and I need to spend as much time as possible with them and doing household chores. I don't sleep much. One thing I would say is that the online world has helped me stay in touch with friends and family; keep up to date on the news; and generally feel like I can stay in touch with what's happening even when I can't get out of the house. I generally believe online communication, when used for a purpose other

than hanging out, is a wonderful enabling technology.

And If The Power Went Out? Oh, I'd read a book. I don't need the power to go out though, as I'm finding myself turning the computer off more and more. (I'm by default the Alpha geek in my office. We have about 20 Power Macs, and I get to be the one to fix all of their problems. It wears on me a bit, and I'm suffering a bit of techno-burnout.)

I subscribe to a Magazine called *Plain*. It's produced by Amish people in Chesterfield, Ohio. They are adamant Luddites. Their magazine has hand-written address labels. They are moving towards a completely non-computer produced magazine. Hot type, hand set. I admire their daring. I won't do it, (I love those PostScript fonts...) but I think you have to be open to hearing what the other side is up to.

Name: Hoai-An Truong

Occupation: I set up new employees with computers, computer accounts, locations, moves, etc. at Sybase, which makes the #2 UNIX database in the industry.

Email Account(s): Planet BMUG, The Internet

Online Activities: My favorite hangout is Planet BMUG which I check almost daily. I read and respond to incoming mail, Woman to Woman, Core, and maybe poke briefly into 2-6 other conferences. I check my main Internet account, and maybe 1-2 other accounts. That's it.

I used to post events and announcements to Women's WIRE from time to time, and checked "Hangout" to see what was going on, until I lost my freebie account. I subscribe to a minimum of very low-volume Internet lists. I have an AOL account which I almost never check. I keep it only to be able to get copies of articles by my older sister who works for the San Jose Mercury News. I promote and organize events to demystify email, the Internet, and getting online for

women. I do this because email is way cool and I believe email is a powerful tool for keeping in touch and for reaching many people, but I *don't* surf the Net. I think it's a colossal waste of time.

One of the best things about email was when my younger sister had a free Internet account through her previous job. I could keep in contact with her in Berlin where she's been living the last ten years. It didn't keep our phone bills down, but it sure was fun.

I used to long for Internet access from work. Now that I have one, it's mostly a hassle. Waaaay too much volume. Occasionally, I check my work email from home.

Estimated Daily Online Time: I used to be much more active online but have cut back significantly due to the demands of work this past year. Beyond checking my email at work, I probably spend no more than an hour per day online, and for the past year or so, often it's been a very cursory half-hour per day or less—comparable to checking my answering machine when I get home.

Guilt/Denial/Other Therapeutic Issues: Addict? I ain't no addict... :-)

Could I live without my email connection? *Noooo!*

Do I ever regret putting in a second phone line? Nope. Absolutely not. I love it. Frankly, I've been way burnt out with online stuff. You should have asked me about online addiction a year or two ago, really.

And If The Power Went Out? If the power went out, I'd light a few candles, and read a book. Big whoopee.

Name: Bob Rosas

Occupation(s): Systems Officer, Wells Fargo Credit Card Division

Email Account(s): DNAI, BMUG, eWorld, AOL, MacDaddy, assorted local BBSes

Online Activities: Mostly I lurk, but will on occasion post to NFL conferences, and a few Usenet newsgroups like alt.callahans; I've de-

veloped a number of email correspondents as a result.

Estimated Daily Online Time: Not counting email at my office, I spend at least 3 hours per day/night online and responding to personal email and surfing.

Guilt/Denial/Other Therapeutic Issues:

I have no problem with the time I spend online. I find it to be thoroughly enjoyable, and I'm often surprised that so much time has passed since I first logged on. I find it to be a much more satisfying way of communicating with people than if I were just to talk to them on the phone. This is due, I feel, to having to apply more mental discipline and order to your thoughts when you put them in writing rather than simply being able to speak to the person in real time.

And If The Power Went Out? Ah, there's a question. One I will be facing in a way since I will soon be leaving the country for a few weeks. While I plan on taking a PowerBook with me, (I cannot imagine not having a machine with me!) I do not expect to be able to get online during that period of time. Frankly, I don't expect it will bother me, but as I said, I would really miss not having a computer with me. I suppose that could be construed as a dependency, but, given the choices out there, it's better than most.

Name: Kelly Pernel

Occupation(s): BMUG Database Manager; math grad student

Email Account(s):
kelly_pernell@bmug.org,
kellyp@sirius.com

Online Activities: I check out the newsgroups and various Web pages; write to my friends and family who are far enough away to incur large phone bills; validate people on Planet BMUG; respond to BMUG customer service questions; check out the various conferences on Planet BMUG.

Estimated Daily Online Time: 2 hours per day

Guilt/Denial/Other Therapeutic Issues:

When I realized how much time I spend online per week (by responding to the previous question), I was disgusted. I've been known to bash online addicts for the amount of time they spend online, but now I guess I'll have to keep my mouth shut.

I do a lot of work online, but I didn't realize that it took so long. Of course, I do spend a few hours lurking through the fun stuff, but I'm amazed at how much I've grown to rely upon virtual communication. I can't imagine how much more difficult life would be if I had to rely solely upon snail mail and verbal communication (never *ever* thought I'd hear myself say that).

And If The Power Went Out? I'd call my online-junkie friends because I'd know their phone lines would finally be free; read a book by candlelight; sing songs (joke!); play with my cat...

Name: Harold Sasaki

Email Account(s): Four accounts (hsasaki@harold.com is the main one)

Online Activities: Usenet newsgroups, World Wide Web, email

Estimated Daily Online Time: I waste far too much time sitting in front of a terminal. And the weird thing is that I'm not into a lot of the things that stereotypical online geeks do, such as IRC, Doom, and all of those games. I spend so much time on the computer that I figured I'd might as well try to get paid for it, so I got a job designing Web pages.

I usually get up at 4:30 in the morning and check my email, and then go to the gym and play basketball. I come home and check my email again before I go to work. I don't know why I'm so fascinated with talking through email. I do enjoy talking to people face to face. Maybe it's because I hate talking on the phone. But, at least I get to communicate with people I'd never have met if it weren't for the Internet. I've never met Schaft [ed.,

another Best.com member] face to face, although I've seen his picture on his home page. I talked with a guy in Japan who happened to graduate from the same college I did (San Jose State), and we found ourselves talking about teachers we both had. I would never have talked to him if it weren't for the Internet.

Estimated Daily Online Time: No answer

Name: David Hauer

Occupation(s): Computer Consultant

Email Account(s): Planet, AOL, occasional PPP accounts through work

Online Activities: Email; exchanging manuscript drafts with editor (almost qualifies as work group); browsing for interesting tech info; providing interesting tech info; buying and selling computer stuff; software tech support (vendor and user).

Estimated Daily Online Time: Variable, although it probably averages around three hours a week at the moment—though it's easily been three times that at some points.

Guilt/Denial/Other Therapeutic Issues:

Online is a great method of procrastination when I really should be using my computer for something else. Then there's the fact that email correspondences with new online acquaintances often take up much more time, and occur with much greater frequency, than conventional correspondences with old friends. This strikes me as both odd and guilt-inducing.

I have observed that periodically I do feel an addiction of sorts. Wanting email, or barring that, a direct response to a post of mine, or, barring that, a new post on a topic of interest, I'll browse through my various online accounts hoping for satisfaction, a feeling of panic growing as I finish with each one in turn, until there's nowhere to go. But then, I was always "addicted" to receiving snail mail. Kind of the same principle, with a deeper hook.

And If The Power Went Out? Perhaps not the best question, since a power outage would preclude other activities than just online communication, (e.g., local computer use, listening to the stereo, etc.) Anyway, I might play music or talk to friends on the phone.

Name: Jonathan Rosenoer

Occupation(s): Executive Editor, Lexis Counsel Connect California (the western region of an online system for attorneys)

Email Account(s): Lexis Counsel Connect, The Well, America Online, own Internet domain

Online Activities: Publisher of own Internet site, moderator of a number of online discussion groups, founder CyberLaw area on America Online.

Estimated Daily Online Time: 40 hours per week

Guilt/Denial/Other Therapeutic Issues: No guilt—this is how I support myself.

Estimated Daily Online Time: No answer

Name: David Morgenstern

Occupation(s): Associate Editor/News MacWEEK

Email Account(s): 3 Internet mail accounts, 1 QuickMail account, 4 online service accounts (counting the Planet)

Online Activities: In years gone by, I used to spend hours in "recreational" Net cruising. I wandered in dozens of newsgroups and checked out scads of Internet FTP and Gopher servers for cool information... and this was before the Web became established as the connection medium.

Estimated Daily Online Time: Nowadays I am hard-pressed to even keep up with my email. Things might be better if I wasn't subscribing to more than a half dozen list services. In addition, I recently pruned my Netscape Navigator set of bookmarks down to about a hundred sites and redefined my header-dividers.

Guilt/Denial/Other Therapeutic Issues:

I do like to sit in bed and watch television, while I'm connected online with the PowerBook. The situation has a great mix of late 19th Century Proust and 21st Century multi-tasking behaviors. Now if I can only get the cat to stop jumping on the keyboard!

Estimated Daily Online Time: No answer

Name: Raines Cohen

Occupation(s): Online Communications Manager, User Group Connection

Email Account(s): Internet (5), eWorld, AOL, AppleLink, Quick-Mail, Planet BMUG, and some others I'm probably not aware of.

Online Activities: Web publishing, email broadcasting, eWorld publishing, AOL publishing

Estimated Daily Online Time: At least five hours per day

Guilt/Denial/Other Therapeutic Issues:

Hey, I get paid for it now—I'm not complaining! With the right tools to automate the grunt work, it can be fun.

And If The Power Went Out? Keep on cranking, with my PowerBook!

Name: Sam Penrose

Occupation(s): I'm a writer, which leaves me at my computer and looking for ways to procrastinate many hours each week.

Online Account(s): Planet, Internet

Online Activities: I spend anywhere from 10–90 minutes a day on BMUG and 5–150 minutes a day on the Internet. Lots of that is email. On BMUG I participate in discussions and give computer advice/tech support. On the Internet I email friends and search for information. I like to help my friends buy used Macs, so I spend a fair bit of time chasing down deals on Usenet newsgroups.

Estimated Daily Online Time: I'd say an hour total is typical.

Guilt/Denial/Other Therapeutic Issues:

I've decided not to join The Well, although it sounds great for my

enjoyment and possibly my career as a writer. I don't want to spend more time or (especially) money on online stuff. I went a little crazy with online stuff when I first discovered it, but I've since recovered a balance.

For me, cyberspace is an extension of my life-long love affair with the written word. Before email, I wrote more letters. Before conferences, I read even more books, magazines, and newspapers than I do now.

And If The Power Went Out? No answer

Name: Michele Carpenter

Occupation(s): BMUG Office Manager/Customer Service; Planet BMUG Assistant Administrator; Online Goddess

Email Account(s):

michele_carpender@bmug.org,
michelec@ccnet.com,
mcarpender@aol.com,
michele_carpender@wwire

Online Activities: Answer questions on Planet BMUG, answer questions on Macworld Online's Web page, answer BMUG questions on AOL, exchange email with people all over the world, MUD, IRC

Estimated Daily Online Time: 6–12 hours per day, depending on circumstances

Guilt/Denial/Other Therapeutic Issues:

Um, well, I get some razzing from people that I should have a real life, so I spend some time telling people "I'm gonna go home and... do my laundry... go to sleep" and various other excuses when what I'm really doing is logging on to the Internet to talk to my friends there, MUDding, and IRC. Other guilt issues have to do with avoiding things that I really should be doing in favor of being online. I try to avoid being heavily online when my son is home, since he is the one responsibility I really don't want to avoid.

And If The Power Went Out? If the power went out I'd read a book, or maybe go out with friends or talk to someone I know on the phone.

Name: Dan Meriwether

Occupation(s): Internet System Consultant, Multiple site Web Master, Author (*Macintosh Web Browser Kit*, J. Wiley Coyote & Sons, NY)

Online Activities: No answer

Estimated Daily Online Time: No answer

Guilt/Denial/Other Therapeutic Issues:

Man, like... I could stop. Anytime! I could just put the modem and router down and just walk away. Cold. I'm not like those freaks you've heard of... you know, 18-hour junkies. I'm never on for more than 16 hours... unless I want to. Okay, I admit that the dedicated line, answering service, and IP server are bad signs. But it makes me feel good. If only it weren't for all those messages. All those hundreds and hundreds of messages.

And If The Power Went Out? Every now and then, I do go outside.

Name: Ian Crew

Occupation(s): UC Berkeley Student, College of Engineering, Electrical Engineering and Computer Science Major, 4th year. I also work as a Technical Coordinator for Residential Computing here at the University, which involves helping to set up and maintain the computers available to students living in the dorms.

Email Account(s):

icrew@cory.eecs.berkeley.edu,
icrew@soda.csua.berkeley.edu,
icrew@ocf.berkeley.edu,
icrew@uclink.berkeley.edu,
icrew@www.reshall.berkeley.edu,
icrew2@uclink2.berkeley.edu,
Ian_Crew@bmug.org,
bmug@garnet.berkeley.edu

Online Activities: Check email. Read Usenet news. Some browsing of the WWW (mainly informational sites such as Wells Fargo). FTP (to find useful Shareware for work)

Estimated Daily Online Time: I probably spend two to three hours per day online. I will often spend more time than that just waiting for stuff to download.

Guilt/Denial/Other Therapeutic Issues:

I notice two things. First, I feel sort

of guilty having my phone line tied up—it makes it hard for people to reach me via non-electronic means. Also, would email withdrawal come under this category?

And If The Power Went Out? Well, I have a PowerBook, so I can run on batteries for at least two hours. So, if the power is out but the phones aren't, I'm fine. I might also actually get some studying done (what a concept!)

Name: Ron Hunsinger

Occupation(s): Programmer

Email Account(s): Planet BMUG, hnsngr@sirius.com

Online Activities: Some email, FTP, and Web browsing, but most of my time is spent reading newsgroups (or conferences on Planet)

Estimated Daily Online Time: I've managed to cut down to two to three hours per day.

Guilt/Denial/Other Therapeutic Issues: I still think I spend too much time online. I feel guilty about how much time being online takes from other things (especially self-education), but I also feel guilty if I don't keep up with the newsgroups I'm interested in. The fact that some educational materials (RFCs, for example) are only available online muddies the waters considerably.

And If The Power Went Out? Programming (oops... can't do that without power), or reading (oops... can't do that without power, either.) I used to be able to read by candlelight, but I'm not sure my eyes are up to it any more. Take a walk.

Name: Carol Haberberger

Occupation(s): Member, BMUG Board of Directors

Email Account(s): carol_haberberger@bmug.org

Online Activities: Planet conferences, some email.

Estimated Daily Online Time: I enjoy the computer and like the challenges. I'm online daily, but it is limited to about an hour, between Planet and Netscape.

Guilt/Denial/Other Therapeutic Issues:

My addictions are more like reading and Peet's [ed., coffee]. My guilt and denial are real, not virtual, and the therapeutic interventions sans machina.

And If The Power Went Out? No answer

Name: Scott Beamer

Occupation(s): Mac freelance journalist

Email Account(s): CIS, AppleLink (just closed), Planet BMUG, eWorld, AOL

Online Activities: I do my Internet stuff with the free hours on the two online services.

Estimated Daily Online Time: I probably spend between two and four hours online a week. Most of the time I spend reading BMUG messages, my asthma newsgroup, apple press releases, and Tidbits. I neither get nor send much email. I find the WWW too much like evening TV to enjoy it. (Just because your TV has 500 channels doesn't mean there's anything to watch.)

I'm rarely online on any service more than once a week. The reason I have so many accounts is that they are relics from when I needed them to send articles to a particular magazine or editor.

Guilt/Denial/Other Therapeutic Issues: Just as a reminder that we don't all have the same addiction(s), I can safely say I have no online addiction—we're not talking about my Mac addiction, right?

Estimated Daily Online Time: No answer

Name: Jeff Eaton

Occupation(s): I'm a consultant, writer, and graphic designer—jack of all trades, basically.

Email Account(s): I have one email account on AOL.

Online Activities: Chat with other folks, do research for my columns and articles, do tech support for various folks, grab files, communicate with various clients via email, and a whole lot more that I can't remember at the present time.

Estimated Daily Online Time: Upwards of eight to ten hours. That includes both "official work" during the day, "unofficial work" after hours, and "recreational time."

Guilt/Denial/Other Therapeutic Issues: ::stands nervously in the middle of a crowd::

Hi, My name's Jeff, and I'm an online addict.

And If The Power Went Out? If the power were to ever go out, I'd probably find a flashlight, sack out on the couch, and read a book. Or I'd call some friends and get together for pizza. I may be a heavy user, but I like to think I can quit anytime I like. ;)

Mexico City

I'm sitting in Mexico City, trying to wrap up this article, on my PowerBook, while watching CNN on satellite TV. Although it's been a week since I've logged on anywhere, my hands aren't shaking, and I seem to be okay. Still, the debate about how much time I (or we) should spend online has stayed present in my mind.

The dichotomy between the haves and have-nots in Mexico City is readily apparent. Despite incredible pollution, and a population of 23,000,000 (!), the rich enjoy fine houses, fancy restaurants, discos, exclusive golf courses, and servants. From cooks to housekeepers to security guards to guys, who help you back your car out of your parking space at the grocery store, to guys who open and close security gates, labor is an incredibly cheap commodity. I was struck by how much my friends in Mexico take their status and lifestyles for granted; and it reminded of how my online cronies and I take our more privileged, insider positions for granted.

Although we've invested lots of time and energy learning how to squeeze every bit possible out of our Mac resources, I think it would be a mistake to err on the side of egocentrism, and assume that because our Macs play such significant roles in our lives, computers play equivalent roles in most people's lives. Although it's typical for BMUG main meeting attendees to boo and hiss whenever Windows or Bill Gates are mentioned, 85% of the world uses Windows, and Bill

Gates does not worry about paying his rent; and, although Bill may be the über-nerd, he's living the way he wants to live, doing the things he wants to do, and—for one man—having an incredible impact on our world, and our future.

To bring this full circle, each of us has to choose our own path, deciding what constitutes “quality of life” and acting accordingly. My host in Mexico City, a divisional General Manager for Proctor and Gamble, Latin America, thought that the idea of spending excessive amounts of time online, as opposed to “experiencing life directly,” was “sad.” Of course, he made us watch *Friends*, *Seinfeld*, *Chicago Hope*, and a complete Sunday of NFL football—all, no doubt, examples of “experiencing life directly” and to its fullest!

The Meaning of Life?

The good news is that using our Macs and taking advantage of rapidly proliferating online opportunities can be incredibly rewarding, enriching, and illuminating. The bad news is that it all takes time. If being online is what really gives your life meaning, then (no pun intended) more power to you. You might, however, want to make a note to yourself to remember to leave some time for family, friends, and non-computer interests—assuming, of course, that you can think of any!

When I explain the Web to people who've never seen it, I describe it as the

illegitimate love child of television and the library stacks we used in school; a fairly accurate description that manages to convey the ability to search, made that much easier when the computer(s) do(es) the work. Surfing the Internet is fundamentally the same in spirit as channel surfing, which means that there has to be a computer equivalent for “couch potato,” and that the same issues apply for both.

Log on and have fun (and make sure your BMUG membership is up to date!), but keep your life in balance. The power and control our CPUs give us can be incredibly seductive, but being a Mac-potato (for want of a better term) still boils it all down to always looking at life through the same 14-to-21-inch window—while sitting on your duff. And, having one egg in one basket is needlessly self-limiting. ✈

Bruce Linde is a musician, a recovering online-a-holic, a former BMUG staffer, and currently a member of BMUG's Board of Directors. He wishes he could spend as much time playing tennis as he spends online, but tennis courts still cost more than Macs, and the people he works for actually expect him to work for his paychecks. He thinks that volunteering at BMUG is way cool (hint hint!), and loves to hear from anyone interested in working on the Helpline, the BMUG Newsletter, or any of the other cool projects always in motion at BMUG.

Even logging on for two hours a day works out to an incredible time investment:

365.25 days x 2 hours = 730.48 hours

730.48 hours/24 hours = 30.44 24-hour days

730.48 hours/40 hours = 18.26 40-hour weeks

Repeat after me: I *do* have a life! I *do* have a life!
I *do* have a life...

Evolution of the User

by Andy Brooks

Introduction

Not long ago I was confronted with an individual who was certain that anyone who had ever come into contact with a computer on a consistent basis could easily navigate, manipulate, and control his or her machines. Not because they were savvy but because they were forced to, simply because they had no alternative. It was also stated that anyone who could not do this was probably a moron (exact words. Can you believe it?) and shouldn't be living in the Information Age.

I did not agree with this opinion but could not articulate my feelings on the subject. Just recently, after a fair amount of study, I have what I think is a successful attempt at articulating the different users that exist within the computer world.

There are four categories, each of which is listed and described below. I think you will find these descriptions accurate, and may probably find your place within one of them. I cannot stress enough, however, that none of these categories is "better" than others, and that using a computer is *not* a competition. Categorization usually fosters this belief, and in the computer world, it can be dangerous not only to friendships, but to your health. (Stress is the leading illness among computer users in work-related areas.)

But please read on, and I think you will agree that my findings are valid.

Applications User

I have spoken to many people who use computers on a daily basis, mostly at work, who are familiar with one or more applications. Usually these applications are word processing, database, or spreadsheet programs designed specifically for the company they work for, or are launched at all times on the machine. These applications are usually pre-configured to save to specific directories, to print to specific

printers, or are custom-built around the company's specific needs.

This sort of user is an Applications User. Although they use computers on a consistent basis day in and day out, they are less likely than any of the other user categories to know what machine or platform they are running under. They are also less likely to know or have the time to learn anything about their computer outside their specified environment. Applications Users are this way not because they aren't bright enough to learn, but mostly because (a) they don't have the time to sit down and learn about their machine or (b) don't have a desire or feel a need to learn anything more than what their job description calls for.

Applications Users' numbers are dwindling with the advent of the PC revolution, and a shift is being made toward the Applications User and the End User. However, I would suggest that the bulk of all computer users globally who use a computer at least once a week fit into this category.

End User

With the PC revolution came a new idea, and a new frustration. It was possible to have a computer that was as powerful as the one in the office reside in your home, and allowed for the creation of the Home Office. Users now had a more powerful, but daunting, way of managing their lives. It was now possible to take work home or to complete projects from your living room. But with this convenience also came the struggle of learning all you can learn about your computer, in order for it to perform optimally and be of any value.

This sort of user is the End User. They own a computer in the home or run a small business, usually with either one or a small network of computers. They usually hold a basic to medium

knowledge of the machine's disk operating system and can configure their machines to perform specific tasks. These users also have knowledge in disk management, read periodicals like *Macworld* or *PC World*, discuss upgrade or configuration options with their friends, and can navigate fairly cleanly through their system. However, these users, probably comprising the bulk of computer users in the United States, hold a knowledge that only goes a certain distance. End users oftentimes have difficulty distinguishing between RAM, ROM, and hard drive memory, do not want to risk upgrading internal hard drives, RAM, or peripheral cards to their machines, and most likely have difficulty distinguishing between the components of their machine when the lid is taken off.

End Users' ranks have swelled tremendously since the mid-1980s and continue to grow. The Macintosh OS has helped considerably in fostering the End User ideal. With ease of navigation, simplicity in setup, and a continuous structure in applications navigation, the end user can set up and start being productive the same day they purchase a machine. To give proper credit, Windows95 is a tremendous boon to DOS users. Even though Win95 is buggy, slow, and often times conflicts with applications, it is still a leap forward in the PC users' world.

Power User

A friend once told me a very amusing definition of a Power User. He said, "Power Users are people who know a lot about computers but still have a life." The Power User is the logical evolution of the End User. When an End User suddenly becomes very interested in their computer and begins doing more extensive study on not just applications but also hardware, diversity, software management, upgrade options, and peripheral installation, they graduate to the status of the Power User. The most inter-

esting aspect of a Power User is that they usually don't come from a computer-specific background. Most Power Users I have spoken with do not hold degrees in computer science, nor are they necessarily technically inclined. As an example, a Power User may be able to find out why your system won't start up or continuously crashes in a matter of seconds, but couldn't point out the distributor cap in their car.

Power Users are often the place an End User will go for suggestions and help. They can tweak a system for optimal performance, diagnose both software and hardware problems, and usually are fluent in more than one type of operating system. Power Users also may evolve into the sub-categories of Consultants and Systems Administrators.

I have had many complaints from End Users that Power Users tend to hold an elitist attitude in the computer world. Although this is not a sympathy request or a justification for the elitist opinion, what the End User may not realize is that the Power User has invested a great deal of time (and probably money) in their endeavors, with no promise of personal or financial gain. If a Power User supplies answers on a BBS such as Planet BMUG in a public conference, they are probably also answering hundreds of questions via private email. A Power User who is not a Consultant or a Systems Administrator garnishes no gain except satisfying a need to help others.

The Power User, too, has limits. Because, for the most part, their knowledge of computers is secondary to their "real job" or their formal interest of study or

work, they are limited to what they can learn from practical experience and trial and error. It is rare that a Power User ever evolves past their current position, because they do not have the time, financial ability, or interest to pursue the formal education required in becoming the fourth category of user, the Programmer/Engineer.

The Programmer/Engineer

This evolution isn't really an evolution at all. Programmers and hardware/software engineers usually start fresh out of college. They have had the formal training in dealing with the complex, deep inner workings of a computer, its software, and its components. Becoming a full-time, professional Programmer or Engineer is almost a lifetime commitment. This is not to exalt the position these individuals have in the computer industry, as they usually must sacrifice much (a "life," for instance) in order to survive in such a competitive job market.

Programmers/Engineers can talk source code and machine language all day, and usually do. They are the applications and components masters, and continue to drive towards systems that are easier to use for the rest of the categories.

The Programmer/Engineer probably holds the smallest number of users in the User category breakdown. They are at the top of the computer user pyramid, and provide the machines and software that the rest of us work on.

Conclusion

None of the categories listed above is "better" or "more desirable" than the

others. Each one is distinctly different and necessary in the computer world. If everyone were a Power User, the saturation of that market would be so great that there would be a lot of people sitting at home watching Geraldo on the tube. Each category has a use and a function and each category is dependent on the others to be successful at what it does.

If you find yourself in the Applications User category, and aspire to the Power User category, then that goal is entirely attainable. You must remember that every Power User you meet at one time was in the same position as you, and it probably took them a lot of time, practice, independent study, and sleepless nights to get where they are. If you are an End User and aspire to be a Programmer or Engineer, then your best option would be to apply to a university that has an excellent Computer Science college.

In all, I have found that these categories best define the users in the computer world, and any reader of the BMUG Newsletter probably fits well into one of these categories. If you are reading this article, then you are probably either an End User or a Power User. Because Applications Users probably don't have computers at home and because the number of Programmers/Engineers is comparatively so small, you probably don't fit into those two categories.

Carry on, and keep computing!

The author free-lances HTML design, hides under his bed during lightning storms, and can be reached at aceebro@netcom.com for comment.

Legal Practice

Specific Software for the Macintosh Computer

by Randy B. Singer, Esq.

One of the biggest problems Macintosh using attorneys face is finding out what software is available specifically for use in the law office. The problem has two components. First, Apple Computer gave up directly supporting most vertical markets (i.e. sales to professionals) a few years ago. Previously, the Apple Market Centers across the country catered to legal professionals and handed out a publication called *The Apple Legal Solutions Guide*, which contained over 80 pages of listings of software suitable for use by attorneys in the practice of law. That publication has not been updated, or generally available, for several years now. Second, most vendors of legal-specific software for the Macintosh are small operations which do not have a large budget for advertising. Without the help of Apple Computer, these companies are almost invisible to attorneys looking for their products.

This article is my attempt to help out all of the attorneys that I frequently hear from who need to find software to use in their law practice on their Macintosh. As a practicing attorney, the author doesn't have the time to update or maintain a project as huge as *The Apple Legal Solutions Guide*. Instead, what I have undertaken here, is a limited list of the best currently available legal-specific software packages for the Macintosh. Except for a very few software titles that I feel are of special interest to attorneys, software that is adaptable, maybe even essential, for use in a law office, but which is not written or directed specifically towards use in a law office, will not be included. You should *not* assume that if you do not

see a particular type or brand of software listed here that you feel is necessary to make the Macintosh a viable platform for use in a legal practice, that it does not exist for the Macintosh. Before you come to that conclusion, you should contact the author of this list.

I will do my best to keep this list updated and posted in the Legal section on America Online (Keyword: Legal, then go to the L.I.N. Software Library). New versions will always be posted there first. *I would appreciate it if people posted this file around to other online services and bulletin boards.* I would also appreciate hearing about errors, updates, additions, etc. to the data contained herein. Vendors should feel free to contact me directly via email or snail-mail. Press releases are welcomed.

The vast majority of the following vendors are willing to provide free demonstration versions of their software to attorneys. Some companies (especially those that sell less expensive software) may require you to send a blank floppy disk and a self-addressed, stamped envelope for the demo of their product. Call them first and ask.

I have attempted to give my recommendation, among the following software choices, to attorneys in the past, but I have found that the great variety in the available software, coupled with the variety in the way that different attorneys and firms practice, makes it impossible for me to continue to do this. I recommend that you talk directly with as many vendors as possible, have them send you their literature, narrow your choices down to a few packages, and then carefully evaluate their demonstration versions before making a purchase decision. *Don't make a hasty choice.* You will have to live with,

and constantly use, the software that you choose, everyday. Nothing will hold up the productive automation of your law firm like choosing software that does not work as effectively or as enjoyably as you hoped it would. Some attorneys in firms have been known to refuse to use a computer again after struggling with software that they didn't like. Take your time and put demo software through all of its paces and ask the vendor as many questions about it as possible

There are a few packages that you might want to request demonstration copies of because they provide somewhat of an overview of the class of software that comprises law office management packages. Thus they may help you to pare down the choices much more quickly. These are: Managing Partner, Law Office Manager, Amicus Attorney, and MacLawyer 2d. These four products are very different from each other in that Managing Partner is based on the relational database Helix, Law Office Manager is based on the relational database Fourth Dimension, Amicus Attorney is written in C++ (it is a stand-alone application not based on a third-party search engine), and MacLawyer 2d is based on the flat-file database FileMaker Pro (FileMaker Pro is now fully relational, but a rewrite of any application originally based on the older flat-file version will be required to take advantage of the new relational capabilities.) Trying each one will give you a feel for the different styles of law office management packages in that generally all packages written in FileMaker Pro will be similar to each other, the programs based on Fourth Dimension will be similar to each other, etc.

Other Macintosh-using attorneys would very much appreciate hearing your

comments about software that you have tried. Please leave a post in the “Macs and Only Macs” or the “BMUG Legal SIG” folders in the Legal area on America Online, or send your comments directly to me via e-mail and I will post them for you.

When you contact vendors, please let them know that you heard of them from this list. This will encourage them to help me to keep this list current, and vendor feedback will let me know whether maintaining this list is worthwhile and/or appreciated by the legal community.

The quality of software written for the Macintosh for the legal market is extraordinarily high compared to what is available for IBM compatibles. Most of these products have been created by practicing attorneys. Writing such a product and marketing it is not easy, and in many cases the mere existence of the product is indicative that the software’s author is a true Macintosh enthusiast. (Most attorneys can make ample amounts of money simply by practicing law, and have no need to invest their time developing software for a limited vertical market.) Please make sure that you thank the vendors that you contact for their support of this market and acknowledge the work that they have invested in their products.

Some features to look for in law office management packages:

- The environment in which the program was written. Most are based on third party database engines. Look for whether the underlying database is relational or flat-file, and whether windows are modal. (Neither of these features are critical, but using a database that is relational, and having windows that are not modal, are two very nice features.) The underlying database engine strongly influences the look and feel of the application based on it. The most common database engines are: Fourth Dimension, FileMaker Pro, Fox Pro, and Helix. Though there are several packages based on HyperCard, they have not been included here because the author has a

prejudice against them; such applications tend to be slow, awkward, modal, and have non-intuitive interfaces.

- If the software is being purchased to be used over a network, be certain that it is suitable for the type of network that you have and also that it fits in with your plans for future network growth. Is the software based on the client/server model? Does it get unreasonably expensive if you must purchase a license for all of the attorneys in your firm? Do licenses for support staff cost as much as for attorneys?
- Rules based calendaring/docketing. (i.e. tickler) This is one of the most asked for features in a law office management system, but it is not a universal one. This feature allows you to enter the statutory deadlines embodied in each court’s local rules as rules for how the program is to automatically set up alarms/calendaring for a given case. For instance, once set up, you can enter the filing date of a civil action and automatically all other dates (such as last date to file a demurrer, discovery cut-off date, mandatory settlement conference, etc.) will have a calendar date and/or a reminder set for them. Make sure that this feature works the way that you expect it to. For instance, if you push back the date for one deadline does the program change all the others or leave them alone?
- If time and billing abilities are included, how comprehensive are they? Are the included billing forms suitable for your practice? Is billing automated?
- Is trust account tracking included or is there a provision to link to another software package that handles trust accounts? Are general accounting features included that are compatible with the types of accounts and billing that you do. Do you have to have a knowledge of accounting to use the programs accounting feature, or is a metaphor used that is easy to understand and use? Are the

accounting features specific to the practice of law, or will it be difficult to figure out what accounting features apply to your practice and which don’t?

- Can the data from your previous contact manager be easily imported?
- Does the program force you to purchase other software programs, which link to the basic package, to round out the customary features that you would expect in a law office management package? Are the extra programs that you must purchase ones that you would prefer to use? (For instance, does the program rely on links to a time and billing package with an interface you don’t care for?) Do you have to purchase so many other software packages to get the required functionality that the program becomes uneconomical and/or too complicated?
- Is the package suitable for your legal specialty? For instance, if you are a litigator does the program keep track of all witnesses, client contacts, medical specialists, insurance agents, etc.?

What the future holds for this list:

Though there are comments that accompany most listings, these comments do not necessarily reflect the full feature list of each software package, nor do they mean that the author has personally reviewed the software package that the comments pertain to. However I have at least casually looked at many of them. With the cooperation of the vendors, I hope to remedy this situation in the future and be able to offer more informed comments.

If I get the time, energy, and enough positive feedback from both attorneys and the vendors involved, I hope to reorganize this list as a table with checkoff boxes which indicate the features that each software package includes. That way you will be able to quickly compare all of the packages by feature, price, etc.

Now, on with the show:

Law Office Management Software

Amicus Attorney

Gavel & Gown Software

Contact person: Brian Dunkin

184 Pearl Street, Toronto,
Ontario, M5H 1L5 Canada.

(800) 472-2289

World Wide Web address:

<http://www.io.org/~amicus>

\$399

(Includes rules based calendaring. Integrated calendar, tickler, contact management, time entry, case management, phone call management. Links with several popular third party stand-alone packages including Brief Accounting, Quicken and Timeslips. Unique in that it is not based on a third party database engine, but rather it is written in C++, so the interface is unusually clean and intuitive, and the program is fast. Recommended by the author of this list.)

Office Wiz For Law

Oryx

1867 Union Street

San Francisco, CA

(415) 563-9971

fax (415) 563-0238

\$695

Contact: Royee Chen or Jack Branning

(Fully relational, based in Fourth Dimension. Includes time and billing.)

Law Office Manager

Avocat

1402 Riverview Tower 900

South Gay Street

Knoxville, TN 37902

(800) 521-6588

(615) 523-9270

AOL: Avocat

Contact: Lee Riggs

(Law Office Manager is the best-selling integrated law office package for the Macintosh. Based in Fourth Dimension. Links to TimeSlips. Links to the program Brief Accounting [see below] are in the works.)

Managing Partner

Scaramella & Hoofnagle

I-46 Executive Mews

1930 Route 70 East

Cherry Hill, NJ 08003-4189

(609) 424-2100

fax (609) 424-4896

Contact person:

Michael S. Scaramella

\$2,500 single user, additional
\$1,500 second user, \$1,000 each
additional user.

(Client-server based multi-user legal practice management system. Case management, calendaring and task management, business and trust accounting, check writing, time and billing, built-in intelligence to prevent errors.)

Legal File Management System

Computer Consulting Group

4215 Glencoe Avenue 1st Floor

Marina Del Rey, CA 90292

(800)-892-5777

\$795 single user, \$295 each additional workstation

(Based on FileMaker Pro. Cross-platform [both Mac and Windows], integrates with certain other productivity applications from other vendors for uses such as word processing and document imaging. Has a "voice notes" feature which allows you to dictate case notes onto your Macintosh.)

MacLawyer 2d

CPO Law

427 S. Adams Street

Delphos, OH 45833

(419) 695-8480

Contact: Clayton P. Osting

\$109

(Cross platform, based in FileMaker Pro. Unusually inexpensive for such a complete package. MacLawyer provides file management, time and billing, calendar, appointment notice, general journal, employee time record, and payroll tax database. MacLawyer also provides telephone log, contact listing, and to do lists. **Includes many features especially useful to personal injury specialists.**)

Automation Law

Lawtek Computer Systems

333 25th Street, E., #600

Saskatoon, Saskatchewan,
Canada S7K 0L4

(306) 934-1160

(Fully relational system that includes time and billing, client conflicts, calendaring, trust accounting, telephone and postage tracking, and security.)

Legal Practice Made Perfect/LPMP Calendar

Galactic Salvage, Inc.

6517 Hillcrest Avenue, Suite 310

Dallas, TX 75205

(214) 363-2400

\$395/\$295

(Includes time and billing, calendaring, conflicts, a huge variety of reporting formats. Rules-based calendaring and docket system.)

LexaFile and LexaDocket

Xram Xpert Systems

344 West 23rd Street, Suite 7C

New York, NY 10011

(212) 989-8559

Contact: Ronald Marx

\$699/\$299

(These two programs are available separately; used together they work as an integrated package. Includes support for litigators.)

MacEsquire Express

Synergy Marketing Communications, Inc.

11 Joseph Court, Suite 213

Syosset, NY 11791

(516) 935-9151 phone and fax

\$795

(Includes time and billing, accounting, calendaring and docketing, mail merge.)

MacLaw

Manhattan Software

865 Manhattan Beach Blvd.,
Suite 204

Manhattan Beach, CA 90266

(310) 545-6462

(310) 545-9425 fax

\$8,000 (no, this is not a misprint)

(Includes billing, calendar and docket, and phone call tracking. Separate modules for PI, bankruptcy, taxation, real estate, patent, trademark, corporate, and probate work.)

TimeSaver Law Office Management System

Home Town Systems Ltd.

P.O. Box 2306

Dawson Creek, BC

Canada V1G 4P2

(604) 782-3322

(604) 782-1212 fax

\$1,695

(Includes both time and billing and financial management, password feature, and trust accounting.)

NowUp•To•Date/ NowContact bundle

Now Software, Inc.

921 S.W. Washington, Ste. 500

Portland, OR 97205

(503) 274-2800

(800) 237-3611

fax (503) 274-0670

\$179 for bundle. Heavily discounted when purchased via mail-order catalogs.

(This is the premier contact management/calendaring package for the Macintosh. It is a general use package, not specifically for law office use, but it is customizable. Included here because many attorneys, especially sole practitioners, prefer it to the legal-market specific packages. It includes several features which are absent in even the best packages specifically for law office use; including data entry shortcuts, extensive Avery label support and multiple address book and calendar printing formats. It is fast, easy to use, networkable [in the most recent incarnation], and inexpensive.)

Full Contact

Pitch Software

PO Box 110248

Campbell, CA 95008 USA

(408) 374-5504

(408) 374-0560 fax

Contact: Lorette Keane

\$199 (Heavily discounted when purchased via mail-order catalogs. Ask about

discounts for "side-grade-ing"; that is, switching from another general purpose personal information manager.)

(Not designed specifically for law office use, but this product *is* designed specifically for business use. Full Contact is the only general electronic organizer to keep track of the many relationships between names, action items, and events on a calendar. The different functions are fully integrated, unlike other general personal information managers for the Macintosh which use AppleEvents to link separate programs. Fully relational, very flexible, automated import of data from other PIM's, drag and drop calendaring, many nice touches. Has most of the features of the Now product, and much more. A personal favorite of this list's author.)

Bufete

Siscomp Inc.

Siscomp Bldg, Suite 202

18 Comercio Street

Ponce, Puerto Rico 00731

(809) 848-0666

(**Entirely in Spanish.** Integrated, fully relational package, based in Fourth Dimension.)

(Also see **Legal Mind**, below.)

Time and Billing/Accounting Software

Brief Accounting

Pan Pacific Professional Projects

250 H Street, #325

Blaine, WA 98230

(604) 533-8315

(604) 533-8749 fax

\$695 single user,
site licenses available

Contact person: Colin McPhail

(Very popular package. Several law office management packages link with this program as it complements their abilities. Comprehensive accounting, client trust tracking, and time and billing)

Legal Mind

Regency Software

3033 Fifth Avenue, Suite 425

San Diego, CA 92103

(800) 943-6463

(619) 297-9526 fax

\$795 for one or two attorneys, or \$1195 for 5. After that, each group of 5 timekeepers is \$495. Non-timekeepers can log on free.

(Written in FoxPro. A full service administrative program: conflicts checking, time keeping, billing, trust accounting, full general ledger - accounts receivable, accounts payable, journals, checkbook reconciliation, check printing, etc.. It does not have the management tools for document tracking. Optional docket and calendar module available for \$295.)

DesignSoft's Time and Billing

DesignSoft Co.

P.O. Box 1130

Wheaton, IL 60189

(708) 858-5363

(800) 426-0265

(708) 653-0647 fax

email: custserv@designsoft.com

WWW page:

<http://www.designsoft.com>

\$149.95 (Price doesn't include optional modules.)

(Not designed specifically for the legal market. Nevertheless this is an excellent package adaptable to the time and billing needs of a law office. Highly recommended by the author of this list. Be sure to also order the separate StopWatch module to track time. Optional modules provide accounting functions, links with Quicken, databases, etc.)

TimeTracker/TimeSlice

Maui Software

189 Auoli Drive

Makawao, Maui, HI 96768-9313

Contact: William Modesitt

(808) 573-0011

(808) 572-2406 fax

email: mauisw@aloha.net

ftp site: <ftp://hookomo.aloha.net/pub/users/mauisw>

WWW page:

<http://hookomo.aloha.net/~mauisw>

~mauisw

\$30/\$65

(An excellent, inexpensive, simple to use but comprehensive utility that does

only one thing, but does it very well: it is a stopwatch for keeping track of time spent on different tasks and calculating charges. Does not do billing, but comes with a decent template for exporting data to FileMaker Pro for automated billing. You can also export data to your word processor. TimeSlice provides expanded capabilities over TimeTracker. Many attorneys feel that this program is all that they need, or want, to handle their time and billing requirements.)

Timeslips for the Mac

Timeslips Corporation
17950 Preston Road, Suite 800
Dallas, TX 75252
(800) 285-0999
(214) 248-7489 fax

(Though not made specifically for law office use, Timeslips is an industry standard. The latest version (version 3.0, not to be confused with Timeslips III) has a much improved graphical interface, which goes a long way in solving the one big problem of previous versions, a non-intuitive interface. If you previously tried Timeslips and hated it, it is worthwhile to give it another try. However, this program may still be too complex and non-specific for some attorneys. Now includes contact information management, and phone dialing.)

Client Information and Billing System (CIBS)

Macworks

4211 Balcones Woods Drive
Austin, TX 78759
(512) 343-8960
\$595, \$35 for demo

(Based in FileMaker Pro. Automates regular billings and account reports.)

Components

Satori Software
2815 2nd Avenue, Suite 295
Seattle, WA 98121
(206) 443-0765
(206) 728-7068 fax

(Legal Billing, Satori's previous product for the legal market, is no longer sold, as it is based on outdated technology. Satori now markets Components, which is a general accounting package, which was developed with an eye towards the legal market. However, the company admits that some features requested by some large or

specialized law firms may be missing, so it would be best to discuss this with the company before purchasing Components.)

The Legal Eagle

Syscom Incorporated
230 Hilton Avenue, Suite 217
Hempstead, NY 11550
(516) 481-8201
\$995 single user, \$1,295 multi-user
Legal-Acc
Legal-Acc Software Systems
31 Sunnypoint Crescent
Scarborough, Ontario
Canada M1M 1B8
(416) 265-6719 phone and fax
\$995

(Integrated, cross-platform, networkable accounting and time and billing system. Fully relational. Customizable.)

Litigation Software

Trial De Novo

De Novo Systems
3910 NE 42nd Street, Ste. 100
Vancouver WA 98661-3117
(360) 695-9372
(800) 755-9744
\$495 for up to 5 users.
Contact: Fred Brock

(This is an impressive product, new to the market. A comprehensive package based in FoxPro. Links to your preferred word processor and personal information manager via AppleEvents.) (Note: this vendor also has an older HyperCard-based product that, frankly, is not in the same league as the other packages mentioned here. Try before you buy.)

TrialMaker

(617) 334-3367
(A litigation support database program.)
Ready For Trial
Robins Analytics
245 East 6th Street, Ste. 821
St. Paul, MN 55101-1988
(612) 224-1289
(800) 767-3239
(612) 224-2633 fax
Contact: Jenifer Robins
\$995

(Previously the standard in the Macintosh world for litigation preparation. Sadly, the rumor is that soon this program will no longer be supported. The logic of giving up on a mature product in one market to service another escapes this author.)

Cudgel

GreenLight Software
79 West Monroe, #1320
Chicago, IL 60603
(312) 782-6496
(312) 782-6494 fax
\$995

(Based in Helix Express. Fully relational. Manages evidence, witnesses, cites, files, and expenses. Integrated docketing.)

Personal Injury Management System

Edward W. Hedrick

5101 Addison Drive
Charlotte, NC 28211
\$175

(Based in FileMaker Pro. Covers all phases in managing a personal injury case, including interviews and letters. Keeps track of medical treatment, negotiations, etc. Surprisingly inexpensive for its competence and capabilities.)

(Also see MacLawyer 2d, listed above under Law Office Management.)

Bankruptcy Software

MacBankruptcy and MacBankruptcy Lite

New Hope Software
P.O. Box 1306
Mercer Island, WA 98040
(206) 232-9247
\$950/\$495

(Simply the best bankruptcy software for use on *any* platform. Not simply a forms package, this is a document assembly application that guides you through the process quickly and intelligently. Lite version for smaller, more cost sensitive firms are available.)

Bankruptcy Mac

CPO Law
427 S. Adams Street
Delphos, OH 45833
(419) 695-8480
Contact: Clayton P. Osting
\$109

(Cross platform. FileMaker Pro based. Very, very nice for the price!)

MacForms-Bankruptcy Forms

MacForms

(509) 535-4382

Contact: Roger Williams

\$?

(Based in FileMaker Pro. A complete set of bankruptcy forms, linked to an intake sheet and worksheet so that all of the intake information is automatically transferred to the hot fields of the forms. No information has to be input twice. Cross-platform.)

Lawyer Bankruptcy Software

Lawyer Forms, Inc.

3209 Ingersoll Ave.

P.O. Box 12097

Des Moines, IA 50312

(515) 255-7139

(515) 255-2336 fax

Bankruptcy and HUD-1

Technovation

(909) 736-1169

Copyright, Patent, and Trademark

CTP Kit

Milum Corporation

P.O. Box 163985

Austin, TX 78716

(512) 327-2255

(800) 257-2120

(512) 328-9824 fax

\$395

(Forms/database system which includes everything needed for applying for and maintaining intellectual property marks. On-screen forms are WYSIWYG. Detailed on-screen instructions.)

Standardized Forms

MacForms-California Judicial Counsel Forms

MacForms-BAJI forms

MacForms

(509) 535-4382

Contact: Roger Williams

\$ - based on modules purchased.

(California Judicial Counsel forms, linked to an intake sheet and worksheet

so that all of the intake information is automatically transferred to the hot fields of the forms. No information has to be input twice. Cross-platform. Based in FileMaker Pro. BAJI jury instruction forms package greatly facilitates the selection and printing of appropriate jury instructions.)

Caselaw and Practice Guides on CD-ROM

(Offerings vary considerably by state. The author of this list would very much appreciate information about other vendors not listed here, and to which states their materials pertain.)

Premise

West/Rutter

(800) 255-2549 ext. 989

(The Rolls Royce of the field. West's keynote system is unparalleled and probably impossible to duplicate. Case summaries, hot links, time and matter tracking, plain English searches, etc., make Premise software the best there is. Previous problems with the stability of the software have been completely solved. Probably too slow to comfortably run on 68030 or older-based Macs. Be prepared for a premium price.)

Law Desk

Bancroft Whitney/Lawyers Cooperative Publishing

50 California Street, 19th floor

San Francisco, CA 94111-4624

(800) 762-5272

(415) 732-8632

World Wide Web:

<http://www.lcp.com>

(Uses Folio search engine. Headnotes, case summaries, very clean interface. Fast.)

CalDisc

AccessLaw

(800) 477-5396

(Uses Folio search engine. No amenities, but a reasonable price and you own the disks.)

Law Disc

National Legal Databases

(800) 533-0159

(Uses Folio search engine. The VW Beetle of the field. Rock bottom price with few amenities.)

Continuing Education of the Bar (CEB)

University of California

2300 Shattuck

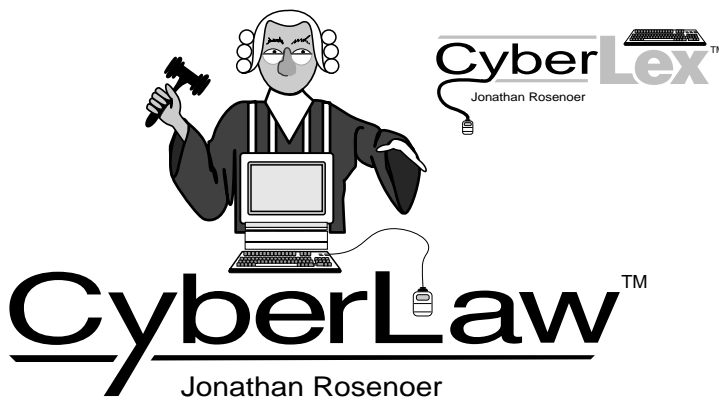
Berkeley, CA 94704-1576

(This company has just released a large number of practice guides and forms on CD-ROM. They use Folio as a search engine, but CEB has not put the Macintosh version of the Folio software onto the disks. If you are interested in one of their many titles though, you can seamlessly use them by purchasing FolioViews for the Mac directly from Folio. [Folio: (800) 543-6546, contact: Kathleen Burnham.]

About the Author: Randy B. Singer is an attorney living in Woodland, CA and practicing in San Francisco, CA. He is an experienced civil litigator. Mr. Singer is a co-author of the **Macintosh Bible**, an Apple Legal Fellow, and his work can occasionally be seen in **Law Office Computing** and **Law Technology Product News**. Mr. Singer also co-hosts the yearly MAC-LO (Macintosh in the Law Office) trade show held each January in San Francisco, concurrent with MAC-WORLD Exposition. [Note: The show will not be held in January of 1996.] He also hosts user group meetings for attorneys who use the Macintosh computer in San Francisco, CA. [The meetings are held the second Wednesday of every month at 6pm at the law offices of Nossaman, Guthner, Knox and Elliott, 50 California Street, 34th floor, San Francisco. Meetings are free. Everyone is welcome.] He can be reached at 1431 Edwards Circle, Woodland, CA 95776-5775; America Online: RBS; AppleLink: Law.Singer; Internet: rbs@aol.com.

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Defamation

I. Control & Liability

Will a New York court decision force computer online services to construct full time editorial boards possessing sufficient knowledge, legal acumen and access to experts to continually monitor postings on their bulletin boards and exercise on-the-spot discretionary calls or face multimillion dollar lawsuits at every turn. In *Stratton Oakmont, Inc., et al. v. Prodigy Services Company*, NY Supreme Court No. 31063/94 (May 24, 1995), the family orientation of the Prodigy Services Company—supported by its use of screening software, usage guidelines, and management of contractors hired to run its online discussion forums—was held to give Prodigy “sufficient control over its computer bulletin boards to render it a publisher with the same responsibilities as a newspaper.” In response to the claim its decision would chill the flow of speech across Prodigy’s network, the court commented that a “chilling effect is exactly what PRODIGY wants, but for the legal liability that attaches to such censorship.” Will this decision drive online services away from content regulation? Or will the market, as the court supposes, compensate a network for increased control and liability exposure?

II. Money Talk

Prodigy is a computer online service with at least 2 million subscribers, who communicate with each other and with “the general subscriber population” using Prodigy’s bulletin boards. Prodigy “contracts with Bulletin Board Leaders, who, among other things, participate in board discussions and undertake promotional efforts to encourage usage and increase users.” “Money Talk” is a Prodigy

bulletin board where members can post statements regarding stocks, investments and other financial matters. It may be the most widely read financial computer bulletin board in the United States. Charles Epstein is Money Talk’s Board Leader.

In October 1994, a still-unidentified person posted on Money Talk allegedly defamatory statements about Stratton Oakmont, Inc., a securities investment banking firm. These statements accused Stratton and its president, Daniki Porush, of committing criminal and fraudulent acts in connection with the initial public offering of stock of Solomon-Page Ltd. This offering was described as a “major criminal fraud” and “100% criminal fraud.” Porush, the posting alleged, was “soon to be a proven criminal” and his firm, Stratton Oakmont, was characterized as a “cult of brokers who either lie for a living or get fired.”

Stratton Oakmont and Porush (collectively, “Stratton”) responded by suing Prodigy and the unidentified person who posted the statements onto Money Talk. One of the claims is for per se libel. To “advance” the litigation, Stratton requested that the trial court determine (1) whether Prodigy is a “publisher” of the alleged defamatory statements, and (2) whether Money Talk’s Board Leader, Epstein, acted as Prodigy’s “agent” for the purposes of this action.

III. Family Orientation

Stratton’s claim that Prodigy is a publisher is based in large measure on its policy (started in 1990 when it commenced operations) that it is a family-oriented computer network. In articles written by Prodigy’s Director of Market Programs and Communications, the court found that Prodigy “held itself out as an online service that exercised edito-

rial control.” In one such article, Prodigy stated:

“We make no apology for pursuing a value system that reflects the culture of the millions of American families we aspire to serve. Certainly no responsible newspaper does less when it chooses the type of advertising it publishes, the letters it prints, the degree of nudity and unsupported gossip its editors tolerate.”

Prodigy, however, insists its policies have changed and evolved since 1990. Prodigy claims that “the latest article on the subject, dated February, 1993, did not reflect PRODIGY’s policies in October, 1994, when the allegedly libelous statements were posted.” But says the court, consideration of the passage of time goes solely to the weight of the evidence.

To bolster its claim Prodigy is a publisher, Stratton also points to:

- (A) promulgation of ‘content guidelines’ ... in which, inter alia, users are requested to refrain from posting notes that are ‘insulting’ and are advised that ‘notes that harass other members or are deemed to be in bad taste or grossly repugnant to community standards, or are deemed harmful to maintaining a harmonious online community, will be removed when brought to PRODIGY’s attention’; the Guidelines all expressly state that although ‘Prodigy is committed to open debate and discussion on the bulletin boards, ... this does not mean that “anything goes”’;
- (B) use of a software screening program which automatically prescreens all bulletin board postings for offensive language;

- (C) the use of Board Leaders such as Epstein whose duties include enforcement of the Guidelines ...; and
- (D) ... a tool for Board Leaders known as an 'emergency delete function' pursuant to which a Board Leader could remove a note and send a previously prepared message of explanation 'ranging from solicitation, bad advice, insulting, wrong topic, off topic, bad taste, etcetera.'"

IV. Publisher Liability

"A finding that PRODIGY is a publisher is the first hurdle to overcome in pursuit of [Stratton's] defamation claims," notes the court, because "one who repeats or otherwise republishes a libel is subject to liability as if he had originally published it." Others, such as distributors or deliverers (e.g., bookstores, libraries), may be held liable only if they know or have reason to know of the defamatory statement at issue. The court explains,

"A distributor or deliverer of defamatory material is considered a passive conduit and will not be found liable in the absence of fault. However, a newspaper, for example, is more than a passive receptacle or conduit for news, comment and advertising. The choice of material to go into a newspaper and the decisions made as to the content of the paper constitute the exercise of editorial control and judgment, and with this editorial control comes increased liability." (Citations omitted.)

V. Editorial Control

In this case, states the court, the critical issue is whether Prodigy "exercised sufficient editorial control over its computer bulletin boards to render it a publisher with the same responsibilities as a newspaper." Prodigy answers that it changed its policy of manually reviewing all messages prior to posting long before the posting of the comments at issue. But Prodigy did not submit to the court documentation or detailed explanation, or dissemination of news of such a change.

Prodigy also claims that it is not feasible to review manually the 60,000 messages that are posted each day. And while Board Leaders may remove messages that violate its Guidelines, Prodigy argues they

are not "editors." More generally, Prodigy urges "that this Court should not decide issues that can directly impact this developing communications medium without the benefit of a full record." But, observes the court, Prodigy "fails to describe what further facts remain to be developed on this issue of whether it is a publisher."

To avoid publisher liability, Prodigy looks to *Cubby Inc. v. Compuserve Inc.*, 776 F.Supp. 135 (SDNY 1991). In that case, a computer online service provided subscribers with forums, including a Journalism Forum, and electronic libraries. One publication available in the Journalism Forum contained an allegedly defamatory statement about the plaintiff. An independent entity, Cameron Communications, Inc., had "contracted to manage, review, create, delete, edit and otherwise control the contents of Journalism Forum in accordance with editorial and technical standards and conventions of style established by Compuserve."

In *Cubby*, the court found Compuserve did not have the opportunity to review the content of the publication at issue before it was uploaded into its computer banks. Compuserve's product, said the court, was an electronic library for profit carrying a vast number of publications, with Compuserve exercising little or no editorial control over publication content. Finding it to be an "electronic news distributor," the court held Compuserve to the lower standard of liability accorded to public libraries, book stores and newsstands (i.e., whether it had knowledge, or reason to know, of the defamatory content of the publication).

Distinguishing between Compuserve and Prodigy, the court here observed,

"First, PRODIGY held itself out to the public and its members as controlling the content of its computer bulletin boards. Second, PRODIGY implemented this control through its automatic software screening program, and the Guidelines which Board Leaders are required to enforce. By actively utilizing technology and manpower to delete notes from its computer bulletin boards on the basis of offensiveness and 'bad taste', for example PRODIGY is clearly making decisions as to content (see, *Miami Herald Publishing Co. v. Tornillo*, [418 U.S. 241

(1974)]), and such decisions constitute editorial control. That such control is not complete and is enforced both as early as the notes arrive and as late as a complaint is made, does not minimize or eviscerate the simple fact that PRODIGY has uniquely arrogated to itself the role of determining what is proper for its members to post and read on its bulletin boards."

The court also found an interesting comparison in a case where apple growers sued a television network and its local affiliates over an allegedly defamatory report generated by the network and broadcast by local affiliates (*Auvil v. CBS 60 Minutes*, 800 F.Supp. 928 [(E.D. Wash. 1993)]). In that case, the affiliates had the power to exercise editorial control by virtue of their contract with the network, as well as the technical capacity and opportunity to do so given the three hour time difference between the east and west coasts. In addition, the local affiliates had occasionally censored network programming, albeit not respecting "60 Minutes." In that case, however, the court did not impose "conduit liability,"

"[as this] would force the creation of full time editorial boards at local stations throughout the country which possess sufficient knowledge, legal acumen and access to experts to continually monitor incoming transmissions and exercise on-the-spot discretionary calls or face \$75 million dollar lawsuits at every turn. That is not realistic. ... More than merely unrealistic in economic terms, it is difficult to imagine a scenario more chilling on the media's rights of expression and the public's right to know."

But here, says the court, Prodigy has "virtually created" an editorial staff to monitor transmissions and censor notes. By use of automatic scanning, Guidelines and Board Leaders, observes the court, Prodigy may have chilled freedom of communication in cyberspace—"and it appears that this chilling effect is exactly what PRODIGY wants, but for the legal liability that attaches to such censorship."

Publisher status for Prodigy will not compel all computer networks to abdicate control over their networks, explains the court. Fear of such a result "incorrectly presumes that the market will refuse to compensate a network for its increased control and the resulting increased ex-

posure.” The court also notes that the issues here may ultimately be preempted by enactment of the Communications Decency Act of 1995 now pending before Congress.

VI. Contractors & Agents

Turning to the status of Epstein, the Board Leader, the court noted that agency “is a legal relationship which results from the manifestation of consent of one person to allow another to act on his or her behalf and subject to his or her control, and consent by the other to so act.” Prodigy had attempted to structure its contractual relationship with Epstein so that he could not act as, or be found by a court to be, Prodigy’s agent. The written agreement between Prodigy and Epstein provides that, among other things,

“[Epstein] indemnify and agree to hold PRODIGY harmless from and against all claims, cost[s], liabilities[, and] judgments .. arising out of or in connection with anything [Epstein does] ...

Being a Board Leader does not make [Epstein] a PRODIGY Services Company employee, representative or agent, and [Epstein] agree[s] not to claim or suggest [he is] one.”

The court noted, however, that “talismanic language [in a contract] does not determine an agency relationship.” Similarly, “whether one is an independent contractor is not determinative of whether one is an agent.” Courts look, instead, to the substance of the relationship and whether “one party retains a sufficient degree of direction and control over another.”

For the limited purpose of monitoring and editing the “Money Talk” bulletin board, the court ruled that “PRODIGY directed and controlled Epstein’s actions.” This conclusion was based on the relationship between Prodigy and its Board Leaders, the obligation of Board Leaders to follow the Guidelines, and Prodigy’s “management function” regarding the Board Leaders’ activities. The court observed that the agreement between Prodigy and Epstein sets forth eleven acts to be taken by Epstein, including posting a minimum number of notes on the bulletin board each month, providing monthly reports to Prodigy, following additional procedures provided by Prodigy, and obtaining Prodigy’s prior

approval for promotional efforts. The court also pointed out that a “Bulletin Board Leader Survival Guide” dated October 1994 includes the caveat: “IF YOU DON’T KNOW WHAT SOMETHING IS OR WHAT IT’S SUPPOSED TO DO, LEAVE IT ALONE UNTIL YOU CAN ASK.” Accordingly, the court held that Epstein acted as Prodigy’s agent for purposes of the acts and omissions alleged in the complaint.

CyberLex May 1995

Notable legal developments reported in May 1995 include the following:

- # Paul K. Kim, a graduating senior in a suburb outside Seattle, Washington, was severely sanctioned by his principal for publishing a lampoon of his school (Newport High School) on the Internet, including links to Internet sites with sexually-explicit material. The principal withdrew support for Kim as a National Merit Scholarship finalist and faxed letters to seven universities to which he applied, informing them that the school was withdrawing its support for Kim as a National Merit Scholar and any recommendations the school may have given him. (New York Times, 5/28/95, p.10.)
- # A New York judge cleared the way for a libel suit by Stratton Oakmont, Inc., an investment bank, and its president against Prodigy Services Company, ruling that the computer online network may be viewed as a publisher of information posted on its “Money Talk” bulletin board. (New York Times, 5/26/95, C4; San Jose Mercury News, 5/26/95, 1G.)
- # The Better Business Bureau has filed suit against Mark Sloo, dba Clark Publishing, for acquiring registration of “bbb.org” and “bbb.com” allegedly to elicit money from the Bureau (which has used the BBB acronym for years) when it decides to use the Internet. (San Jose Mercury News, 5/12/95, 1C.)
- # A New York court held that the Delphi computer online service is to be treated as a news disseminator in a suit brought by Howard Stern, dismissing allegations that Delphi’s

use of his name and photograph violated the New York Civil Rights Law. *Stern v. Delphi Internet Services Corp.*, 1995 N.Y. Misc. Lex. is 197 (N.Y. Sup. Ct. 5/20/95).

- # The Commerce Department approved the export of Cybercash Inc. encryption technology, which only encrypts a small section of a transaction message. Tight restrictions on encryption for “bulk” messaging remain. (San Jose Mercury News, 5/9/95, 3E.)
- # An anti-terrorism law proposed in the wake of the bombing of the Federal Building in Oklahoma City would permit the Government to obtain a wiretap to investigate any suspected Federal felony and would lower legal barriers to the use of eavesdropping evidence in court. The law would also require telephone companies to help Government wiretappers gain access to digital telecommunication lines under court orders. (New York Times, 5/9/95, A8.)
- # Microsoft Windows 95 reportedly includes a Registration Wizard routine that interrogates each system on a network to determine what products are loaded (including products by competitors), creates a complete listing, and reports this listing back to Microsoft when a customer signs up for Microsoft Network Services. The routine can be disabled. (InformationWeek, 5/22/95, p.88.)
- # The Federal Communications Commission established national rules for “Caller ID” under which callers may block their numbers from being seen by dialing *67 before each call or by special request to the phone company. Phone numbers of those who have unlisted numbers will be displayed if they do not take either step. In California, where the service is not offered, Pacific Bell will be required to send callers’ numbers out of state by December 1, 1995. (San Jose Mercury News, 5/5/95, 1A.)
- # A misdemeanor complaint was filed against a Los Angeles man, David Luera, on charges of possessing child pornography that prosecu-

tors allege he obtained from the Internet. Luera faces one year in jail and a fine of up to \$1,000. The Los Angeles Police Department's Sexually Exploited Child Unit began to investigate Luera after he placed an ad in *Loving Alternatives* magazine, allegedly seeking to have an "open relationship" with couples interested in family nudity. (*New York Times*, 5/19/95, A8.)

- # IBM won a repetitive stress injury case brought by a former super-market clerk in New York who claimed she had been injured by using keyboards developed by IBM and NCR Corp. (*San Jose Mercury News*, 5/3/95, 3G.)
- # The Federal Communications Commission will allow the market to set prices on cellular phone service beginning in August 1995. (*San Jose Mercury News*, 5/12/95, 1C.)
- # Texas Instruments Inc. won a \$51.8 million judgment against VLSI Technology Inc., Cypress Semiconductor Corp., and LSI Logic Corp. for infringing TI's patent on a technology known as plastic encapsulation, used in packaging semiconductors. (*San Jose Mercury News*, 5/11/95, 1F.)
- # The Federal Communications Commission will not enforce a ruling by its Common Carrier Bureau that would have required telephone companies to raise the price of ISDN (Integrated Services Digital Network) service. The Bureau had said customers would have to pay a "subscriber line charge" according to the capacity of their ISDN connection, measured in equivalents to ordinary telephone lines. (*New York Times*, 5/31/95, C4.)
- # The International Trade Commission will investigate low-power hard disk drives imported by IBM. Conner Peripherals Inc., alleging that IBM is infringing Conner patents, asked the Commission to issue a permanent exclusion order barring the import and sale within the U.S. of the drives. (*New York Times*, 5/9/95, C8.)
- # The California Public Utilities Commission ruled that Pacific Bell vi-

olated state law by restricting use of its Centrex system. The PUC ordered the company to allow businesses to make local toll calls on competitors' lines without dialing five-digit prefixes. At the beginning of this year, the PUC had opened the market for local toll calls—those more than 11 miles from within one of the state's 11 local call regions. (*San Jose Mercury News*, 5/11/95, 3F.)

- # Microsoft announced it is abandoning plans to acquire Intuit Inc. The announcement came a day after the Justice Department accused lawyers for Microsoft and Intuit of acting in bad faith, and requested delay of the trial scheduled to begin on June 26. (*New York Times*, 5/21/95, p.1.)
- # The California State Senate passed a bill that specifically includes computer data and related information (including programming information) within the scope of civil discovery.

CyberLaw June 1995 Restraining Access

I. A Renewed Request

The Church of Scientology is pursuing a vocal critic named Dennis Erlich over the Internet and into court, along with an Internet provider (Netcom On-Line Communication Services, Inc.) and the operator of an electronic bulletin board service (Tom Klemesrud) that links to the Internet through a connection provided by Netcom. The case is brought by Religious Technology Center and Bridge Publications Inc. (collectively, "Scientology"), owners of rights to published and unpublished works of L. Ron Hubbard, founder of the Scientology religion. At the heart of the complaint is the allegation that Erlich used Netcom's and Klemesrud's computer facilities to publish unauthorized copies of Hubbard's works in an Internet newsgroup named "alt.religion.scientology." Scientology claims Erlich has stolen trade secrets and that his postings constitute copyright infringement. It also alleges his access providers are guilty of the same offenses. At first, a federal court issued a restraining order against all defendants. The order was later dissolved against the

access providers, but the Church has now renewed its efforts to obtain an injunction against them. At this point, one key issue is whether Netcom can again avoid liability for alleged copyright infringement arguing it is merely a passive conduit of Internet postings, particularly in the face of Scientology's allegation that Netcom has suspended and terminated customers' accounts for abuse of its Terms and Conditions and Netiquette, as well as for copyright infringement? Another issue is whether Netcom has a better defense based on fundamental rights of freedom of speech and expression, as exercised by Erlich in posting to an Internet newsgroup dedicated to discussion of the Scientology religion? Scientology's renewed request now awaits decision by a federal court in California.

II. Additional Facts & Evidence

Scientology claims the exclusive right to reproduce and publish published and unpublished literary works of L. Ron Hubbard. It also claims that, in 1993, a federal court decided that certain of these works are trade secrets under California law, as Scientology proved there was economic advantage in keeping the materials secret, among other required factors.

Scientology alleges over 200 instances of copyright infringement by Erlich. 90 of those were allegedly through Klemesrud's and Netcom's systems, with materials stored in those systems for up to three days and several weeks respectively. Scientology claims that on February 26, 1995, Erlich violated the temporary restraining order (TRO) issued against him by making an eight-page posting through the defendants' systems

In its renewed application for a preliminary injunction, Scientology argues that additional facts and evidence now demonstrate that Scientology is entitled to such relief against Netcom and Klemesrud. Indeed, says Scientology, "their principal defense—purported inability to deal with the subject infringements—is simply not true."

III. Refusal to Act

Defendants' systems are not mere conduits for Erlich's postings, claims Scientology—"defendants' equipment is itself generating and storing the unauthorized, infringing copies to service their paying customers...." Both Netcom and

Klemesrud were able, continues Scientology, to warn of violations of usage conditions and to cancel service. But, says Scientology,

“They refused to take any action, being unwilling even to issue warnings not to engage in the infringing postings. By their refusal, coupled with their actual copying of Erlich’s infringements onto their own disks to make them available for paying subscriber access over extended periods, they have embroiled themselves in this matter, and should be preliminarily enjoined from continuing their activities.”

Erlich’s February 26, 1995, eight-page posting in violation of the TRO demonstrates he did not give up all copies of Scientology’s works. The question of exerting control over Erlich’s postings “was not mooted by the seizure and TRO, as Netcom contended in its opposition to the original injunction application.”

In posting to Usenet newsgroups such as alt.religion.scientology, Erlich used Klemesrud’s system to transfer Erlich’s posting to Netcom’s computer. Klemesrud’s action in so doing, claims Scientology, “is analogous to that of the bulletin board operator enjoined in *Sega Enterprises Ltd. v. MAPHIA*, 857 F.Supp. 679, 683-684 (N.D. Cal. 1994), who stored unauthorized copies of Sega games on his BBS, which were uploaded and downloaded to his users.”

In response to the argument of Klemesrud and Netcom that the requested relief would cripple their ability to function, Scientology remarks that the injunction sought “is narrowly tailored and deals with the situation at hand and any other known situations of which defendants are warned.” Klemesrud, notes Scientology, is able to delete individuals from his system, has excluded hate groups and other objectionable groups from his system, has asked posters of “offensive, distasteful, and inappropriate” remarks

“to take their accounts elsewhere,” and would delete Erlich’s postings if they are “wholesale copying” of religious texts in order to deprive the Church of Scientology of income.

According to Scientology, Klemesrud could limit Erlich’s access so that he could not access newsgroups— “[a]s a matter of Internet ‘Netiquette,’ it is entirely appropriate for Klemesrud, as the

systems operator (‘sysop’) of a BBS, to take action against a copyright infringer on his system.” According to Scientology,

“Where a user engages in unlawful postings, his immediate service provider is obligated by Netiquette to deal with his violations, first by warnings and ultimately by denial of access, if nothing else works. Furthermore, where the immediate provider will not deal with the problem, then the next provider up the line takes on the obligation of doing so. Thus, if Klemesrud refuses, Netcom should take the action itself.”

Netcom could do so, alleges Scientology, by running a program to check the messages passing through its system, blocking those from Erlich “altogether, as properly warranted by his threats to ignore any court orders, and his subsequent February 26 posting in clear violation of the original and amended TRO.” In addition, Scientology observes that the rules of Klemesrud’s system, the Los Angeles Valley College BBS, allow removal of Erlich for “violating the BBS’ rules and causing it to violate the rules of its access providers, thereby jeopardizing Los Angeles Valley College BBS, Netcom and the entire BBS community.”

IV. Balancing Harm & Injury

Netcom responds by first explaining that Erlich made the February 26, 1995, posting before receiving a copy of the Court’s amended TRO and becoming aware that the fair use exception did not extend to the confidential materials identified in plaintiff’s complaint. Upon receipt of the amended TROs, Erlich immediately wrote to the Court and apologized if he had erred. Erlich, now represented by counsel, has not made an objectionable posting since that time. Scientology cannot, therefore, demonstrate a threat of irreparable harm to support its request for injunctive relief.

The purpose of an injunction is to preserve the status quo pending a determination of the action on the merits. Netcom argues that here, “rather than preserving the status quo, the injunctive relief [Scientology] request[s] would fundamentally alter the functioning of the Internet.”

If an injunction should issue, Netcom says it would have to disconnect

Klemesrud and his approximately 500 subscribers “or undertake, at great expense and with no guarantee of success, to attempt to modify its operating software to permanently block Erlich’s access to the Internet. Thus, the harm the injunction would cause NETCOM greatly outweighs [Scientology’s] threatened injury....”

Netcom also claims,

“[I]t is inappropriate for [Scientology] to premise a request for injunctive relief against NETCOM on the alleged past and predicted future noncompliance of Mr. Erlich with the Court’s amended TRO. The proper remedy for any violation of the TRO by Mr. Erlich is further action against Mr. Erlich, not NETCOM.”

V. Infringement Liability

Regarding claimed copyright infringement, Netcom argues it is neither liable for direct or contributory infringement, nor is it vicariously liable for Erlich’s actions. Netcom’s role here was as a temporary host of messages posted to newsgroups to which it provides access. This role, urges Netcom,

“is qualitatively no different from the role of the thousands of other Usenet server sites who host the alt.religion.scientology newsgroup on their servers. ... [I]f NETCOM were considered to be a direct infringer because of the computer dissemination of Usenet messages on the Internet, such a theory of liability would apply to the over 10,000 Usenet sites, and, possibly, the millions of Usenet participants.”

To be held liable for contributory infringement, Netcom must have knowledge of the infringing conduct and materially participate in it. Netcom argues it does not have the “certain, unequivocal and advance knowledge courts require before holding a party contributorily liable for the acts of another.” Also, its role in Erlich’s alleged infringement does not constitute the “pervasive participation” courts require:

“Rather than directing, authorizing or actively participating in Erlich’s allegedly infringing activities, NETCOM simply serves as a passive transmitter of his and millions of other messages throughout the Internet. ... NETCOM leases use of its computer facilities to its subscribers. The fact that NETCOM is just one

of dozens of access providers and just one of thousands of Usenet server sites throughout the country illustrates the immateriality of its contribution to Erlich's conduct."

Regarding vicarious liability, Netcom states such a claim depends upon a showing that a third party had "the right and ability to control the infringer and received a direct financial benefit from the infringement." Here, both elements are lacking. Netcom says it "does not and cannot supervise Erlich's messages before they are posted." It also is unable, as a passive access provider, to exercise editorial control over the content of individual messages given the speed and volume of the message traffic transmitted via the Usenet. Netcom has never pre-screened postings, does not have software to do so, and, contrary to the assertions of Scientology's "consultants," does not believe that a software change could block Erlich's postings until it could review them. "It would be necessary," argues Netcom, "to entirely change the functioning of the USENET system in order to monitor information that is posted to it."

Netcom acknowledges that it has the contractual right to take certain remedial actions once a violation of its terms and conditions of service has been established. But its terms and conditions, adds Netcom, "do not say, nor could they given the technological realities, that NETCOM will screen for violations in advance of posting."

And Netcom's terms and conditions cannot be used by Scientology to establish that Netcom has the ability to control users within the meaning of the vicarious liability doctrine. A federal court has recently rejected the argument that the power to refuse to deal with an infringer is equivalent to the power to control him.

Netcom also argues that it does not benefit financially from content that passes through its system. The fixed-fee rentals Netcom receives from subscribers are not, it says, "deemed financially derivative of the alleged act of infringement because the fee remains the same regardless of the nature, extent, or lack thereof, or the use of the premises."

Netcom acknowledges and disputes Scientology's assertion that Netcom can

be liable for copyright infringement because it hosts Erlich's postings on its Usenet server for several days. Assuming for the sake of argument that "its non-volitional transmission of messages through a lease arrangement" could be construed as an act of copying, Netcom argues that it is protected by the "fair use doctrine which allows a person to use copyrighted material in a reasonable manner without the copyright holder's consent." Netcom also notes serious questions about whether Erlich has infringed Scientology's rights, including:

"(1) whether [Scientology] may properly maintain copyrights in the materials at issue; (2) if so, whether [Scientology's] copyrights in the material remain enforceable; and (3) whether Erlich's alleged use of his materials constitute 'fair use' and, consequently, is nonactionable given his apparent reliance on them to facilitate commentary on the Church of Scientology and its practices."

VI. Speech, Religion & Fair Use

On the First Amendment, Netcom argues that Internet users and Netcom subscribers, in particular, are guaranteed by fundamental rights of freedom of speech and expression, association, and to engage in the distribution of information. Scientology's construction of copyright law, urges Netcom, would impair the First Amendment rights of millions of Internet users. It would also "curtail the exchange of information that is crucial to the development of art, science, industry, and indeed religion," contravening the Copyright Act and the First Amendment. Netcom adds that an injunction requiring Netcom permanently to bar Erlich from the Internet "would constitute an impermissible prior restraint."

If Scientology's position were accepted, Netcom claims it will be faced with "an insoluble dilemma." On the one hand, it will face debilitating infringement liability if it does not eliminate access. On the other hand, if it were to eliminate access without a prior judicial determination, it will face liability under California law to Klemesrud's approximately 500 non-infringing users for cutting off access to a public forum.

Netcom argues that it "is 'ill-equipped' to do the 'policing' [Scientology] demand[s], and requiring NET-

COM would adversely affect the public's low-cost access to the information marketplace." If held accountable for the tortious acts of others, argues Netcom, it will face the type of problems that a federal court recently noted with respect to a local television network affiliate in holding that the affiliate had no editorial control over a network broadcast, serving only as a conduit not responsible for republishing defamatory content of a "60 Minutes" segment. In *Auvil v. CBS 60 Minutes*, 800 F.Supp. 928 (E.D. Wash. 1992), the court noted that liability

"would force the creation of full time editorial boards at local stations throughout the country which possess sufficient knowledge, legal acumen and access to experts to continually monitor incoming transmissions and exercise on-the-spot discretionary calls or face \$75 million dollar lawsuits at every turn. That is not realistic."

VII. Scientology's Reply

In response, Scientology observes, among other things, that Netcom's claims are belied by the deposition testimony of its own witnesses:

"Per Netcom's admissions, Netcom is not the passive transmitter it has led the Court to believe. Netcom regularly exercises controls over its customers' postings. It has: (1) suspended over 1,180 customers' accounts for abuse of its Terms and Conditions and Netiquette; (2) suspended accounts of copyright infringers without court order or legal opinion; and (3) terminated a bulletin board account without regard to whether others would be affected by the termination."

Similarly, Scientology notes that where Netcom earlier stated that it was impossible to deal with Erlich's postings other than to terminate Klemesrud's account, Netcom now admits that it merely does not currently have the software to do so. Accordingly, says Scientology,

"Netcom can, and does, control abuses on its system, and preliminarily enjoining it from permitting abuse of plaintiff's rights will not require it to do anything it has not done as a routine part of its business many times before."

Scientology also alleges that Netcom does, in fact, receive a financial benefit from declining to take action against Erlich,

“As a commercial provider of Internet services, Netcom directly profits from the media and Internet exposure it receives as a result of its refusal to take enforcement action against Erlich and Klemesrud in this situation, and fears it will suffer adverse consequences if it acts on its own to prevent their infringements. Netcom advertises its services as providing easy, regulation-free access to the Internet, access which is not available from its more restrictive competitors such as CompuServe and America Online, Inc. Indeed, Netcom’s ‘NETCOM Info’ boasts to its customers that ‘there is no administration to the Internet’ and that ‘[n]o one person can “lay down the law” to the rest of the community because there is no law’ It is precisely this hands off approach that will attract to Netcom, rather than to its competitors, subscribers who seek to copy or distribute copyrighted materials. It is not a matter of free speech as Netcom urges, but of profits.”

Regarding the First Amendment, Scientology urges that no harm to the public will accrue if an injunction is issued. According to Scientology, “courts have consistently rejected all claims of a First Amendment right to engage in copyright infringement and instead have fully protected the statutory rights granted to authors of creative works.” Scientology further asserts that its proposed order takes fair use into account, adding that,

“Where a defendant’s right to engage in fair use has been accommodated by a court, there is simply no place for a separate First Amendment analysis because ‘the fair use doctrine encompasses all claims of first amendment in the copyright field.’” (Citation omitted.)

CyberLex June 1995

Notable legal developments reported in June 1995 include the following:

A federal judge in Detroit, Avern Cohen, dismissed charges against Jake Baker, 21, who had been arrested and jailed for 29 days earlier this year on charges of transmitting threats over a fictional rape and murder story Baker wrote and posted to an Internet area reserved for sex stories. (San Jose Mercury News, 6/22/95, 1E; New York Times, 6/22/95, A11.)

The U.S. Senate approved a sweeping telecommunications reform bill. Included in the bill is the Exon amendment, a measure that imposes heavy fines and prison terms on people who distribute “indecent” material over the Internet. Although the measure includes protections for on-line services that merely act as a conduit for individuals that use their networks to disseminate sexually-explicit material, the commercial on-line industry fears that it might still be held liable for message content where their moderators monitor on-line discussion groups. Another part of the bill would require television manufacturers to install a computer chip that allows parents to prevent children from watching violent programs. Other provisions permit local phone companies to provide long-distance service, permit both types of phone companies to offer computer-based and video programming as well as, in certain cases, to own a cable company and a phone company in the same area, and to free cable companies from most regulation by the Federal Communications Commission. (San Jose Mercury News, 6/14/95, 20A; 6/16/95, 1A, 6/15/95, 1A; New York Times, 6/15/95, A1; 6/16/95, A1 & C4.)

Three software companies, Microsoft Corp., Netscape Communications Corp. and Progressive Networks Inc., agreed to form the Information Highway Parental Empowerment Group to develop technology to allow computers to identify and block certain information and images on the Internet. (San Jose Mercury News, 6/14/95, 1F; New York Times, 6/15/95, C2 & C6.)

A three-judge federal appeals court panel reinstated a July 1994 anti-trust settlement between the Justice Department and Microsoft Corp., ruling that Judge Stanley Sporkin overstepped his authority in rejecting it. The panel disqualified Judge Sporkin and ordered the case reassigned to a different judge, to be picked at random. In its decision, the appeals

court objected to Judge Sporkin’s reliance on the book “Hard Drive,” by James Wallace and Jim Erickson, for examples of what were said to be Microsoft’s unfair business practices, and to the admission of briefs filed by a Silicon Valley lawyer, Gary Reback, on behalf of three anonymous clients. (San Jose Mercury News, 6/17/95, 1A; New York Times, 6/17/95, p.17.)

The Federal Communications Commission issued rules curbing the unauthorized switching of long-distance phone service, a practice known as “slamming.” The rules forbid, among other things, promotional campaigns—such as prize giveaways or sweepstakes—to entice consumers to switch long-distance carriers. Consumers who receive higher bills as a result of being slammed may only have to pay the charges they would have owed to their original carrier. (New York Times, 6/16/95, C4.)

The California Public Utilities Commission has appealed to the U.S. Court of Appeals, challenging the Federal Communications Commission’s plans to establish a national “caller ID” system by December 1, 1995. (San Jose Mercury News, 6/8/95, 1E.)

Describing itself as a beleaguered victim of a “campaign of harassment” and “abusive behavior” by the Justice Department, Microsoft Corp. filed a petition in federal court asking that a civil investigative demand be set aside. The Justice Department is investigating whether Microsoft’s plan to bundle its upgraded operating system, Windows 95, with access software for its on-line service will give it an unfair advantage in the on-line business. The European Community will conduct a similar investigation. The three leading commercial on-line services, America Online, CompuServe and Prodigy, have also received civil investigative demands for information from the Justice Department. (New York Times, 6/27/95, C3; 6/22/95, C1; 6/15/95, C6; 6/10/95, p.15; 6/9/95, 2C; San Jose Mercury News, 6/16/95, 1C.)

The Justice Department made a “second request” for information from Computer Associates International Inc. and Legent Corp. (the two largest independent software developers for big computer systems) on their planned merger, a sign government prosecutors plan to spend more time than usual looking into the competitive effects of the combined firms. (San Jose Mercury News, 6/17/95, 11D; New York Times, 6/17/95, p.20.)

A coalition backed by Pacific Bell asked the California Public Utilities Commission to delay the start of competition in the local phone market until protections for “universal service” are in place. Pacific Bell also requested changes in rules governing the way long-distance and cable companies enter the market. All California markets are to be open by January 1997, and the PUC has proposed interim rules that would open the market one year earlier. (San Jose Mercury News, 6/10/95, 1D.)

Advanced Micro Devices filed a patent infringement suit against Cypress Semiconductor Corp. over Cypress’ FLASH 370 programmable logic devices. (San Jose Mercury News, 6/10/95, 1D.)

CyberLaw July 1995

True Threats

I. Bad Judgment

In early February 1995, a University of Michigan student named Jake Baker was arrested and held without bail for publishing a sexually violent piece of fiction in an Internet newsgroup. At the time, the reason for the arrest seemed to be an unfortunate choice in naming the story’s victim—giving her the name of a student in one of Baker’s classes. While many wondered how anyone could be arrested and held on such charges, Baker spent 29 days in jail. Not surprisingly, the government soon abandoned prosecution based on the story, focusing instead on Baker’s private e-mail exchanges with a person named Gonda. On June 21, 1995, a U.S. District Court judge dismissed the indictment against Baker, ruling that the First Amendment barred his

prosecution. *U.S. v. Baker, et al.*, Crim. No. 95-80106, 1995 U.S. Dist. LEXIS 8977 (E.D. Mich. 6/21/95). The Court commented that the justification for Baker’s arrest seemed farfetched, and expressed doubt as to whether Baker’s prosecution resulted from the exercise of good judgment.

II. Sex & Violence

Between November 29, 1994, and January 25, 1995, Jake Baker exchanged e-mail messages with Arthur Gonda. Baker was living in Ann Arbor, Michigan, at the time. Gonda, whose identity and location remains unknown, sent and received mail through a computer in Ontario, Canada. The correspondence between Baker and Gonda “express a sexual interest in violence against women and girls.”

III. Danger to the Community

On February 9, 1995, Baker was arrested on a criminal complaint based on a story Baker posted to an Internet newsgroup titled “alt.sex.stories” and on e-mail Baker sent to Gonda. The story posted to the Internet “graphically described the torture, rape, and murder of a woman who was given the name of a classmate of Baker’s at the University of Michigan.”

After his arrest, Baker was detained overnight and brought before a magistrate who ordered him held as a danger to the community. A federal judge affirmed the detention the following day. On March 8, 1995, a psychological evaluation was ordered. Received on March 10, 1995, the evaluation concluded Baker posed no threat. He was released that day—after 29 days detention.

Notably, a report by the University of Michigan states that a January 20, 1995, psychological evaluation concluded that Baker did not display any risk factors for potential violence. Another evaluation on February 7, 1995, concluded there was “no evidence that [Baker] is a danger to himself or others.” Two days later, on the same day as his arrest, a further psychological evaluation reported that Baker “presented no clear and present danger to [the student whose name he had used in the story] or anyone, at the time of the interview.” According to U.S. District Court Judge Avery Cohen,

“Why Baker was arrested and taken into custody on February 9, 1995, is inexplicable. The government indicated in its supplemental brief that Baker’s arrest was justified as preventing ‘Jake Baker and other like-minded individuals from acting on their violent impulses and desires.’ In light of the information available at the time of Baker’s arrest, this justification seems farfetched.”

(On May 26, 1995, the government acknowledged that it abandoned the story as a basis of prosecution because it did not constitute a threat.)

IV. True Threats

In March 1995, the government charged Baker and Gonda with a superseding indictment that did not mention the story. The indictment consists of five counts of violating 18 U.S.C. Section 875(c), which reads:

“Whoever transmits in interstate or foreign commerce any communication containing any threat to kidnap any person or any threat to injure the person of another, shall be fined under this title or imprisoned not more than five years, or both.”

According to the Court, such a threat “need not be communicated to the person or group identified as its target.” But because “pure speech” is involved, the First Amendment is implicated and to pass constitutional muster, the government must prove a “true threat”—one that “on its face and in the circumstances in which it is made is so unequivocal, unconditional, immediate and specific as to the person threatened, as to convey a gravity of purpose and imminent prospect of execution.” “A statement which would not be interpreted by any foreseeable recipient as expressing a serious intention to injure or kidnap simply is not a threat under the statute.”

(The Court notes that initial passage of Section 875(c) was motivated by the unproblematic case of the kidnapping of Charles Lindberg’s son and the use of the mail to convey the kidnapers’ threats and demands. In that case, the communication was “so interlocked with violent conduct as to constitute for all practical purposes part of the [proscribed] action itself.”[7] Today, a threat that is neither coercive nor extortionate may satisfy the constitutional test.)

V. Email Examined

The government argues here that e-mail between Gonda and Baker reflects “the evolution of their activity from shared fantasies to a firm plan of action.” However, messages constituting “shared fantasies,” ruled the Court, fall short of the required standard and are not “true threats”:

“Statements expressing musings, considerations of what it would be like to kidnap or injure someone, or desire to kidnap or injure someone, however unsavory, are not constitutionally actionable under Section 875(c) absent some expression of an intent to commit the injury or kidnapping.”

The Court also noted that the constitutional test is “not satisfied by finding that the desires expressed in a statement are so deviant that the person making the statement must be unstable, and therefore likely to act in accordance with his or her desires at any moment.”

The Court notes that language for which Baker is charged was contained in private e-mail messages sent to Gonda, not available in any public forum. (The public only knows of the content as a result of the prosecution and ensuing publicity.) While Baker and Gonda exchanged messages concerning violence against women and girls, the Court finds, “[i]t would be patently unreasonable after reading [Gonda’s] messages to think that Baker’s communications caused their only foreseeable recipient, Gonda, to fear violence, or caused him any disruption due to fear of violence.”

The government alleges that messages between Baker and Gonda evolved into a “firm plan of action.” But, says the Court, Section 875(c) covers transmitting threats, not planning crimes. Although the government characterized Baker and Gonda as co-conspirators, to prove a conspiracy one has to prove an overt act in furtherance of the conspiracy—something not alleged by the government. According to the Court, “[t]he only actions involved in this prosecution are Speech—the outward expression of what a person thinks in his mind.”

Even if Baker and Gonda were conspiring, they are not necessarily guilty under Section 875(c). Fear of serious injury is not sufficient to justify suppres-

sion of speech—”there must be reasonable ground to fear that serious evil will result if free speech is practiced. There must be a reasonable ground to believe that the danger apprehended is imminent.”

(Interestingly, the Court observes that the Senate’s passage of the Exon amendment to the telecommunications bill, criminalizing the distribution of “filthy” material over computer networks, “suggests that the First Amendment’s application to on-line communications has not been well considered.”)

Count I of the indictment concerns e-mail between Baker and Gonda discussing hurting women and sexually abusing “a really young girl.” At one point, they discuss kidnapping a girl. Gonda says, “I will keep my eye out for young girls, and relish the fantasy...BTW how about your neighbour at home, you may get a chance to see her...?...” Baker responds, “Yeah. I didn’t see her last time I was home. She might have moved. But she’d be a great catch.”

The government alleges that the targets of Baker’s and Gonda’s statements are 13 and 14-year old girls living Baker’s neighborhood in Ann Arbor, Michigan, as well teenage girls living in his neighborhood in Boardman, Ohio. But, Count I does not meet the “true threat” requirement. “In reality,” says the Court, “the only class of people to whom the messages can be taken to refer is 13 or 14 year old girls, anywhere.” This class is too indeterminate to meet the constitutional requirement of specificity as to the person threatened. Further, Baker’s message, while discussing a predilection toward young girls, is not more than a “a simple expression of desire.” According to the Court, it is not constitutionally permissible to infer an intention to act on a desire from a simple expression of the desire. And “[d]iscussion of desires, alone, is not tantamount to threatening to act on those desires. Absent such a threat to act, a statement is protected by the First Amendment.”

Counts II and III are based on a Baker e-mail message and charge him with making a threat to kidnap and injure. In the message, Baker discusses abduction of a woman from “the girl’s bathroom” that is across from his room, and sexual abuse. The government alleges that the

targets of Baker’s message are female college students who lived in Baker’s dormitory at the University of Michigan.

“[D]iscussion of a method of kidnapping or injuring a person,” notes the Court, “is not punishable unless the statement includes an unequivocal and specific expression of intention immediately to carry out the actions discussed.” But, rules the Court, Baker’s message “cannot reasonably be read as satisfying this standard.” “Discussing the commission of a crime,” explains the Court, “is not tantamount to declaring an intention to commit the crime.”

Count IV charges transmission of a threat to injure. In part of an exchange, Baker states, “When I lay down at night, all I think of before I sleep is how I’d torture a bitch I get my hands on. I have some pretty vivid near dreams too. I wish I could remember them when I get up.” The government identifies the class of targets as women Baker discussed on the Internet.

This is the weakest of the government’s charges, states the Court. The class of targets is not sufficiently specific, as nothing in the e-mail limits the class to women Baker discussed on the Internet. As Baker often refers to “a girl” in his e-mail and stories, the Court states that the class of targets would apparently include “any woman or girl about whom Baker has ever thought.” Further, the First Amendment does not permit the inference of an intention to act on the thoughts and dreams expressed here.

Count V focuses on e-mail in which Baker and Gonda discuss torture. Baker writes, “Just thinking about it anymore doesn’t do the trick...I need TO DO IT.” They discuss meeting in the summer. Baker says, “Pickings are better then too. Although it’s more crowded.” The government identifies the same class of targets as in Count IV.

Again, the Court notes the class of targets is “far too vague.” There is also lacking any “unequivocal, unconditional and specific expression of intention immediately to inflict injury.” There is only an expression of a strong desire. Says the Court,

“Baker ... indicates, at most, an intention to meet Gonda at some indefinite point in the future—in the next week, month, or several months later. This state-

ment does not express an unequivocal intention immediately to do anything. Also, nothing in the language on which the Count is based indicates any intention to commit specific acts if Baker and Gonda ever were to meet.”

Dismissing Count V, the Court observes that “[t]his prosecution presents the rare case in which, in the government’s words, ‘the language set forth ... is so facially insufficient that it cannot possibly amount to a true threat.’”

VI. Insufficient Proof

Accordingly, the Court dismissed the indictment against Baker, ruling that in the light most favorable to the prosecution, there is no case for the jury here because the factual proof is insufficient as a matter of law. “The government’s enthusiastic beginning,” says the Court, “petered out to a salvage effort once it recognized that the communication which so alarmed the University of Michigan officials was only a rather savage and tasteless piece of fiction.”

“Whatever Baker’s faults, and he is to be faulted,” observed the Court, “he did not violate 18 U.S.C. Section 875(c). This case would have been better handled as a disciplinary matter....” Regarding the government, the Court added:

“The Court is very skeptical, and about the best thing the government’s got going for it at this moment is the sincerity of purpose exhibited by [the Assistant United States Attorneys prosecuting the case], I am not sure that sincerity of purpose is either synonymous with a good case under the law, or even the exercise of good judgment.”

CyberLex August 1995

Notable legal developments reported in July 1995 include the following:

- # Network Solutions Inc., the company that assigns Internet addresses, will suspend the use of a domain name if the first person to register the name does not relinquish it to a company that owns the trademark. (Wall Street Journal, 7/27/95, B14.)
- # Fry’s Electronics, Inc., a California company, filed suit against Frenchy Frys and Network Solutions, Inc., (the company that assigns Internet domain addresses), among oth-

ers, over use of the Internet domain name “FRYS.COM.” In addition to unfair competition and trademark infringement, Fry’s Electronics included a claim under the Racketeer Influenced and Corrupt Organizations Act of 1970 (RICO). Fry’s Electronics, Inc. v. Octave Systems, Frenchy Frys, Network Solutions, Inc., et al., No. C95-2525-CAL (N.D. Cal. filed 7/13/95).

- # Two California lawyers and a law professor filed a class action suit against America Online, Inc., claiming breach of contract, fraud and unfair trade practices over the alleged inflation of time charges. The complaint in Hagen v. America Online, Inc., No. 97107 (S.F. Sup. Ct. filed 7/14/95), alleges that America Online rounds up fractions of minutes to full minutes and fractions of 46 seconds or more are rounded up with an additional minute tacked on.
- # Computer hacker Kevin Mitnick agreed to transfer of his case from North Carolina to Los Angeles, where he faces charges including probation violation. Mitnick, charged with 23 counts of computer fraud, also agreed to plead guilty to one count of illegally using 15 stolen phone numbers to dial into computer databases, for which he faces 8 months in jail. (San Jose Mercury News, 7/8/95, 2D.)
- # The European Council of Ministers formally adopted a Directive on the Protection of Personal Data. The Directive includes an obligation to collect data only for specified, explicit and legitimate purposes, and to be held only if it is relevant, accurate, and up-to-date. Data subjects are granted important rights, including the right of access to data, to know where it originated, and to rectify inaccurate data. Sensitive personal data can only be processed with an individual’s consent, except in important public interest cases where safeguards have to be established. Where data is transferred to non-EU countries, the Directive pre-

vents EU rules from being circumvented.

- # A computer programmer in East Germany posted confidential information about Intel’s Pentium processor on the Internet. (San Jose Mercury News, 7/7/95, 1F.)
- # Congressmen Christopher Cox (R - CA) and Ron Wyden (D - OR) introduced a bill named the “Internet Freedom and Family Empowerment Act,” which would bar the government from regulating content on the Internet or commercial on-line services and allow service providers to filter out some objectionable material without being held liable for what they do not block. (San Jose Mercury News, 7/1/95, 1D.)
- # The Federal Communications Commission approved Pacific Telesis’ Video Dialtone service, offering consumers services such as movies on demand, home shopping, video games, and high-speed Internet access. (San Jose Mercury News, 7/20/95, 1F and C3.)
- # Packard Bell Electronics Inc. settled a class-action lawsuit claiming the company put used or returned parts in computers it sold as new without informing buyers. Packard Bell could pay out more than \$2 million in customer refunds and PC repairs. (New York Times, 7/15/95, p.27.)
- # The Federal Trade Commission requested information from Compaq Computer Corp. and Packard Bell Electronic Inc. on their policies for returned equipment and use of used parts in new computers. (San Jose Mercury News, 7/16/95.)
- # The U.S. District Court of Appeals for the District of Columbia upheld regulations that prohibit radio and television stations from carrying sexually-oriented “indecent” programming between 6 a.m. and 10 p.m. The Court found the Government had a “compelling interest” in shielding children from indecent materials. (New York Times, 7/1/95, p.7; San Jose Mercury News, 7/1/95, 2D.)

- # The Federal Communications Commission struck down the 25-year old prime-time access rule, which prevented broadcast networks from supplying programs for one hour in the evening (7 to 8 p.m. in the East). (New York Times, 7/29/95, p.17; San Jose Mercury News, 7/29/95, 1D.)
- # President Clinton endorsed Congressional proposals to require television makers to install computer chips that can screen out programs coded as violent. (New York Times, 7/1/95, A1.)
- # Federal Communications Commission officials will solicit public comments about how airwaves should be used in the digital age. The FCC will determine, among other things, when broadcasters must give up analog and shift over to digital transmissions, as well as how, or if, broadcasters will be granted a second slice of airspace. Proposals under consideration may eliminate high-definition television (HDTV) in favor of a wide range of wireless communication services. (San Jose Mercury News, 7/27/95, 3E.)
- # The U.S. Court of Appeals for the District of Columbia ordered the Federal Communications Commission to delay an auction for licenses for personal communications services, blocking the FCC from reserving a block of licenses for small businesses. The order comes in response to a complaint from Omnipoint Corp., which argues the FCC made it too easy for small companies to serve as fronts for large companies. (New York Times, 7/28/95, C4.)
- # The Justice Department withdrew a disputed subpoena requesting a broad array of information from Microsoft Corp., saying it has enough information to determine whether to proceed with an anti-trust action against the company over packaging of access software for the Microsoft Network with its Windows 95 operating system. The three leading online services, CompuServe, America Online and Prodigy, have received requests

from the Justice Department on how much they pay computer manufacturers to install their software on new computers. (San Jose Mercury News, 7/22/95, 1D; New York Times, 7/22/95, p.19.)

- # The Justice Department will support IBM's petition to have a U.S. District Court lift antitrust restrictions IBM accepted in a 1956 consent decree. (San Jose Mercury News, 7/20/95, 1F.)
- # Conner Peripherals Inc. and IBM ended their patent disputes by reaching a 5-year agreement giving each other access to their patent portfolios. (San Jose Mercury News, 7/27/95, 1E.)
- # Computer Associates International reached an agreement with the Justice Department that will allow it to complete its acquisition of Legent Corp. without giving up some of Legent's more valuable product lines. (New York Times, 7/29/95, p.21; San Jose Mercury News, 7/29/95, 1D.)

The Privacy Directive

I. Protecting Personal Data

On July 25, 1995, the European Union announced adoption of a Directive on the Protection of Individuals with Regard to the Processing of Personal Data and on the Free Movement of Such Data. The Directive seeks to prevent abuses of personal data and lays down comprehensive rules, including an obligation to collect data only for specified, explicit and legitimate purposes, as well as to only hold data if it is relevant, accurate and up-to-date. The Directive requires all data processing to have a proper legal basis and, as noted in the European Commission's announcement of the adoption of the Directive, grants data subjects "a number of important rights including the right of access to that data, the right to know where the data originated (if such information is available), the right to have inaccurate data rectified, a right of recourse in the event of unlawful processing and the right to withhold permission to use their data in certain circumstances." Although an English version of the Directive will not be published until later this year, its outline was stated in a Common Position published in February 1995

(<http://privacy.org/pi/>). As written in that version, it is clear that a number of substantial loopholes exist. Success of the Directive will depend upon the commitment of the European Union and its Member States to uphold individual privacy against the pressures of commerce, politics, and security concerns.

II. Free Flow of Data

In its preamble, the Directive states that free movement of goods, person, services, and capital requires not only the free flow of personal data from one Member State to another, but also that "fundamental rights of individuals should be recognized." Different levels of protection for individual rights and freedoms (particularly the right of privacy) are seen as "an obstacle to the pursuit of a number of economic activities at [European] Community level, distort[ing] competition and imped[ing] authorities in the discharge of their responsibilities under Community law." An objective of the Directive, therefore, is a system acceptable to all members, so they no longer have grounds for inhibiting the flow of personal data among them on the ground of protecting individual rights and freedoms.

Importantly, the Directive excludes exclusively personal or domestic matters, such as correspondence and holding address records. There are also significant carve-outs for video surveillance carried out for purposes of "public security, defense, State security (including the economic well-being of the State) and the activities of the State in areas of criminal law," as well as for the processing of sound and image data for journalistic, artistic or literary purposes.

III. Privacy & Consent

The Directive, in its operative provisions, expressly states that the right to privacy is a fundamental right and freedom of natural persons. The Directive covers not only processing of personal data by automatic means, but also other forms of processing personal data which form part of a filing system or are intended to do so. Personal data, itself, is defined as data relating to a natural person, or a person who can be identified, by an identification number, or by reference to specific factors such as physical, physiological, mental, economic, cultural or social identity.

Subject to various exceptions, personal data may only be processed if: the data subject has given unambiguous consent (meaning a “freely given and informed indication” of a person’s “wishes” signifying “his agreement to personal data about him being processed”); necessary to the performance of a contract to which the data subject is a party or at his request on entering into a contract; to protect his vital interests; in compliance with a legal obligation of the person responsible for the processing; or necessary for performance of a task carried out in the public interest. A data subject may object to processing of data related to him “on compelling and legitimate grounds relating to his particular situation.”

IV. Data Quality, Notice & Access

Member States are required, generally, to ensure personal data is:

1. “[P]rocessed fairly and lawfully”;
2. “[C]ollected for specified, explicit and legitimate purposes and not further processed in a way incompatible with those purposes”;
3. “[A]dequate, relevant and not excessive in relation to the purposes for which they are collected,” or further processed;
4. “[A]ccurate and, where necessary, kept up to date”;
5. “[K]ept in a form which permits identification of data subjects for no longer than is necessary for the purposes for which the data were collected,” or further processed.

Member States are also required to prohibit processing of data “revealing racial or ethnic origin, political opinions, religious or philosophical beliefs, trade-union membership, and the processing of data concerning health or sex life.” But States may establish exceptions for reasons of important public interest, if suitable safeguards are implemented. Other exceptions include cases where the data subject’s explicit consent is obtained, as well as in the field of employment law.

The Directive seeks to guarantee fair processing of data. States must notify persons from whom personal data are collected of the following:

1. The identity of the person or company that determines the purposes

and means of processing the personal data;

2. “[T]he purposes of the processing for which the data are intended”;
3. Other information, including the recipients of the data, whether replies to questions are obligatory, the possible consequence of failure to reply, and “the existence of the right of access to and the right to rectify the data concerning him.”

Similar rights exist where the data has not been obtained from the data subject. But the protections may not apply where the provision of information “proves impossible, involves a disproportionate effort,” or if recording or disclosure is required by law. Again, adequate safeguards are required.

In addition to notice, a right of access is established. At reasonable intervals and without excessive delay or expense, a data subject has the right to receive confirmation of whether data related to him are being processed and the purpose therefor. He may also learn the categories of data involved, as well as the recipients of the data. Regarding the data, he may receive the data and information about the source and logic involved in the data processing. In addition, a data subject may obtain rectification, erasure or blocking of incorrect or incomplete data. Unless impossible or involving a disproportionate effort, third parties to whom the incorrect or incomplete data has been disclosed are to be notified of this.

Significantly, broad exemptions and restriction may be established relating to data quality, notice requirements, and rights of access. Member States can adopt legislation to restrict their rights and obligations in order to safeguard: national security, defense, and public security; the prevention, investigation and prosecution of criminal offenses or breaches of professional ethics; “an important economic or financial interest of a Member State or of the Economic Union”; and, the data subject or the rights and freedoms of others. Rights of access may also be restricted in the case of data processed for scientific research or creation of statistics.

V. Objections

The data subject’s right to object to processing of personal data is not limit-

ed to “compelling legitimate grounds.” There is also a right to object to data processing for direct marketing purposes. The data subject is given notice of disclosure of data to third parties for the first time, along with the right, on request and free of charge, to object to data processing for direct marketing purposes.

A data subject is granted, generally, the right not to be subjected to decisions producing a legal effect, or significantly affecting him, solely based on “automated processing of data intended to evaluate certain personal aspects relating to him, such as his performance at work, creditworthiness, reliability, conduct, etc.” Broad exceptions exist, however, allowing such decisions if pursuant to a contract, if “there are suitable measures to safeguard his legitimate interests, such as arrangements allowing him to defend his point of view; or ... [if] authorized by a law which also lays down measures to safeguard the data subject’s legitimate interests.”

VI. Security

Regarding data processing, itself, Member States are required to “implement appropriate technical and organizational measures to protect personal data against accidental or unlawful destruction or accidental loss and against unauthorized alteration, disclosure or access, in particular where the processing involves the transmission of data over a network, against all other unlawful forms of processing.” Security measures are to be commensurate with the risks represented and the data to be protected. In addition, Member States are to be notified of data processing operations. But a State may opt out of this notification by allowing appointment of independent data protection officials, responsible for compliance with the Directive and maintaining a register of processing operations.

VII. Third Countries

Under the Directive, personal data may be transferred to third countries “only if, without prejudice to compliance with the national provisions adopted pursuant to the other provisions of [the] Directive, the third country in question ensures an adequate level of protection.” Adequacy of protection will be assessed in light of all the circumstances. Member States and the European Commis-

sion are to notify each other of cases where a third country does not ensure an adequate level of protection. But transfers to countries that do not ensure adequate levels of protection may occur, if, among other things, "the data subject has given his consent unambiguously to the proposed transfer."

VIII. Remedies

Violation of the Directive's provisions, as enacted by Member States, may lead to a judicial remedy for breach of rights. Compensation for damage suffered may be recovered. Member States are also required to provide for independent, public authorities responsible for monitoring implementation of the Directive. Such authorities shall be able to investigate, intervene, engage in legal proceedings or to bring violations to the attention of judicial authorities, and to hear claims.

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CyberLex September 1995

Notable legal developments reported in August 1995 include the following:

- # The FBI is launching "cyber-swat" teams in San Francisco, Washington D.C., and New York to investigate hacking, industrial espionage, pirating, and other computer crimes. Says Tom Fuentes, head of the operation, "The security of the country is at stake." San Francisco Chronicle, 8/30/95, B1.
- # A southern California retired police detective, Robert Muldrew, and two private investigators, Steven Kudler and David Westland, were charged with unauthorized access of police and other computers,

conspiracy, and fraudulent telecommunications access, as well as selling confidential information. San Jose Mercury News, 8/10/95, 10B.

- # Seven subscribers to a Cincinnati electronic bulletin board system filed a class action lawsuit over a June raid on the offices of the Cincinnati Computer Connection BBS. The Hamilton County Computer Crimes Task Force seized the entire computer system, including all the private electronic mail of the subscribers, in the course of seeking 45 computer image files. The lawsuit claims violation of the First Amendment, the Fourth Amendment, the federal Electronic Communications Privacy Act of 1986, and Ohio common law privacy rights.
- # The publisher of Multimedia Wire (MMWIRE) sued Walt Disney Co. for copyright infringement. The suit claims Disney "systematically" produced multiple copies of MMWIRE's copyrighted newsletter (an electronic daily delivered overnight by fax and electronic mail to executives at entertainment, media, technology, and telecommunications companies) and distributed copies through Disney's offices in LA, and elsewhere in the U.S. and Canada.
- # Carnegie Mellon University ordered an investigation into whether a researcher, Martin Rimm, committed scientific misconduct in his nationally publicized study of dissemination of pornography on the Internet and private computer bulletin board services. The study reached the cover of Time magazine, but has come under harsh attack. San Jose Mercury News, 8/9/95, 1F.
- # Damen Doligez, with the National Institute for Research in Computer Science and Control in France, networked 120 computers, including 2 supercomputers, to read a supposedly secure message sent using Netscape Communications Inc.'s Navigator software. Experts say the problem is a predictable consequence of U.S. export laws, which prohibit U.S. companies from exporting powerful encryption software. The international version of the Netscape Navigator uses a 40-bit key in compliance with U.S. export restrictions, while the U.S. version uses a 128-bit key. Netscape previously said it would take a top-of-the-line desktop computer 6 months non-stop to crack a message encrypted with its 40-bit key. San Jose Mercury News, 8/17/95, 1A.
- # A 24-year-old mathematics graduate, Vladimir Levin, allegedly used a computer in his office in St. Petersburg, Russia, to hack into Citibank New York and remove \$2.8 million. U.S. authorities are seeking his extradition from Britain. Authorities also arrested two people in the United States, one in Israel, and two in the Netherlands.
- # The Securities and Exchange Commission filed a civil complaint in Rhode Island against a 19-year old San Jose man, Daniel Odulo, charging him with posting a false and misleading securities solicitation on the Internet. Odulo had sought to sell \$1,000 bonds that would pay 20%, saying they had a "very low risk," so he could fund a \$500,000 venture to raise cultured eels. Odulo gave the impression his company was an ongoing business, when it is in fact a proposed venture, and included endorsements from fictitious financial advisers. San Jose Mercury News, 8/8/95, 1C.
- # Capital Cities/ABC Inc. reportedly dismissed the manager of on-line services at ABC News, Mitch Davis, for transmitting a sexually-explicit photograph over the company's computer network. ABC has reportedly referred the matter to the FBI. New York Times, 8/11/95, C5.
- # U.S. Marshalls seized the computer of a former employee of the Church of Scientology, Arnaldo P. Lerma, who allegedly posted the 134-page text of a Scientology document setting out its secret scriptures. Lerma was told the computer would be returned after Scientology documents had been deleted. New York Times, 8/14/95, A7.

Network Solutions Inc., the company that assigns Internet domain names, announced a new policy requiring companies that register a domain name to indemnify Network Solutions in any legal action and cover its legal fees, and also requiring companies disputing and Internet address to prove it holds a trademark certificate for the name from the U.S. Patent & Trademark Office. *New York Times*, 8/14/95, C5.

Interactive Gift Express Inc. announced it filed a patent infringement suit against 18 computer and publishing companies for alleged infringement of a patent granted in 1985 and licensed by Interactive in 1994, allegedly covering a system and method "whereby digital information is sold and downloaded from a catalogue that comes from a host computer to a point-of-sale terminal," such as a home computer. The companies named in the suit include Adobe Systems, Inc., Broderbund Software Inc., CompuServe, Intuit Inc., McGraw-Hill Cos. Inc., Waldenbooks, and Ziff Communications Co. *New York Times*, 8/28/95, C2; *San Francisco Chronicle*, 8/28/95, B2.

Three writers' groups, the Authors Guild, the American Society of Journalists and Authors, and the National Writers Union, criticized a new policy by the *New York Times* requiring outside writers to relinquish all rights, including electronic rights, to materials published in *The Times*. The policy does not cover writers for the newspaper's Op-Ed page or the *New York Times* magazine. *New York Times*, 8/9/95, C5; *San Jose Mercury News*, 8/9/95, 3F.

The Federal Trade Commission issued new national standards for telephone sales, effective January 1, 1996, require telemarketers to say at the outset that it is a sales call and explain the product or service offered. Total cost must be disclosed prior to asking for payment. The FTC also imposed stiff fines on "credit card laundering," in which money is collected

through a credit card even if companies like Mastercard and Visa have refused to authorize the transfer. This is done by a company not authorized to receive money electronically persuading an authorized company to collect the money for it by running the credit card through the legitimate company's card-swipe machine. *New York Times*, 8/17/95, C3; *San Jose Mercury News*, 8/17/95, 1F.

In the midst of trial, a San Francisco court dismissed a repetitive stress injury case brought by a San Francisco graphic designer against Apple Computer, Inc. The plaintiff, Carolyn Brust claimed injury in her right hand was caused by her Apple mouse and keyboard. The dismissal came after Judge James Warren disallowed testimony by an occupational health professor, because it did not meet the California legal standard for admissibility. *The San Francisco Recorder*, 8/4/95, p.1.

The Justice Department extended its investigation of Microsoft Corp. into the bundling of Internet browsing software. The Justice Department also announced it would not take antitrust action against Microsoft Corp. before the August 24, 1995, introduction of the Microsoft network, but that its investigation will continue. *San Jose Mercury News*, 8/1/95, 1F; *New York Times*, 8/9/95, C1.

The Computer & Communications Industry Association asked U.S. District Court Judge Thomas Penfield Jackson to broaden the government's antitrust settlement with Microsoft Corp. to extend to Windows NT the same restrictions the settlement places on licensing and marketing practices involving DOS and Windows operating system software. *San Jose Mercury News*, 8/17/95, 1F.

The Securities and Exchange Commission will maintain free Internet access to its library of corporate records. Although private companies have offered to take over the Edgar on-line service that allows the reading of corporate fil-

ings made with the agency, SEC Chairman Athur Levitt Jr. said taxpayers and shareholders have already paid to compile this information and should not have to pay again, "[a]nd a library that charges people by the page, or by the minute, is no longer a library." The cost for the SEC to take on Edgar would be "quite modest," said Levitt. *New York Times*, 8/28/95, C2.

The House of Representatives approved a telecommunications bill that vastly reduces regulation on everything from cable television to local and long-distance phone service. The bill would eliminate limits on cable rates, allow long-distance carriers, cable companies and others to compete with local phone companies, allow Bell companies to offer long-distance service if there are local competitors offering business and residential service, and require new television sets to contain a feature (the v-chip) that would allow parents to block violent materials, among other things. *New York Times*, 8/5/95, p.1.

Government Recommendations

I. Closing Loopholes?

In early 1993, President Clinton created the Information Infrastructure Task Force "to articulate and implement the Administration's vision for the National Information Infrastructure (NII)." The Working Group on Intellectual Property Rights, a significant part of this effort, was formed "to examine the intellectual property implications of the NII and make recommendations on any appropriate changes to U.S. intellectual property law and policy." In its report, just published, the Working Group recommends changes in the Copyright Act to recognize that copyright owners can control distribution of copies to the public by transmission, to grant a full public performance right for sound recordings, as well as to make it a criminal offense to willfully infringe a copyright by reproducing or distributing copies with a retail value of \$5,000 or more. The Working Group also recommends prohibiting goods and services that defeat techno-

logical methods of preventing unauthorized use, and amendment of the Copyright Act to protect the integrity of copyright management information, among other things. (A copy of "The Report of the Working Group on Intellectual Property Rights" can be obtained at <http://www.uspto.gov/web/ipnii/>.) It remains to be seen whether these recommendations simply close existing loopholes and update the intellectual property system, or change the existing balance in favor of expanded monopoly rights for publishers, resulting in less innovation and creativity in the marketplace.

II. Transmission & Distribution

Examining the adequacy of copyright law to cope with technological change, the Working Group finds the balance of the Copyright Act has changed—in some instances to the benefit of copyright owners; in others, to users. While affirming that the Copyright Act is "fundamentally adequate and effective" in providing the necessary copyright protection for the betterment of our society, the Working Group proposes several amendments and changes.

The Working Group recommends the Copyright Act be amended to "expressly recognize that copies or phonorecords of works can be distributed to the public by transmission, and that such transmissions fall within the exclusive distribution right of the copyright owner." This change would clarify the situation posed by electronic communication systems that transfer copies of a work to others, but leave an original in the hands of the distributor.

Outside the digital world, for example, a purchaser of a book at a bookstore can sell it at a garage sale or otherwise dispose of it. Although the Copyright Act gives the copyright owner the right to control distribution of a work, the "first sale" doctrine stops the owner of a copyrighted work from preventing the purchaser of a particular copy from further distributing ownership of that copy. The Working Group explains that the first sale doctrine would not, however, allow the purchaser to distribute a copy of the copy purchased through a computer network, "because, under current technology the transmitter retains the original copy of the work while the recipient of the trans-

mission obtains a reproduction of the original copy (i.e., a new copy), rather than the copy owned by the transmitter." In this case, there may be copyright infringement because the first sale doctrine does not allow reproduction—only distribution of a particular copy..

The Working Group detects confusion in recent court decisions involving computer bulletin board systems. In a case involving unauthorized downloading of digitized photographs (whose reproduction was prohibited), the court recognized that the owner's right to distribute copies had been "implicated" by the operator of the bulletin board, who supplied a product containing unauthorized copies of copyrighted photographs. *Playboy Enterprises Inc. v. Frena*, 839 F. Supp. 1552 (M.D. Fla. 1993). It is less than clear to the Working Group, however, whether the operator "distributed" or "reproduced" an unauthorized copy of a photograph obtained by a board subscriber.

In another case, a computer bulletin board system was used to "make and distribute" copies of copyrighted video games. The court found "unauthorized copying and distribution" of the games on the bulletin board, and that the defendant profited from the "distribution." *Sega Enterprises Ltd. v. MAPHIA*, 857 F. Supp. 679 (N.D. Cal. 1994). The court's held that the reproduction right had been infringed but, notes the Working Group, apparently did not reach a like conclusion with respect to the distribution right."

Difficulties related to electronic communication systems extend to importation of works into the United States—a right given to the copyright owner, with limited exceptions. On transmission of works into the United States through on-line systems, the Working Group observes,

"A data stream can contain a copyrighted work in the form of electronic impulses, but those impulses do not fall within the definition of 'copies' or phonorecords. Therefore, it may be argued that the transmission of a reproduction of a copyrighted work via international communication links fails to constitute an 'importation' under current law, just as it is less than clear that a domestic transmission of a reproduction of a work constitutes a distribution of a copy under a literal reading of the Copyright Act."

In light of the above and because the "costs and risks of litigation" to define and clarify the issue "would discourage and delay use of the NII," the Working Group proposes to amend the Copyright Act to state that transmissions to the public are included within the distribution right. This is not intended to create a new right, but to make clear that people having a right to reproduce a work do not automatically have the right to distribute it through transmission, "thereby displacing the market for the copyright owner or his distribution licensee." Implementation would entail a number of changes to the Copyright Act, including amendment of the definition of "publication," which currently requires "a material object—a copy of the work —" to change hands.

The Working Group also recommends changing the definition of "publication" to recognize that "a work may be published through the distribution of copies of the work to the public by transmission." (Restricted transmissions of copies, e.g., via private e-mail message or within a company computer network where further distribution is not authorized, would not be regarded as publications.) This definitional change will impact copyright owner, because once works have been published they,

"(1) [M]ust be deposited in the Library of Congress; (2) are subject to more limitations on the [copyright owner's] exclusive rights, including a broader application of [the fair use doctrine]; (3) must meet certain author nationality or domicile requirements to be eligible for protection; and (4) must bear a copyright notice if published before March 1, 1989."

The Working Group hopes the change will protect the scholarly and scientific record, by preserving works (by means of the deposit requirement) that otherwise "might be updated or revised on-line, destroying—or at least obscuring—the original published versions."

Similarly, the Working Group recommends amendment of the Copyright Act to reflect that copies of copyrighted works can be imported into the United States by transmission. Interestingly, the Working Group "recognize[s] that the U.S. Customs Service cannot, for all practical purposes, enforce a prohibition on importation by transmission...."

III. Sound Recordings

The Working Group believes that sound recordings transmission “will certainly supplement and may eventually replace the current forms of distribution of phonorecords.” In addition to recommending the Copyright Act be amended to make clear sound recordings can be distributed by transmission, the Working Group seeks a full public performance right for sound recordings, “particularly with respect to all digital transmissions.”

Currently, there is no public performance right for sound recordings under U.S. law. To transmit a public performance of a sound recording, observes the Working Group, a person is simply required to obtain a license from, and pay a royalty to, the copyright owner of the underlying musical composition. No permission need be obtained from, and no license fee need be paid to, the copyright owner of the sound recording or the performer. This situation, says the Working Group, is an historical anomaly without strong policy justification “— and certainly not a legal one.” Granting this right will treat creators of these works the same as creators of all other works capable of being performed, and will also “strengthen the hand of Government negotiators and private advocates seeking a fair share of foreign royalty pools.”

IV. Criminal Sanctions

Under the Copyright Act, “[c]riminal sanctions are levied against infringers if the infringement was willful and for purposes of commercial advantage or private financial gain.” In one recent case, an indictment was dropped against a university student who established computer bulletin boards for the receipt and distribution of unauthorized copies of commercially published, copyrighted software. *U.S. v. LaMacchia*, 871 F. Supp. 535 (D. Mass. 1994). Although the indictment alleged loss of revenue to copyright owners in excess of \$1 million during a six-week period, the student could not be charged for criminal violation of copyright law because he sought no profit. To remedy this situation, the Working Group supports changing copyright and criminal laws to make it a criminal offense to willfully infringe a copyright by reproducing or

distributing copies with a retail value of \$5,000 or more.

V. Technological Protection

As copyright owners will look to technology for protection, the Working Group suggests prohibition of goods and services that defeat technological methods of preventing unauthorized use. Specifically, the Working Group recommends that,

“[T]he copyright Act be amended to include ... a provision to prohibit the importation, manufacture or distribution of any device, product or component incorporated into a device or product, or the provision of any service, the primary purpose or effect of which is to avoid, bypass, remove, deactivate, or otherwise circumvent, without authority of the copyright owner or the law, any process, treatment, mechanism or system which prevents or inhibits the violation of any of the [copyright owner’s] exclusive rights....”

In the face of concerns the prohibition is incompatible with the fair use privilege, the Working Group notes that the “fair use doctrine does not require a copyright owner to allow or to facilitate unauthorized access or use of a work.” In any event, claims the Working Group, “if the circumvention device is primarily intended and used for legal purposes, such as fair use, the device would not violate the provision, because a device with such purposes and effects would fall under the ‘authorized by law’ exemption.” Similarly, says the Working Group, “devices whose primary purpose and effect is to defeat the [technological] protection for [copies of works not protected by copyright law] would not violate the provision.” Acknowledging that a manufacturer could find itself in a situation where a device could fail to be used primarily for the purpose for which it was sold and instead, to the surprise of the manufacturer, to be used primarily for defeating copyright protection technology, the Working Group proposes a “innocent violation” provision, to allow a court to reduce or eliminate altogether any damages for which the manufacturer may otherwise be liable. This limitation requires, however, that the manufacturer bear the burden of proving

that it “was not aware and had no reason to believe that its acts constituted a violation.”

VI. Copyright Management Information

The Working Group believes that in the future, copyright management information associated with a work “may be critical to the efficient operation and success of the NII.” Such information might include the name and other identification of the author and the copyright owner, and the terms and conditions of use. Also included may be the country of origin, the year of creation and first publication, the name and other information about licensees, as well as standardized codes. Reliable information would allow persons to find and make authorized uses of works, as well as facilitate efficient licensing and reduce transaction costs. Accordingly, the Working Group recommends the Copyright Act be amended to, “prohibit the provision, distribution or importation for distribution of copyright management information known to be false and the unauthorized removal or alteration of copyright management information.”

Although copyright owners are not required to provide copyright management information, the Working Group would require that such information be accurate if given.

VII. Other Concerns

In addition, the Working Group addresses special exemptions for libraries under the Copyright Act, suggesting libraries should be permitted to engage in digital copying under certain circumstances. The Working Group also recommends an exemption to allow non-profit organizations to reproduce and distribute, at cost, Braille, large type, audio or other editions of previously published literary works in forms intended for the visually impaired, provided the owner of U.S. distribution rights has not entered the market for such editions in the year following first publication. Regarding patents and trademarks, the Working Group recommends, among other things, obtaining public input relating to measures to ensure the authenticity of electronically-disseminated publications.

CyberLex October 1995

Notable legal developments reported in September 1995 include the following:

- # The Justice Department searched 125 homes across the country, including New York, Newark, Dallas and Miami, and announced a dozen arrests in a two-year investigation of use of America Online for distribution of child pornography and to lure minors into sex. More arrests are expected. One person arrested, Craig Zucker, ran a day care center in his home in Chicago, Illinois, and is charged with distributing by computer three pictures of underage girls engaged in sexually explicit acts. The investigation began in 1993, after the abduction of 10-year-old George Stanley Burdynski for his neighborhood in Brentwood, MD. The boy has not been found. AOL notified the FBI after users reported photos of nude children were circulating, and announced it would not tolerate use of its network for illegal activities. Violation of Federal law on child pornography, including creating, possessing, and disseminating child pornography, may result in 10 years imprisonment and a \$10,000 fine. New York Times, 9/14/95, A1; San Francisco Chronicle, 9/14/95, A1; Marin Independent Journal, 9/16/95, A5.
- # The Secret Service created a computer bulletin board system, called "Celco 51," using it to buy hundreds of stolen cellular phone codes. Traffic on the board led to raids in several states, the arrest of 6 persons, seizure of more than 20 computer systems as well as equipment used to make cellular phones operate with stolen codes. The suspects allegedly broke into the computer system of McCaw Cellular (now named AT&T Wireless). New York Times, 9/12/95, A1; Marin Independent Journal, 9/14/95, C1.
- # The Russian who allegedly masterminded a break-in of Citicorp's computers, making unauthorized transfers of \$40 million and withdrawals of \$400,000, was ordered to stand trial in the U.S. Vladimir Levin, arrested at Heathrow Airport in England, will face charges of theft, computer misuse, forgery, and false accounting. New York Times, 9/21/95, C18.
- # Two Berkeley, California, men were indicted by a federal grand jury in Sacramento, California, on charges of conspiracy, fraud, and destruction of computer data, related to the theft of credit card numbers from Tower Records/Video stores throughout the country. Terry Patrick Ewing, 21, and Michael Yu Kim, 20, who face more than 20 years in prison and a \$250,000 fine, allegedly used computers over the course of four months to tap into a central computer owned by M.T.S., Inc., the parent company of Tower Records/Video stores, gathering 2,000 credit card numbers and account information, and also to delete files in an attempt to cover their tracks. They allegedly charged up to \$20,000. San Francisco Chronicle, 9/16/95, A17.
- # A San Jose, California, man was found guilty on three counts of phone fraud, for making, using and cloning cellular phones. Clinton Watson, 45, allegedly was involved in or connected to the sale of more than 1,000 cloned phones or programming chips, and had 600 unauthorized phone numbers in his possession. San Francisco Chronicle, 9/27/95, B1.
- # Federal District Court Judge John Kane ordered the Church of Scientology to return computers and files seized by federal marshals and the church from two men in Boulder, Colorado (Lawrence Wollersheim and Robert Penny), who used a computer bulletin board named Factnet to disseminate information critical of the church. New York Times, 9/14/95, A11.
- # America Online asked its subscribers to change their passwords on a regular basis to counter problems caused by hackers and persons posing as AOL staff. Hackers have reportedly tampered with AOL's business and customer information files. San Francisco Chronicle, 9/7/95, A1, & 9/8/95, B1.
- # The Clinton Administration announced proposals to relax restrictions on export of cryptographic software, allowing export of encryption algorithms using 64-bit keys in place of the 40-bit keys currently permitted, but only if individual keys are given to "escrow agents" who could make them available to law enforcement agents under standard legal procedures. New York Times, 9/11/95, C5.
- # FBI Director Louis J. Freeh said the FBI might consider other approaches if consensus is impossible on the Administration's proposal for voluntary compliance with a "key escrow" plan for public use of strong cryptography. New York Times, 9/25/95, C5.
- # Two first-year graduate students at the University of California at Berkeley discovered a serious security flaw in the Netscape Navigator (the Internet browser software) that could allow a person with a computer to break Netscape's public key encryption system in less than a minute. The company said it would release a new version without the flaw the following week. New York Times, 9/19/95, A1.
- # Microsoft Corp. and Visa International announced a standard for on-line payments and financial transactions, called "Secure Transaction Technology," intended to guarantee security and privacy of payment and purchases made over computer networks. The announcement was met with criticism that the proposal is an attempt to make the on-line world beholden to Microsoft and Visa. Mastercard has been developing a separate system, named "Secure Courier," with Netscape Communications Inc. New York Times, 9/28/95, C1.
- # A Caribbean resort owner and a scuba instructor, Arnold Bowker and John Joslin, filed suit in Cook County, Illinois, requesting that a Circuit Court order disclosure of the name of an America Online subscriber that allegedly defamed

them on an AOL bulletin board. Posting under a pseudonym (Jenny TRR), the subscriber explained she had a bad experience at the resort while learning to dive with an instructor who used drugs—writing, in part, that “diving with a stoned instructor was a little scary.” Bowker, owner of a dive shop at the Carib Inn in Bonaire, Netherland Antilles, heard of the allegations from a visitor, and investigated. Believing the allegations to be untrue, Bowker posted a rebuttal on the same bulletin board and asked the subscriber to recant. *Marin Independent Journal*, 9/16/95, B6; *San Francisco Chronicle*, 9/16/95, A4.

- # MCI Communications Corp. and AT&T Corp. asked the Federal Communications Commission to block French and German telephone companies from collectively buying 20% of Sprint Corp. MCI and AT&T want France and Germany to open their telecommunications markets to U.S. companies. *New York Times*, 9/2/95, p.15.
- # A Presidential study group headed by Bruce Lehman, U.S. Commissioner of Patents and Trademark, issued a report titled “Intellectual Property and the National Information Infrastructure,” recommending changes to bring copyright law into line with current technology. *New York Times*, 9/6/95, C5.
- # Network Solutions Inc. announced that Internet users will have to pay \$50 per year to maintain domain names they have registered. Network Solutions will send out three electronic reminders, 60, 30 and 15 days before the due date. *New York Times*, 9/14/95, C1.
- # The Federal Communications Commission accelerated repeal of regulations blocking television networks from entering the syndication market that were scheduled to be lifted in November 1995. *New York Times*, 9/7/95, C5.
- # A Federal Court in New York barred Time Warner from scrambling sexually explicit programs broadcast over its cable system. At issue is the 1992 Federal Cable Act, which

allows cable operators to voluntarily ban sex programs on leased-access stations, and also provides that if such programs are not banned, operators must scramble the signal. In July, a U.S. Court of Appeals in Washington placed a stay on the latter part of the law, pending review by the U.S. Supreme Court. The New York ruling said the law was likely to be held unconstitutional, as amounting to government censorship, and pointed out the potential stigmatization of subscribers who ask for the pornographic shows. *New York Times*, 9/19/95, A18; 9/21/95, A1 & C20.

- # A court of appeals gave the Federal Communications Commission permission to proceed with an auction of radio frequencies for personal communication services previously enjoined because of plans to give women and minorities preferences by reducing the cost of their bids. The issue had been resolved by extending preferences to all small business, but again delayed by claims the new rules made it too easy for large corporations to gain de facto control of bidders. *New York Times*, 9/29/95, C5.
- # Infinity Broadcasting Corp., the employer of radio disk jockey Howard Stern, agreed to pay the Government \$1.7 million to settle accusations of indecent radio broadcasts, ending a dispute with the Federal Communication Commission dating back to 1992. *New York Times*, 9/2/95, p.13.
- # The U.S. Supreme Court will decide whether Lotus Development Corp. has a valid copyright in the series of commands used to operate the Lotus 1-2-3 spreadsheet program. The case involves claims brought by Lotus against Borland International, which designed its own spreadsheet program, Quattro Pro, so that users could operate it as if they were using 1-2-3. *New York Times*, 9/28/95, C2.
- # A member of the Federal Communications Commission, James H. Quello, accused the Commission’s chairman (Reed Hundt) and a se-

nior White House official (Greg Simon) of pressuring Westinghouse Broadcasting to offer more educational programming as a condition for approval of its plan to acquire CBS In. *New York Times*, 9/27/95, C4.

- # The Patent & Trademark Office will make abstracts of its patent database freely available on the Internet, beginning November 9, 1995. *New York Times*, 9/27/95, A15.

Cryptography & Speech

I. Restricting Access

Dr. Daniel Bernstein has some ideas about cryptography, the art and science of keeping messages secure, that he wants to share. In particular, he wants to publish his ideas and research in an Internet discussion group named sci.crypt, as well in print. But the Government has told Bernstein that he cannot “export” a document or source code describing the encryption system he developed, called Snuffle, without registering as an arms dealer and obtaining an arms license from the State Department. The Government says these items are on the U.S. Munitions List and covered by the International Traffic in Arms Regulations. But Bernstein claims the Government’s actions prevent U.S. citizens from engaging in private, electronic communications with foreign persons, and, as a practical matter, will restrict private domestic electronic communications. Bernstein also argues that by “restricting access to the tools which allow anonymity and privacy, the government puts the communications of all of its citizens at risk.” According to Bernstein,

“Without cryptography, what people send via computers is the electronic equivalent of a postcard, open to view by many people while the message is in transit. With cryptography, people can put both messages and money into electronic ‘envelopes,’ secure in the knowledge that what they send is not accessible to anyone except the intended recipient.

... Continued development of cryptography promises to make it possible for the worldwide computer Internet to offer private, secure and protected communication among billions of people worldwide.”

II. Ideas as Munitions

While a Ph.D. candidate in Mathematics at the University of California at Berkeley, Daniel Bernstein worked in the field of cryptography and developed an “encryption algorithm or recipe which he calls ‘Snuffle.’” He described Snuffle in English and in mathematical equations, as well as in the “C” computer programming language (Snuffle.c and Unsnuffle.c). Bernstein wants to publish his cryptographic ideas and research results “as part of the normal process of academic, scientific and political exchange of ideas and information,” and, in particular, in “text journals as well as in an online discussion group about the science of cryptography, called sci.crypt.

According to Bernstein, “[a]ware of the [Government’s] civil and criminal restrictions on cryptography export, [he] asked the Office of Defense Trade Controls (“OTDC”), an arm of the State Department, to find out whether he could publish his ideas.” He told OTDC that he wanted to export the document “The Snuffle Encryption System,” and the Snuffle.c and Unsnuffle.c source files.

Bernstein filed 5 different commodity jurisdiction requests. OTDC determined that each of the items are on the U.S. Munitions List and covered by the International Traffic in Arms Regulations (ITAR), so he may not “export” them without registering as an arms dealer and obtaining an arms license from the State Department. Bernstein then filed a lawsuit so he might publish his own scientific ideas without such restriction. Bernstein v. U.S., C95-00582 MHP (N.D. Cal.)

In response, the Government asks the Court to dismiss Bernstein’s complaint. The Government notes the Arms Export Control Act (17 U.S.C. Section 2778(h)) expressly prohibits judicial review of the determination that cryptographic software should be designated a “defense article” on the U.S. Munitions List. Here, snuffle 5.0 software was designated a defense article under statutory authority, “[i]n furtherance of world peace and the security and foreign policy of the United States.” According to the Government, both the Arms Export Control Act and the Constitution prevent the Court from second-guessing the designation — the question of whether an item should be placed on the Muni-

tions List possessing nearly every trait that would render it “political.” In addition, claims the Government,

“No satisfactory or manageable standards exist for judicial determination of the issue, as [the Government itself] acknowledge[s] the disagreement among experts as to whether [the particular item] belongs on the list. Neither the courts nor the parties are privy to reports of the intelligence services on which this decision, or decisions like it, may have been based. The consequences of uninformed judicial action could be grave. Questions concerning what perils our nation might face at some future time and how best to guard against those perils ‘are delicate, complex, and involve large elements of prophecy. They are and should be undertaken only by those directly responsible to the people whose welfare they advance or imperil....’” (Citations omitted.)

Bernstein claims the Court of Appeals for the Ninth Circuit has stated that colorable constitutional claims may be reviewed by courts despite the seemingly absolute preclusion of the Arms Export Control Act (AECA). However, he has not raised colorable claims here, asserts the Government, because (1) this case involves not “speech” covered by the First Amendment, “but the conduct of exporting a functioning defense article,” and (2) even if “speech” were incidentally involved in the State Department’s control of the export of cryptographic software, “such an incidental infringement easily passes First Amendment muster”

III. Regulation of Conduct

Bernstein claims the State Department seeks to regulate his right to “publish” a “scientific paper” or “to engage in academic inquiry” and “to openly discuss” ideas related to cryptography. But, says the Government, the State Department did “no such thing.” The State Department simply determined Bernstein cannot export his cryptographic software without an export license. As explained by Bernstein and confirmed by the National Security Agency, Snuffle 5.0 is a functioning cryptographic product — software capable of maintaining the secrecy or confidentiality of data.

The Government observes that “conduct” is protected by the First Amendment only if it is or could be

“sufficiently imbued” with elements of communication. The Supreme Court looks for “[a]n intent to convey a particularized message ..., and [whether] the likelihood was great that the message would be understood by those who viewed it.” Here, export of cryptographic software is not sufficient imbued with communicative elements, says the Government, and does not “convey a particularized message’ to its foreign recipients.” Despite claims this case involves Bernstein’s right to publish a paper, the Government argues that Bernstein did not submit to the State Department an academic discourse on algorithmic theories — he submitted “source code for data encryption, along with instructions on how to make it operational on a computer so that users could have an interactive, zero-delay, encrypted conversation.” The dissemination of Snuffle would have a functional — not communicative — purpose, and its designation as a defense article “does not,” therefore, “constitute the regulation of expression upon which a colorable constitutional claim may be based.”

IV. Incidental Restriction of Speech

Even if the First Amendment applied to Bernstein’s export of cryptographic software, the Government argues that “[t]he State Department’s commodity jurisdiction determinations do not run afoul of First Amendment principles because any impact on [Bernstein’s] ‘speech’ would be incidental to the government’s regulation of the conduct of exporting cryptographic software.”

According to the Supreme Court, an incidental restriction on speech will be supported if,

“(i) it is within the constitutional power of the government; (ii) it furthers an important or substantial governmental interest; (iii) the governmental interest is unrelated to the suppression of free expression; and (iv) the incidental restriction on alleged First Amendment freedoms is no greater than is essential to the furtherance of that interest.”

Here, says the Government, the first two elements are readily met. Regulation of the export of defense articles is within the power of Congress to provide for the

common defense and regulate foreign commerce. And there is a substantial governmental interest in “control[ing] the availability of cryptography from the United States so that critical foreign intelligence gathering functions are not harmed....” Further, “the determination that cryptographic software like [S]nuffle should be considered a ‘defense article’ subject to export control ‘[i]n furtherance of world peace and the security and foreign policy of the United States,’ 22 U.S.C. Section 2788(a)(1), is not one for courts to evaluate.”

On the third element, the Government also believes the regulation of the export of defense articles and services under ITAR (22 C.F.R. Subchapter M, Parts 120 - 130) does not suppress free expression. The U.S. Munitions List (USML) and ITAR cover Snuffle software, asserts the Government, because of its function and capability to encrypt information, and is, therefore, “unrelated to the suppression of speech.”

Fourth, the Government claims the inclusion of certain cryptographic software on the USML is an incidental restriction on alleged First Amendment freedoms no greater than is essential “in furtherance of a substantial national security interest to protect the United States’ signals intelligence capabilities that are utilized to provide essential information to national security policymakers and military commanders.” ITAR, in fact, “excludes certain cryptographic software that does not maintain data confidentiality or secrecy (such as for data authentication and financial functions), as well as mass market software products with limited encryption capabilities.” In so doing, ITAR excludes cryptographic software that does not pose a risk to national security, and “responds precisely to the substantive security problems which legitimately concern the [Government].” Looking to a decision by the Ninth Circuit Court of Appeals, *U.S. v. Elder Industries*, 579 F.2d 516 (9th Cir. 1978), the Government argues that,

“[I]f the government may incidentally restrict the transmission of technical data by making it unlawful to assist a foreign national in the development of a functioning defense article, it may, consistent with the First Amendment, regulate the exportation of the functioning

defense article itself, even if such regulation may, in certain cases, incidentally inhibit ‘expression.’”

V. A Misinterpretation?

To the extent Bernstein claims the Government’s actions constitute a “prior restraint” on the “publication of scientific papers,” the Government argues the claim is “the product of his own misinterpretation of the facts and the ITAR.” According to the Government,

“[N]owhere do the commodity jurisdiction determinations indicate that [Bernstein] is barred from publishing a scientific paper concerning the theory of [S]nuffle, or expressing ideas about cryptography in general. What [Bernstein] cannot do is export [S]nuffle software without first obtaining a license from the State Department.”

Control of the export of [S]nuffle software does not implicate the First Amendment, says the Government, because the software functions to encrypt data and “control of its export is unrelated to any incidental restriction on expression that such an export may entail.”

Bernstein’s claim the Government restrained publication of explanatory information fails, says the Government, because the State Department’s determination did not assess the explanatory information separately for export control purposes. The Government believes Bernstein only sought a determination for [S]nuffle and certain technical data. The State Department advised Bernstein that it reviewed the explanatory information only to evaluate the software. To the extent technical data was included, the State Department advised that Bernstein would need a license to export the data if his objective were to assist a foreign person or enterprise in obtaining or developing his cryptographic software.

In response to Bernstein’s claim the AECA and ITAR violate the First Amendment on overbreadth grounds, particularly because they prevent him from “discussing or revealing his ideas in any public forum in the United States on the grounds that it might have the effect of disclosing the information contained therein to a foreign person,” the Government urges that the Ninth Circuit Court of Appeals has already ruled that the relevant ITAR provisions are not unconstitutionally

overbroad. Bernstein’s overbreadth claim is, therefore, foreclosed. The Government notes that the definition of technical data under ITAR excludes “information concerning general scientific, mathematical or engineering principles commonly taught in schools, colleges, and universities,” as well as information in the “public domain.”

The Government also rejects Bernstein’s claim the AECA and ITAR are impermissibly vague. In part, the Government observes, “[t]he definition of cryptographic software as that ‘with the capability of maintaining secrecy or confidentiality’ is surely susceptible to common understanding by ‘a person of ordinary intelligence.’”

VI. First Amendment Violation

In opposition to the requested dismissal, Bernstein notes that the definition of “export” under ITAR includes “disclosing (including oral or visual disclosure) or transferring technical data to a foreign person, whether in the United States or abroad.” Under this definition, says Bernstein,

- “1. [He] cannot even teach his ideas to his students in a classroom without government permission, unless he ensures that none of his students is a ‘foreign person.’
2. [He] would export his ideas if he were to disclose them at an academic conference, because said publication would surely disclose his ideas to a ‘foreign person.’
3. [He] would export his ideas if he were to post a message containing them to the sci.crypt newsgroup. Export includes distributing the ideas over the Internet by posting them to internationally available newsgroups, since this might disclose them to a ‘foreign person.’

Bernstein claims “he cannot even stand on a street corner and talk about his ideas, because this might ‘export arms’ if a foreign person was listening.”

Bernstein agrees he cannot challenge the designation of an item on the USML, but notes his challenge is, in fact, to the constitutionality and ultra vires nature of the entire regulatory scheme, on grounds that it restrains his right to com-

municate without meeting the Constitutional standards for such restraints. Here, says Bernstein, it is not conduct that ITAR restricts, but disclosure and communication. No export license is required under ITAR to actually use encryption.

VII. Government Sleight-of-Hand

According to Bernstein, the Government is “attempting a bit of sleight-of-hand here, hoping to narrow the scope of this lawsuit.” The Government wrongly construes the State Department’s determinations as referring only to “cryptographic software, deliberately ignoring his other submissions, and then argue that publishing ‘software’ never can be protected expression.” But, says Bernstein, the Government “did extend ... control to both the code and non-code items submitted by [him].”

ITAR controls much more than encryption software. The definition of “software” under ITAR, says Bernstein, “includes but is not limited to the system functional design, logic flow, algorithms, applications programs, operating systems and support software for design, implementation, test, operation, diagnosis and repair.” As non-code items arguably include logic flow and algorithms that are part of Bernstein’s ideas, they could be included within the definition of “software.” And even if non-code items do not constitute defense articles, they still may be controlled as technical data or to the extent they may furnish “assistance” to persons in the use of controlled cryptographic software. In light of the above, Bernstein claims he has presented colorable Constitutional claims the Government’s action “constituted a prior restraint on his right to publish non-software expressions of his ideas, as well as those written in computer code.”

Bernstein notes that in a 1978 memorandum, the Justice Department concluded that “existing provisions of the ITAR are unconstitutional insofar as they establish a system of prior restraint on the disclosure of cryptographic ideas and information developed by scientists and mathematicians in the private sector.”

Bernstein explains he is a scientist and an academic who seeks to publish his ideas for scientific and academic discussion. He seeks discussion by the worldwide community. His communication meets the First Amendment val-

ue of the search for truth through the “marketplace of ideas.” His desire for peer review fulfills the First Amendment value of self-expression. Bernstein’s activities, therefore, fall within First Amendment protections for academic discourse.

Bernstein also seeks to engage in political speech. He observes,

“There has been considerable public debate over the role of cryptography in society and whether the government’s current regulatory scheme is appropriate. Government agencies are major players in this debate. When the agencies which administer laws and regulations which can act as a prior restraint are also involved in policy formulation about the same subject, there is a clear risk that these agencies may interfere with that process of political and social change, and ‘raise[s] the specter that the Government may effectively drive certain ideas or viewpoints from the marketplace.’ Here, [Bernstein’s] speech contributes to the cryptography policy debate by demonstrating that nonrestricted hash functions are in truth as powerful as the most heavily restricted items, and that one may be easily converted to the other. To [Bernstein’s] audience of scientists and cryptography policymakers, his speech argues that the government’s policy is arbitrary and ineffective, rebutting the government’s public assertions to the contrary.”

VIII. Controlling Speech

The Government cannot avoid the traditional tests of prior restraints simply by labeling the publication of computer code as “conduct of export,” says Bernstein. Here it is disclosure that is regulated. Bernstein desires to communicate his ideas, and there must not be a Constitutionally cognizable distinction between communication of ideas in English or mathematical symbols and the communication of those ideas written in the language of computer code. Among other things, Bernstein recalls that “software” is treated as expression under copyright law, and that the Supreme Court holds that the First Amendment prohibits the Government from restricting the languages used by its citizens.

Notably, Bernstein argues the Government’s scheme has the effect of controlling private speech by controlling the tools necessary for it. But, “the Supreme Court has long held that the government

cannot target the tools of expression in order to improperly restrict expression itself.” Claims Bernstein,

“The First Amendment includes the right to speak confidentially. It prevents ‘compelled speech’, and preserves the autonomy to control one’s own speech. It protects anonymous speech. It prevents compelled disclosure of those with whom one associates and speaks. It requires ... that the government allow people to speak in any language they choose. It extends to a person’s right to communicate with foreigners.

If the government is successful here, it will undermine all of these protections. It will prevent U.S. citizens from engaging in private, electronic communications with foreign persons. As a practical matter, it will also restrict private domestic electronic communications. ... By restricting access to the tools which allow anonymity and privacy, the government puts the communications of all of its citizens at risk.” (Citations omitted.)

IX. Real Issues

Bernstein argues that the Government has exceeded its authority in applying ITAR to him, as Congress “never intended that the AECA be applied to the publication academic or scholarly publication of scientific and technical information.” Neither the statutory language nor legislative history reflect an intent to control academic publications, as noted by the Justice Department in its 1978 Memorandum.

In further detail, Bernstein argues that judicial review is not precluded under the political question doctrine, noting the Supreme Court struck an injunction against publication of the Pentagon Papers even though the Vietnam War was still in progress. Bernstein also claims jurisdiction here is proper under the Administrative Procedures Act, 5 U.S.C. Section 704.

Accordingly, Bernstein concludes his claims are sufficient to prove jurisdiction exists. “Real constitutional issues are at stake; [Bernstein’s] communication, not his conduct was restrained. ... The appropriate test for judging the prior restraint of [Bernstein’s] speech here is laid out in the Pentagon Papers case: whether publication of the items ‘will surely result in direct, immediate and irreparable damage to our Nation or its people.’”

CyberLex November 1995

Notable legal developments reported in October 1995 include the following:

Stratton Oakmont Inc. agreed to drop its \$200 million libel suit against Prodigy Services Corp., in return for Prodigy saying it was sorry. Prodigy will pay nothing to Stratton Oakmont or its president, Daniel Porush, who contended they had been libeled in messages posted on Prodigy's "Money Talk" electronic bulletin board. Prodigy says it is sorry they were hurt, but does not say it was responsible. New York Times, 10/25/95, C1.

Packard Bell Electronics Inc. countersued Compaq Computer Corp. for unfair competition and defa-

mation. The lawsuit was begun over claims by Compaq that Packard Bell uses recycled parts in new computers, falsely advertising its machines as new. New York Times, 10/6/95, C3.

Apple Computer, Inc. agreed to pay the legal fees of Microsoft Corp. and Hewlett-Packard Co. in settlement of claims over Apple's ill-fated suit against the companies. The settlement is believed to have cost Apple millions of dollars. The San Francisco Recorder, 10/12/95, p.1.

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MacWoman

Go for It, Ladies!

“The Woods Would Be Very Silent If No Birds Sang There Except Those Who Sang Best.” Audubon

by Rita M. Bowman

I grew up in an electronic engineering household. When I got out of college in the 1960s my introduction to computers was during my first job in a Palo Alto, CA company that made ground computers for military space flights. Printed circuit boards were new. I was hired to gather data from blueprints for a reliability engineer who calculated failure rates for the systems. I remember the excitement of the engineers when they got one of those big computers to say, “Hi.” Then I met a neighbor who was a programmer. Computers were coming into my life.

A few years later I went back to school to become a teacher (women rarely could get jobs other than secretary, nurse, or teacher in those days). During that year we teachers-to-be were encouraged to visit an elementary school in East Palo Alto to see an experiment in computer-aided learning. There were large computer-equipped vans where students did lessons in phonics and math; the students were enthusiastic. They were learning better with this method than with traditional classroom methods. However, computers were not in my life while teaching elementary school or raising my two children during their early years.

Nine years later, my son Grant—then eight years old—was introduced to computers in school and took to them right away. He was discouraged, though, because he couldn’t go into how they worked or how the programs were made. Two years later we bought our first computer, an Apple II+. Grant dove into learning BASIC and other concepts. Soon, he knew more than the teachers. When he was at school I powered up the computer and went through the books

we had so I would know what he was talking about!

If at First You Don’t Succeed, Call It Version 1.0

Two years later it was imperative that I go back to work. Everyone I talked to asked if I could use a computer. Not feeling competent in their use in the work place, I went to a computer learning center in Walnut Creek to learn the concepts of basic business programs—word processing, databases, and spreadsheets. Since then I’ve worked on all the Apple computers, PCs, and mainframes.

I worked in the MIS department of a company that was very sophisticated for the times; I worked for the vice president. I felt right at home. I worked on the mainframe and a variety of DOS-based PCs. Wanting to learn more, I asked the computer experts about learning DOS and COBAL. It wasn’t very encouraging because I didn’t have a PC at home and had no time to learn at work. Later I did get a used IBM AT from a consultant who was upgrading. I learned DOS and programs I didn’t use at work. Grant, however, devoured DOS and learned some programming languages and went on to learn about hardware. He helped me a lot, not only when I got stuck, but to dispel misinformation I had acquired in the work place. He also pointed me to good information sources (hard to come by back then). We attended computer shows in San Francisco so he could earn extra credits in high school math classes.

The Macintosh really came into my life after Grant had been away at college and had become a Macintosh convert.

I remember the excitement of the engineers when they got one of those big computers to say, “Hi.”

He had done all kinds of tech support for his university and had mastered the Macintosh and networking. Also, he had enough engineering courses so he could help me tie my engineering-by-osmosis background and computers together. I was strongly encouraged to learn the Macintosh. This was the best thing in computing I’d ever experienced! We have attended the Macintosh Expo with friends for four years.

At first I didn’t understand much of what was being said technically, but I had learned to use the Macintosh and worked (on a Mac) in another IS group in a large corporation while becoming a Hardware/Software Asset Manager. But, I wanted to know more!

Grant had directed me to MacUser from the start, and the computer catalogs that were piling up on the table. At first it seemed like Greek. I continued to read and get Macintosh books and ask questions. I joined BMUG and attended

meetings when I could. More things began to make sense. My knowledge and understanding accelerated by working in the IS group and tracking all computer equipment and software that entered the company. When I couldn't get answers about components, doodads, and thingamajigs that were coming in, I'd pull out the books and catalogs and read, or ask people outside of work.

**"The Important Thing Is to Not Stop Questioning."
—Albert Einstein**

Then came networks beyond email. As the company network was nearing completion, it was time to use it for software compliance and asset management purposes. Already understanding networks helped, but I saw other components on the network map and wanted to know what they were—not much help from the network person. Again, Grant recommended a great book.

Computing has opened a whole new world to me. Most of what I've learned beyond word processing and data entry has been on my own, with the guidance of Grant, a few great techs, books and magazines, Macintosh Expos, and BMUG meetings. Women who are at higher levels of computing and understanding than word processing or data entry invariably have a male in their lives to help guide them, unless they've managed to get a degree in computer science. It is nice for both to have someone to talk with about computing. Many technicals feel very

People who really know what they are talking about, in any field, are usually happy to share information.

lonely for lack of people to talk to about computing. I would not have an Internet account to communicate via email or to surf the Net—visiting Web pages around the world—if it weren't for my son Grant. I wouldn't be impatient about learning HTML so I can do Web pages, if he weren't the manager of Sholink in Mountain View, CA.

Typically, tech support tries to keep computing and/or their short-comings a mystery. Some give misinformation, or none at all. This is particularly prevalent in the PC world. Often it is because some just don't know. In the meantime, users come to think that computing is too hard or they just aren't smart enough to learn more than simple use, or that they are to blame for everything that goes wrong with the computer they use; their minds block. I really wanted to shake techs whom I saw approach users with a problem asking "What did *you* do?" instead of "What is the problem?" or "What is the computer doing, or not doing?" The Macintosh world is breaking down some of these barriers with the attitude of sharing information. People who really know what they are talking about, in any field, are usually happy to share information.

**"No One Really Knows a Bird Until He Has Seen It in Flight."
—Henry Beston**

Women's lives have many dimensions that take time, focus, and concentration from things we are capable of learning. It is very difficult when there are children involved. We must also guard against cultural attitudes that shake confidence in our abilities and capacities. Fear of the unknown and images of not being able to attain are the biggest blocks. Know that you can.

**"You Must Do The Thing You Think You Cannot Do."
—Eleanor Roosevelt**

Most women are timid about asking questions concerning computers. Too many women have asked me about computers or applications saying, "I know I'm not very smart about computers..." It turns out that they had been talking to an unthinking technical trying to boost his/her own ego. These types

try to play genius to everyone, so just ignore them. Remember, you are just as intelligent as most technicals, and there is no such thing as a dumb question. No one was born knowing about computers, or anything else. Step by step, little by little, it will come.

**"Be Not Afraid of Growing Slowly, Be Afraid Only of Standing Still."
—Chinese Proverb**

Women do have difficulty affording computers and software since they are paid much less than men. Many women are single parents barely making ends meet. Computing is doing and using what you've learned. I bravely stuck out my plastic to get computers and software. By doing so, you also help your children get a few steps ahead; they will definitely pass you up and teach you! Some companies will sell older computers to employees, and employees sometimes have computers to sell. People in BMUG have computers they would like to sell so they can upgrade to the latest and greatest. You don't need the latest and greatest to learn the basics.

Unlike ten years ago, there are very good books on computers and software written in real, down-to-earth English. Now they abound on every topic. Befriending a technical at work, joining a users group such as BMUG, watching CNet Central and other computer shows on TV, having a friend or family member to help—learning outside the work place is key. What is so ironic is that the first programmers were women.

"And the day came when the risk to remain tight in a bud was more painful than the risk it took to blossom."
—Anais Nin 𠄎

Rita M. Bowman, CSM is a specialist in Computer and Software Asset Management. She can be reached at Rita_Bowman@bmug.org or at advotech@ccnet.com. For more information on Computer and Software Asset Management and links to related topics, and other fun stuff, see the AdvoTech Web Page at <http://www.advotech.com>.

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How Apple, Modems, and BMUG Changed My Life

Roz Ault, Co-administrator, BMUG Boston BBS

Sometime around 1979, what may have been Apple's first major magazine ad appeared in *Scientific American*. It showed a young man sitting at the kitchen table absorbed in his brand new Apple II, while his wife—her hands in dishwater—looked on with affectionate bemusement. A few months later my husband brought our first Apple through the kitchen door—and that scene might have been played out in our kitchen, too.

At the time I was an elementary school librarian, and my job description incorporated the role of “media specialist.” But I never cared much about that part of it and mostly foisted off the duties that involved interacting with the A-V machines (like filmstrip or movie projectors) onto the sixth-graders, while I spent my time with books. So getting involved with this strange new gadget called a personal computer was about the far-

thest thing from my mind, and certainly wasn't part of my life plan.

What actually got me started was my son Mike (then 12 years old). Mike was immediately enthralled with the Apple II, especially with Scott Adams' adventure games. He started teaching himself BASIC so he could learn how to program his own games. Mike (now 28) didn't go on to become a programmer, but the skills and confidence he acquired from this machine, I think, really changed the course of his life, as well as mine.

When I saw what a fantastic educational tool the computer was, I started looking for ways that I could bring this kind of experience into the lives of the kids I was teaching. One thing led to another, and a couple of years later, the fruits of this experience resulted in a children's computing book, *BASIC Programming for Kids*, published by Houghton Mifflin.

Computing Trivia Tidbit: The book, *BASIC Programming for Kids*, covered the six main brands of home computers in the early 80s. How many can you name?

Very early in our family computing life, we joined the Boston Computer Society—in fact, we were among the first members to sign up. But I never did anything with the membership, or really got interested in users groups at all until we acquired our first Mac and a modem. Not too long after Apple figured out they might sell more computers by letting a woman throw a ham-

mer around than by keeping her in the kitchen, I had an experience that was similarly mind-shattering. I logged on to my first electronic bulletin board, and discovered this amazing world of people helping each other via their computers.

Again, one thing led to another, and a few years later I had acquired a new job where I got paid to use a Mac in order to write instructions that would help people use computers that were a lot harder than Macs. And I also ended up in a new role (not for pay) helping to run the BCS•Mac BBS (along with Tom McGee, Cathy Rudolph, Becki Sherman, and Gretchen Macdowall). The BCS management at that time (at least the ones who controlled the purse strings) really didn't understand online services, and in 1992 the entire executive sysop team resigned from the BCS•Mac BBS because of differences over management styles and priorities.

Fortunately, we already had a good working relationship with BMUG (through Steve Costa), and Steve invited us to set up a BMUG BBS in Boston. We didn't have a Boston office to house the system, but I did have a spare bedroom, since that 12-year-old, who got me started with computers, had now grown up and moved out on his own. That's how the BMUG Boston BBS came to take up residence in my empty nest.

After about two years, we had to push the BBS out of our nest, since we were moving to a condo which couldn't accommodate 13 phone lines and accompanying paraphernalia. Tom McGee adopted the board for a while, but his nest was far from empty—and the BBS just took up too much time and

Apple figured out they might sell more computers by letting a woman throw a hammer around than by keeping her in the kitchen

space for someone with four little birds of his own!

So in October of 1995 BMUG Boston packed up and moved once more. The bulletin board now resides at The Internet Access Company in Bedford, where it has its own address on the Internet. Its foster parents all have visiting rights though, so we stop by to say hello from time to time, and give it the occasional motherly (or fatherly) love-pat when it starts acting up and demanding attention. (Sometimes it gets obnoxious enough that I think the love tap ought to be administered with that Apple hammer. But, so far, we've manage to coax it into shape with less drastic maneuvers.)

In many ways, computers and modems have changed my life over the years as dramatically as Apple has changed its advertising. My kids now affectionately refer to their mother as the family nerd, and as I type this sentence at my Power Mac, my husband (even though he still puts in plenty of computer time) is the one in the kitchen doing the dishes.

The most far-reaching effect for me, though, has come through the community of connections that this new technology has enabled, and that the BMUG spirit has helped to foster. The people that BMUG helps me meet and stay in touch with are the reason I stay involved with BMUG.

This quote sums it up for me (and I highly recommend the book it came from; it's an exceptionally thoughtful look at the human side of computing):

“Enliven the word! Work at enlivening the word! If you cannot do so, you will lose yourself... Wherever there is a word, there is a little frozen piece of the interior of a human being. It can, through painfully difficult effort, be thawed and enlivened. It can bring the other person alive for us... The online community is important because, given its inevitably deepening hold on society, everything rides on our learning to master it—to make

Computers and modems have changed my life over the years as dramatically as Apple has changed its advertising.

it as fully human a community as possible.” 天

Stephen L. Talbott, *The Future Does Not Compute: Transcending the Machine in our Midst*. O'Reilly & Associates, 1995.

Muliebral Montage

Experiences in Computers

From Talker to Typer

The Computer and the Degendering of Office Work

by Susan Kuchiniskas

In the pre-computer business world, it was feminine to type, so companies employed a legion of women as secretaries—one, two or even three for every man. Men dictated, and women transcribed—a time-consuming and inefficient process.

Although typing was feminine, computers were masculine. High school science geeks, marginalized anyway by their lack of interest in sports, had to type to talk to their computers. As home computers became widely available, typing came to be seen not as task in itself but as an essential for computer use. A generation of men began to touch-type.

As the desktop computer became a status symbol, and then a necessity for office workers, negative associations to typing disappeared. The execs learned to type their own memos, freeing their usually-female assistants to do more substantive work—and to get promotions.

Now, the duo of computers and telecommunications may soon un-moor us from our desks completely, while feminizing the workplace. New work styles, being promoted to increase productivity and efficiency while reducing overhead and real estate costs, also encourage us to work in new ways. Strategies like the “team suite,” “amoeboid” configuration and “hot desking” promote fluid, non-

hierarchical, collaborative interactions—work styles which were formerly considered feminine.

The combination of personal computers and advanced telecommunications feeds a continuing trend toward businesses shopping out work, with free-lancers and consultants replacing permanent staff. By the turn of the century fuzzy slipper executives, working from home offices, may account for as much as 30 percent of workers.

Already, consultants can do business with clients without face-to-face or even voice-to-voice interactions. As telecommunication becomes the medium of choice for business, consultants will be free to change their personae, including their genders, at will—as many now do when socializing online.

A writer working for an engineering firm might use her page layout program to design stationery with a bold, angular logo, and change her first name from Sandra to Sam. Her email tag might be a quote from a sports or military figure. For an aroma therapy client, she might become Zandra, who uses stationery with a flowery script, and invokes Gaia as her sign-off.

While this may seem meretricious, the result will be greater equality in the marketplace. Instead of being hired in part on the basis of our personal attributes, we will be able to compete on how well we can select and present, from our myriad attributes, those which best suit the client—including gender.

Susan Kuchiniskas covers online communications, personal computing, design and health for publications including the *LA Times*, *Worth*, *Wired* and *NewMedia*. Feel free to call her Sam. ☚

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My Mac and Me

by Deborah Pulliam,
BMUG Boston

I began using computers as a newspaper reporter, starting with word processors and gradually moving into using spreadsheets and databases.

When I moved to a new newspaper—produced entirely on a Macintosh—I switched for good. I will never go back (willingly at least) to DOS! Macs suit me perfectly for the desktop publishing I now do, for freelance writing, for graphic work in connection with DTP, and for all other Mac-useful things.

I've always loved the fact that, yes, this is the Mac, and it is fun. Sometimes it's easy to get sucked into having applications you don't need or want, or finding new things to do on the computer. I've always been careful to make sure my Mac is making work easy for me, and saving me time—rather than finding more things it can do and more ways to keep me working at the computer when I'd rather be doing other things. I've encouraged a lot of timid computer users and first-time buyers to get a Mac for just that reason, and sometimes I succeed. And I love it when they call to say they're having fun, and they love their Macs.

What's really important is that having my Mac and doing DTP has allowed me to live in a small, relatively isolated community where I can work at home rather than commute. That, in turn, allows me to live the way I want to live, not the way someone else thinks I should. If that's not empowerment, I don't know what is! ☚

Online Connections

by Jayne Cravens

For me, using online technologies has not been about connecting machines—it's been about connecting people. In addition to establishing relationships with dozens of other professionals in my areas of interest, I've also come across a wealth of information that I use in my jobs every day. It's cut down on my subscription, book-buying and travel expenses—so much of the information I need (grant announcements, reviews of software, names and addresses) are online. What I love the most is that so much of the information is free...if you know where to look. Because so many people were so gracious in helping me find and use on-line resources, I try to do the same whenever possible. ☞

Sticky Business

by Jana Bouc

I spent Friday night cleaning root beer out of my new Power Mac keyboard. I was typing an email message to my friend Catherine when I noticed the "S" key felt mushy. When I looked closely I could see the key sticking to a solidified puddle of brown syrup. There was more caramel-colored syrup on the bottom of the keyboard, the front of the computer, and on the desk. Sitting beside the computer was an empty can of root beer and the CD that came with the new computer. My 14-year-old son had discovered a stupid demo game on the CD two nights before. I'd seen him playing the game, pounding on the keyboard to shoot at grotesque, tongue-shaped, red monsters that squealed and dissolved into disgusting blood splats on the ground when hit.

Snarling mentally at my absent offspring, I tried to clean the mess with cot-

ton swabs dipped in alcohol. But the space between the keys was so tight the cotton kept pulling off the cheap generic blue plastic swabs, getting stuck under the keys. I tried using the remaining naked plastic stick to push the cotton shreds out, but the stick got stuck, too. I grabbed my tweezers, which get used for everything but pulling out eyebrow hair, and managed to extricate the plastic swab and some of the cotton fuzz. Frustrated, I consulted the computer manual. It said: "For sticky spills, turn off the machine and take the keyboard to an authorized repair shop."

Before admitting defeat and taking it back to the dealer, I stopped in at Al Lasher's, a local electronics store. While they were fixing the telephone that my son had broken earlier that week, I asked for their advice on cleaning the keyboard. They sold me some spray-on contact cleaner that would "easily do the job."

That night I tried to take the keyboard apart, thinking that would make it easier to clean. The miniature Phillips screws were so small I had to use my tiny eyeglass screwdriver. I finally got it apart only to discover that the root beer was no more accessible than before. I carried the keyboard out to the garage and inserted the little straw that was taped to the side of the can into the spray nozzle.

As I began squirting the cleaner into the keyboard, the little straw fell off and lodged itself under the keys. Again the tweezers came to the rescue. I gave up on the straw and sprayed directly from the can.

The directions said to use sparingly, but I couldn't figure out how to do that since it came gushing out in streams, with or without the straw. The cleaner was supposed to dissolve the root beer and dry in ten minutes, with no wiping necessary. The syrup was dissolving all right, but it was floating around and making little brown waves. I started wiping up the soup with folded pieces of paper towel. After about half an hour of swabbing the melted goo, the keyboard looked reasonably clean.

I brought it back in the house to dry. The keyboard, my hands, and my clothes all stank from solvent. I realized it was still dripping wet so I grabbed some toilet paper and started wiping again. Root beer colored liquid was still soaking into the toilet paper so I kept wiping.

I began to worry that I'd used too much spray which would somehow cause a short and blow up the computer. I waited another hour to be sure it was dry, and then I plugged in the keyboard. I turned on the computer, and nothing blew up. Everything worked fine, except for the "S" key, which was sticking.

The next day I sheepishly returned to my favorite computer dealer, Whole Earth Access, in Berkeley, and learned that sticky spills spell death to keyboards. Whether it's coffee with cream and sugar, Coke, or lemonade, if it's wet and it's sugary, the keyboard is unlikely to survive. From now on, the kid drinks diet soda! ☞

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Technobabble

by Jennie Van Heuit

The role the internet plays in my life is simple yet profound. I have a dog, a black labrador retriever, who is very important to my life, today and every day. I learned just about *everything* on how to train and raise her on the internet: the rec.pets.dogs.* newsgroups, and the labrador-l mailing list. The amount of information "given away free," to paraphrase BMUG's motto, is astounding and wonderful. People (including me, now that I know some things!) are so willing to give advice, even with grains of salt, for free and with no misgivings or anything. The most prominent people on both the dog newsgroups and the mailing list are *women*. Fab-u-lous. It's so nice to see women take charge, be polite yet firm, and basically run the show. And this topic has *no* technical content!

As for the technical side, I'm on some computer-oriented mailing lists (women-online-news, mac-women); the same generosity of information is present there also, but with that added bonus of By-Women-For-Women. That means minimal technobabble and maximum clarity and respect.

Unfortunately, I haven't seen a similar amount of clarity and respect occur between men and women in a technical newsgroup. As women acquire skills (gotta be twice as good to get half the respect, right?), this should improve. I'm on my way. ☞

Email Ingénue

by Lisa Covi

In our increasingly mobile society, I find that electronic mail is a good way for keeping in touch which my friends all over the U.S. and abroad. Just last week, I learned that my college pal in Washington, D.C. may be pregnant with twins, my friend's mother in Pennsylvania has been diagnosed with only three weeks to live due to cancer, and two friends of mine in San Diego shared some details of their recent engagement. I don't know if it's my life or theirs, but I find I don't call people much anymore. Many of my friends live in the eastern time zone which makes it expensive if I call during the week. I also think that email makes it easier for some people to share things that they would feel uncomfortable picking up the phone to announce. The speed with which I can exchange electronic mail, especially with my friends who are logged in all day at work, approximates a real conversation.

I guess email was the technology that got me hooked on computer networks. I first got network access when I was in college studying computer science. Since then, I don't write computer programs anymore, but I'm the kind of person who takes special pride in knowing how something works. The secret seems simple to me: I take the time to read the instructions. After a while, even if the instructions are hard to understand, I can kind of intuit my way around computer programs. I think that just comes with (positive) experiences. I also get bored easily, so the eternal new releases of new programs and new interfaces don't overwhelm me like they used to. I guess I don't get overly excited and I definitely don't buy the newest thing coming down the pike, but looking at the new hardware and software (and most of the time finding out how much they resemble the old hardware and software) keeps me interested.

I think people sometimes have too high expectations of computing technologies. I doubt there's ever been a decent size program that hasn't had a bug in it and people make errors all the time. I

think people get frustrated with computers because they think it is supposed to save them time when it actually creates more work for people in new and different ways. There are many advantages to computing technology, but I think it's dangerous to ignore and not talk about the drawbacks.

Right now, I'm working on my Ph.D. in Information and Computer Science, but I'm in an unusual program called Computers, Organizations, Policy and Society here in Southern California at the University of California, Irvine. Our program's emphasis on social aspects of computing attracts the largest proportion of women in our department and I really enjoy this environment as a place to learn and work. I've never lived in the Bay Area (at least not yet), but I imagine that there are places, if you look for them, where women like yourself meet and work with computer technologies that match your interests. I'm not convinced that computer science is becoming more populated with women, but I hope that one day any woman who is interested can pursue her curiosity by studying technology in a place where she is not considered unusual and in a place that is familiar with and responsive to women's concerns. ☞

From Mainframes to Macs

by Laura Rinaldi

It may seem odd to people born in the '70s but my first computer was a mainframe that was kept downtown at the main headquarters of the school system. There was only one computer for all the kids in the L.A. schools, and the way we accessed it was to write Basic on punch cards and send it downtown. Days later, we would receive the results on computer paper. It was a thrilling moment. This was in junior high.

Later in high school, we had one dumb terminal for the whole school. We could type in programs and have them run back to us moments later. We end-

ed up discovering where the games were and playing Star Trek with it.

It wasn't until I was in college that I discovered what having a computer with a monitor and software was like, but once I did, there was nothing I wanted more than to have one. Fortunately, the year I graduated, the Mac came out, and I have had various models of Macs ever since. I got my first job because I knew how to work with a Mac, and I have the job I have now, because of that too. ☞

Gender Bender

by Naomi Pearce

I've always had a little tomboy in me, and I've always busted those statistics that say men think more analytically than women by scoring better than 99 percent of the men. So there. At the same time, I've always loved cooking and sewing and all those domestically discounted brain benders. So, I guess it's no wonder that I was drawn to studying programming languages as a minor in university. But what really got me *into* using computers involved "fun." I wanted to party with the other thinking DeadHeads. Y'know, the one's with computers. I wanted to hang out, travel, debate shows, drink fancy beer, see and be seen with the DeadHeads whose idea of camping was a Winnebago. So I logged on and joined their community.

But it didn't stop there. Once I was online, it felt like the door to the whole world had been opened to me. There were so many cool, smart people online that engaging discourse is *de rigueur*, the type of conversation you just don't get to have every day. Over time, real emotional bonds were created between myself and these other humans on the system. Now, years later, I've found roommates, recipes, food for thought, and friends, all online. My community extends beyond the bounds of local geography, time, and space. I've found a home that I can take with me anywhere, and be part of any time. And I still do occasionally party with other "thinking DeadHeads." ☞

Riding the Wake of the High Tech Mainstream

by Beverly Blatt

I am a woman who has followed the computer revolution like a gleaner in the fields, picking up morsels in the wake of the mainstream. As an academic medical scientist in the 1970s and 1980s, I watched laboratory equipment evolve from manual to microprocessor control, so I have never been computer-phobic. Because I had secretarial support at work, I still did most of my writing long hand.

I bought my first Mac in 1984, a 128k and a printer, primarily for my kids' use in school work. The home computer was great for the kids who were able to expand their writing skills with it. My then 13-year-old took to it like a duck to water and enjoyed playing with it. By changing font and margin sizes, he felt so powerful in being able to make whatever-length piece he wrote, fit the assignment! My 9-year-old son, for whom writing was a tedious chore, was liberated by the ability to make corrections without having to do it all over. The computer gave him the ability to pace his work in a way comfortable for him. For example, a large book report became manageable because he could deal with questions out of sequence. He could do the easy parts first and the harder ones later—or add new thoughts by moving the cursor and clicking. I began to write drafts of my work on it, but they had to be retyped on the PC-based systems at work before being incorporated into grant applications or manuscripts for submission.

In 1988, I moved to California, leaving the 128k with the kids. I needed a computer to set up a consulting business. I knew I would basically be using it as a word processor. After much reading and thinking—plus visits to computer stores—I bought a Plus with an external 20-meg hard drive

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and a dot matrix printer. At Whole Earth, my husband listened to the salesman's pitch about the SE and its expansion slots and suggested I go for it because I might need the expanded capacity in a year or two. Wisely, I decided that I shouldn't spend \$1000 more for things I didn't currently need (more on that later).

I joined BMUG after reading a *MacWorld* review of the Newsletter. It was a great idea. I learned much from the articles and depended on the Helpline to get me out of glitches. Distinguishing hardware from software problems was not intuitive for me in those early days. Through BMUG member disks, I discovered computer games.

My older son started college and bought an SE. He was able to work on my computer on vacation, just bringing home diskettes. My husband and I bought a Plus and printer for his kids, who were then able to do their homework when they were with us on weekends. I became their technical resource.

My reading of the BMUG Newsletters over the next few years made me painfully aware of how fast the technology was moving. It wasn't long before none of the articles were relevant to my hardware and system. I thought about upgrading but soon realized as prices fell that it was cheaper to buy a new one. In September, 1993 I took the plunge again *under* buying a Performa 405 with a StyleWriter printer. This system cost \$1000 less than the Plus, external drive and dot matrix printer package had cost in 1984, and included a modem and gobs of software. I donated the Plus and printer to a needy non-profit and gave the hard drive to my step-kids. My friend Bobbie was computer shopping about the same time. She waited a few more

***My knowledge of
Macintosh helped
me learn what I
needed to do on
the PC.***

months and got ever so much more for the same amount of money.

By then my sons were both at universities with email accounts, so I knew I had to get connected. The Fall 1993 Newsletter had a great article by Bernard Aoba which explained to me how to get online at BMUG. I was able to download a new screen saver from the file library to work with system 7. I could touch base with my kids more efficiently, and now I reach a lot of people by email with whom I had lost touch by phone or letter.

Meanwhile Bobbie had joined BMUG at my suggestion. Together we started to take advantage of what BMUG offered. We began to explore the Planet and found the Woman to Woman conference. We attended the MacFest at UC Berkeley and sat in on the women's group session. We finally attended a Women's group meeting about setting up a Web page. Thus initiated, we decided to go to the Women's group dinner and get to know people better. We had a great time and felt encouraged to start contributing online.

Over the last 5 years, I have been in work or volunteer situations where I had to use a PC. My knowledge of Macintosh helped me learn what I needed to do on the PC. I was able to understand what the demands were meant to accomplish and master them. I will never get used to having to name a file with so few letters! I have learned to handle spreadsheets and databases on a PC and have brought that experience to my Mac software. I'm now able to share data and files with people who have PC formats.

I feel my computer literacy stays at about the 4th grade level; I judge that by comparison to a 7th grader I know. I am functional but barely scratch the surface of what is possible. I'm happy with the knowledge that I can learn what I actually need to use. I think computers are wonderful instruments, capable of expanding an individual's ability to interface and interact with a wide wonderful world of knowledge, art, and opinion. I know I will continue to grow at my own rate. It will be progress for me even if it's far from the leading edge. ☞

***I will never get used
to having to name a
file with so few
letters!***

An Apple by Any Other Name

by Claudette Vidulich

Beds made, laundry started, dishes done. Time for a cup of tea and the Saturday newspaper.

“Mom, can I have an Apple?” (Seems an innocent, even healthy request, doesn’t it?)

“Hmm. Sure, sweetheart, they’re in the left crisper at the bottom of the fridge.”

“No, Mom! I mean a Macintosh.”

“They’re not in season yet, honey. You’ll just have to make do with the Red Delicious I bought.”

“Mom, would you stop reading the stupid paper and listen to me? I want a Macintosh *computer*. I really need one. Everyone else in my class has one at home.”

Johnny would make a great military tactician. His mastery of the element of surprise often leaves him the victor in parental skirmishes. In this instance his mastery leaves me mopping up choked and sputtered tea while endeavoring to explain the facts of life.

Fact #1

“Just because ‘everyone else’ supposedly has one doesn’t mean we have to have one. How do you know they *really* have one anyway? Have you actually seen computers in their homes? Why couldn’t you just say you had one? No one would know the difference.”

It’s easy to avoid looking him in the eyes when he rolls them heavenward.

“Mom, I can use it to do my homework, and look up things for my reports and stuff. Mom, even a first-grader would figure out if I just *said* I had one ‘cause my work would be in cursive. Besides, you say it’s wrong to lie.”

“Mom, it’s different now than in the olden days. People drive cars and go to the moon and stuff now. They have encyclopedias and dictionaries in the computer. I can do better stuff for school with a computer. Please?”

Fact #2

“You should practice your penmanship, anyway. Good handwriting is important. And it’s not really a *lie*, just sort of wishful thinking. We’ll get one someday, but with the extra expense of your braces, we can’t afford a computer right now.”

I try to ignore the audible and extremely exasperated sigh.

“Mom, don’t you and dad want me to go to college? How can I do that if I get behind everyone else because we don’t have a computer?”

Fact #3

“Son, you’re only in the third grade. I don’t think your college career is in jeopardy yet. Besides, your father and I made it through school without personal computers, and we did just fine.”

I pretend I don’t hear the condescension in his tone.

“Mom, it’s different now than in the olden days. People drive cars and go to the moon and stuff now. They have encyclopedias and dictionaries in the computer. I can do better stuff for school with a computer. Please?”

A wise parent knows to retreat in the face of ultimate defeat.

Fact #4

“Well, it’s okay with me if it’s okay with your Dad.” Maybe Johnny could succeed as a technology lobbyist where I had failed these many months. Thus armed with half-approval, my steely-eyed son bravely marched into the fiscal lion’s den to do battle with “The Dad.”

After much research and confusion, Beastie Boy (our Performa 575) came to reside on the dining room table where he made dining awkward. We eventually turned the living room into a computer outpost. Now Beastie is only in the way at Christmas time, when his presence necessitates a slightly scaled-down tree. We’ve discovered that a string of twinkling lights and some artfully placed tinsel gets him into the holiday spirit. He cheerfully joins in the festivities, playing

carols through his CD audio player as we sing along.

It's embarrassing to find your children more competent than you in things technological. Two years of computer lab in school gave my son a decided advantage. My daughter's total lack of preconceived ideas about machines coupled with her own hands-on experimentation proved to be the winning combination for her. I found their confidence and skill, and my lack thereof, unsettling enough to keep me awake many nights devouring such literature as *Macs For Dummies* and *Easy Macintosh*.

Beastie Boy and the Family

My poor brother shared my angst with each and every panicked 2 am phone call. "I've killed it! It's frozen and nothing works! It didn't want to do what I told it, then it seized-up to get even with me! What'll the kids say when they find out I broke it?"

His words of wisdom ("For God's sake, it's only a machine. It can only do what you tell it. It's only as smart or stupid as you. What was the last thing you entered?") and his patience ("It's 2 am! Couldn't it have waited until morning? All right! Stop crying, and tell me what you did last.") guided me through the agonizing initiation of system crashes, freezes, and un-named glitches.

My husband refused to deal with our personal piece of the Technological Rev-

*Is there such a thing
as "enough RAM?"*

olution. His philosophy was simple: there are countless specialized tools available in this world but unless he needs them in his work, why bother? Ask him about the Internet, and he'll tell you that unless he can drive his truck down the information superhighway, he has no desire for a "road map."

Since going online, however, Mr. Fiscal Lion has discovered it's easier to pull up his investment portfolio with a single entry than to pore over the teeny, tiny print of the Wall Street Journal individual investments separately. That the information is more current is an added bonus. He may yet come over to the technophile camp. There's always hope!

The computer is firmly entrenched in our lives now, and I find myself dealing with attendant issues. Is there such a thing as "enough RAM?" How much is that? Can a Performa 575 be upgraded to a Power Mac (like the salesman claimed)? Apparently, the answer to that question is *no!* Was the salesman unscrupulous? I don't know, he was the same swell guy who encouraged us to take a 160-meg hard drive because the 250's were on backorder. "You don't need much more than that anyway," said he!

Beastie Boy Grows Up

Having spent my computer infancy with Beastie, I feel disloyal at the thought of replacing him, but I find myself starved for physical RAM. And gigabytes of storage are enticing after trying to live with a 30-meg System Folder, a 32-meg folder of assorted applications, and 56 megs of child-oriented storables in a 160-meg environment.

Could our system be managed better? Of course! But none of us seems able to part with a single "favorite" program.

*The more I learn to
do, the more I want
to do—faster.*

Bells and whistles also eat space but make Beastie more personable and fun. And I must confess, I'm a font junkie.

Solving our little 160-meg problem by raising storage to the next higher power is on my learning curve. The more I learn to do, the more I want to do—faster. Sound familiar, anyone?

Just the other day, with the beds made, laundry started and dishes done, I was sipping a mug of Earl Grey while pounding away on poor Beastie.

"Mom, are you gonna be done anytime soon?"

"Hmm? Oh, uh, soon, son. I just have to finish this sign-up sheet for the Silent Auction Committee and the update on your School Directory."

Somewhat distracted, I fail to notice the pregnant pause.

"Mom, can I have a Macintosh?"

"Hmm. Sure sweetie, they're in season. I bought a dozen and put them in the left crisper at the bottom of the fridge."

"No, mom! I mean my very own Macintosh."

"Honey, which ever one you pick will be your very own while you eat it."

"Mom, would you stop computing and listen to me? I need my own personal Macintosh *computer*, for my room..." ☹

My Year with Women in Computing

By Hoai-An Truong

In 1992, I joined two groups for women in computing, BAWiT, “bay-wit” — Bay Area Women in Telecommunications, and Bay Mac Women, a SIG (special interest group) of BMUG. The following is a collection of anecdotes from that first year (plus a few months) in these two groups.

Some of these tidbits may simply illustrate an aspect of women’s issues and experiences that are already known in one form or another — this time in the context of the computing industry. And some may be new insights, new ways of looking at things, and glimpses into the lives of a new generation of women, women who use computers and electronic mail.

Bay Mac Women

Two BMUG members, Patricia and Yana, started Bay Mac Women. “It’s the kind of group we’d like to be able to drop in on once in a while, said Patricia when I asked why she was organizing the first meeting. After the second or third meeting they both lost interest in running it, and went on to bigger and better things. I took it on, and ran the meetings once a month, for the next three years.

Computers & Social Issues

I am an unlikely candidate to run a computer SIG. I never really liked computer user group meetings, even though I’ve worked with computers for over 13 years, and worked at BMUG for a half a year in 1991. But when Patricia told me about her plans to get some women together to talk about computers, the idea caught my imagination. A group of women meeting to talk and learn from each

other about computers is also an opportunity to discuss gender issues in computing, in the workplace, and in the rest of the world.

Eventually, Bay Mac Women got an online conference on Planet BMUG BBS, one of the biggest and most successful FirstClass BBSes. Though our members often love talking about computers in person, talking about computers in our online forum never caught on. Instead, the Bay Mac Women online conference attracted men and women who wanted to talk about gender issues. It attracted those who wanted a place to talk about more serious social issues. While most of Planet BMUG’s online conferences discussed Macintosh-related topics, with a few recreational conferences (to talk about movies, books, food, and Star Trek), Bay Mac Women was one of the few conferences where more serious topics and social issues seemed at all appropriate. As such, it was one of the most widely read conferences for its first year or so, at least until the BBS added many new conferences. As to be expected, it attracted its share of controversy and flame-wars. By its very presence, Bay Mac Women inspires and reminds people to occasionally think and talk about when women aren’t included, or make an active effort to include women, or address gender issues.

It’s a nice start. There’s still a long way to go.

Women & Computer Talk

There are many benefits to having an all-women discussion on computers — for one thing, talk stays comfortably

in the layperson’s range. Women tend to have much more practice, ease and patience in explaining things to others, than men do in many typically male-dominated technical arenas. I and the other members think it’s more enjoyable to talk about computers without all the heavy-duty technical jargon. Women who would be turned off or intimidated by other user group meetings and SIGs feel much more comfortable in an all-women setting, and are more likely to participate and ask questions.

It does have its disadvantages though. It’s not the best place to get in-depth technical assistance or insight. I often suspect that the more technical women that are out there are less willing to fork over a couple of hours of their precious off-hours to more computer-related activities. And the women who do attend fairly regularly are far less likely to be your typical, technically savvy computer nerd (though I’m positive that’s how we sometimes appear — to outsiders). Women tend to learn and be interested only in what they need to use or need to know, and not much beyond that.

A stunningly characteristic example is what happened at the computer exhibits at the women’s conference in Beijing. Women from around the world mobbed the tent where the EcoNet/PeaceNet email and Internet demos and hands-on exhibits were available. Women activists can see the immediate power and uses of electronic communication. The more visually and technically impressive multimedia demo stations were virtually deserted.

Bay Mac Women I Have Known

Gretchen

When I first visited Gretchen's house, she had two Macintosh Pluses. She used to have three, but sold one. She bought three because they came as a set at an auction, and she needed one. Gretchen could never understand why other people complained about the poky-ness of their slow little Mac Pluses. One of hers has an 030 accelerator and an 040 math coprocessor. Gretchen ran some tests to find out the speed of her machine using Speedometer and other Mac utilities. When Gretchen saw the results, her eyes nearly fell out. Under certain conditions, it clocks at up to 52 MHz. (The clock speed of a Mac Plus is 8 MHz.) Adding that kind of acceleration to a Mac Plus is kind of like putting jet wings on a VW Bug. VVVVVOOM!

Gretchen also has a PowerBook 170 with an Envisio video adapter—MUY expensive! and very hi-tech — but no external monitor. (She bought it used too.)

I needed to make a call from Gretchen's house. More gadgets. Her phone doesn't look like a phone. It's a headset with a black cord attached to a large black numeric pad. Very chic. It might be a little hard to answer in a hurry though—especially if you have to unplug the phone cord from the back of the PowerBook, back into the phone, and then get the headset untangled and in place on your head, mouth piece in place. Ah, the joys of modern technology.

A while ago, Gretchen bought a hard drive with a lot of stuff on it. The guy who sold it to her was evidently very fond of sound utilities, and many other utilities whose functions to this day remain a deep and perplexing mystery. On the hard drive, Gretchen discovered a sound utility called Speech Tutor. With it, she could use a very crude voice synthesis to create any message she chose. That year, she used it to create the outgoing phone message on her answering machine.

I must admit, after knowing friendly Gretchen, getting that really bad, synthesized robot-like voice (and it only comes in "male") is highly disconcerting — but very funny.

One day Gretchen wasn't taking any calls. The phone rang. The answering

machine went on. The answering machine shut off because the caller hung up. The phone rang again. The answering machine went on, and the caller hung up again. The phone rang again—same thing happened. It turned out to be Gretchen's sister. Her sister hates that synthesized voice.

Gretchen brought the hard drive to a Bay Mac Women meeting. We tried to figure out some of the mystery utilities on the hard drive, and tried out Speech Tutor and other sound utilities. In Gretchen's inimitable style, our meeting was a "hoot".

Gretchen's getting into computer-assisted animation. I can't wait.

Dale

Dale came to a Bay Mac Women meeting. She was very timid about asking questions. For a long time I couldn't understand this—our group is probably about the most *un*-intimidating, friendly, vastly patient, *non*-techie SIG at BMUG.

Dale works in a virtually all-male, blue-collar environment. What this means is that Dale can't show herself to be ignorant. As a woman in the trades, if she shows the slightest bit of ignorance, she loses a great deal of credibility. For a woman in a blue-collar workplace, it is hard to win it back—or sometimes, at all. To get any credibility at all as a woman in the trades, not only does Dale have to pretend she knows more than she does, Dale has to be better than all the rest. So what did Dale do when she took up a hobby? Dale not only buys herself a first class computer set-up, but lots of other expensive, high-tech toys. As a woman, Dale must excel in order to be taken seriously. And she does.

As I got to know her, I was amazed. Turns out this woman hits the ground running. She purchased one of the original Apple computer kits—put it together herself. She bought stereo speakers for it, and had a voice synthesizer on it (I didn't know they even *had* that kind of stuff back then!), and all kinds of software. She's been playing with computers for years. When I first met her, Dale's home setup was pretty impressive for an amateur: a IICI with color monitor, LaserWriter printer, Apple scanner and high speed modem, well ahead of the pack.

She's forever downloading and playing with various cool public domain and software programs. Now of course, Dale has a PowerMac.

A few years ago, as a volunteer Dale undertook to learn Double Helix to create a database for a nonprofit. A computer consultant (male), volunteering with the organization recommended Double Helix over everything else, absolutely raving about how powerful it was. After struggling for weeks, pouring over manuals, and spending hours and hours on the project only to get one tiny part of the database working, she abandoned Double Helix, and the organization bought a copy of FileMaker. Within two hours, she had a working database up and running. FileMaker was able to do everything that they wanted it to.

Judith

Judith, a computer consultant, reports that many women encounter similar situations. Judith, one of the few women computer experts online, often gets emails and invitations to chat online from women seeking technical assistance on Planet BMUG BBS. Typically, they have already sought help elsewhere on the BBS, but gotten answers that were cryptic or too complex. Typically, even after they ask for an explanation of the answer, they still don't understand the explanation. They may even ask for a simpler breakdown of the explanation of the explanation, but may still not get an answer they can understand or use. Or, the solution given involves using complicated tools that they don't know where to get, or how to use, or that eat up time, effort and/or money far beyond what they need. The fancy solutions are not always the best. Computer consultants—mostly male—may not always see that.

But back to Dale. Dale, an active and inquisitive Mac user, has an account on America Online (AOL). She called herself by a cute female name online, hoping to identify herself to other women and correspond with them online. Instead, every time she logged on, she was constantly interrupted by guys trying to meet her, or worse. The first time Dale logged on, she was invited to a "private room" (AOL has electronic chat "rooms" which allow two or more people to "converse" together, to instantaneously send and receive messages to

more than one person at a time). Innocently she accepted his invitation, and within seconds he was virtually undressing her in e-mail, asking her what color her underpants were. . . . Since then she's gotten lots more of these email equivalent of wolf-whistles, obscene phone calls, or the more innocuous contacts from guys trying to meet women. This is typical of online communications where a woman has a recognizably female login name. The constant interruptions and the very nature of those intrusions often cause women to abandon online services in frustration and disgust. But Dale, a persistent soul, created a second account, a second persona—this time a male, complete with an online profile for this male persona available for the world to see, with male-identified hobbies and interests and profession. Since using that account, Dale's experiences with e-mail and online conversations have become quite different, simply friendly, and quite neutral.

BAWiT (Bay Area Women In Telecom)

BAWiT, was started by women who work in customer support in telecom (Internet service) and computer support. BAWiT is a very small group of women who either work at online services such as the WELL and EcoNet, or who work in computer support who are very interested in increasing awareness of women's issues in online communication, and in supporting outreach to women and girls to get them online.

For want of a nail . . .

At one of the BAWiT meetings, Hilarie, a BAWiT member and long-time community member and former staff of the WELL, told the group this story. BOARDWATCH, a magazine devoted to BBSes (electronic Bulletin Board Services) and telecommunications sponsors ONE BBSCON (Online Networking Exposition and BBS Convention). Stacy Horn, founder of ECHO BBS — one of the few gender-balanced online services anywhere — was invited to head a gender panel at BBSCON. Too late, she found out her airfare to the conference was not going to be paid. Stacy was unable to attend the conference, and the panel had to be folded.

Ironically, the same socio-economic factors which prevent many women from computer access, participating in positions of influence in the computer industry, and being able to afford time and money for activities like this conference also prevented Stacy Horn — one who could have shed some light on these issues and more — from attending. A tremendous opportunity to educate BBS owners, system operators and users was lost.

The Press Gets Its Facts Right Again

Attending a BAWiT meeting is always fascinating. Many of the BAWiT women work at or with well-known online services and often handle calls from the press. Often journalists are only interested in hearing about seamy tales of online sexual harassment or online pornography. Judi talked to one journalist for the New Age Journal. Judi had many short and one very long telephone conversation with the journalist. To Judi—official spokesperson for our group, this was no small feat considering the caliber and professional experience within the group—and the rest of the women of BAWiT, the issue of online harassment is only a very small part of the much bigger picture: access issues. Access to computers, access to computer education, access to electronic mail and the Internet, access to jobs that pay well enough to pay for computers and online services, and more. The journalist completely ignored everything Judi talked about. The journalist published a one-page article about online harassment. Then, ironically, towards the end of the article she referred people who wanted more information on online harassment — to BAWiT.

Other journalists are equally dismissive. Women are simply not considered credible as experts. Jillaine, then assistant director for IGC (the Institute for Global Communication), the organization which runs PeaceNet, EcoNet and other online networks for activists, talked to a reporter at length from the San Francisco Bay Guardian about online community activism. Then she referred the reporter to other sources. When the article came out, many of the ideas Jillaine had spent a lot of time introducing to

the reporter were attributed to another source, a male.

The Power to Compute

One woman related the story of a guy who bought a computer for his mother, who was terrified of computers. He showed her how to play a poker game on the Mac. The next time he talked to her, she had progressed to word processing. The next time they talked, she was already on America Online, and using email.

Now, apparently, she's an online activist of some sort.

Preparing the BAWiT Panel on Gender Issues in Online Communications

BAWiT sponsored a panel on gender issues in computing and online communications for CFP'93, the third annual Computers, Freedom and Privacy Conference.

BAWiT co-founder Judi Clark happened to be one of the organizers for CFP and suggested the panel to both groups. One of the board members for CFP responded that gender issues in online communications was not an appropriate topic. The topic didn't have anything to do with freedom, he said; it didn't have anything to do with privacy. The board member also believed that the online community was a genderless environment. And there are quite a few people on the net who share the same notion. Fortunately three or four other board members did not. We were able to put together a panel which was very well-attended. It was the most popular and well-received of all the panels, according to the conference questionnaire.

BAWiT members wrote a paper on gender issues in online communications and in computing as part of the proceedings for the panel and conference (available via ftp@cpsr.org, and published in the Spring '94 issue of the BMUG newsletter).

Since it was nearly impossible to meet most of the time, we collaborated on the first and second drafts of this paper via email. The third draft was done via 3-way phone conference.

While it's quite natural to those who rely on email regularly that it should hap-

pen that way, I had the thrilling feeling again and again we were on more than one frontier, and not just on the technical aspect of this collaboration. In writing an overview of women's issues on the net, we were easily among the first.

CFP'93 — BAWIT Anecdotes

BAWIT hosted a party, a warm-up scheduled the night before our panel at the Computers, Freedom and Privacy conference (CFP '93). It was open to all conference attendees.

The anecdotes that follow were told by professionals—generally in a calm and conversational manner. No one had to dig very deep to come up with examples of gender inequities. We have so far to go.

- A woman professor said that economic disparities should be dealt with first. She commented that women educators working 7 years were still earning less than their male colleagues who had worked for only 4 years. As part of her job, she sees many grant proposals, and notices disparity in pay everywhere. Many of these women will not risk rocking the boat as they are in junior positions. She claims they will not challenge senior staff on these salary inequities or they risk being blacklisted not only at their own institution but everywhere. Often, she thinks they are simply thankful to be there at all.
- One woman, with an MA from Stanford who upon graduating got a good job with great pay at a good company, Sun Micro. She didn't think there were any problems. She never encountered any problems until she went to work. At first, she felt no barriers at all. The engineer felt that her male peers treated her equally. She came to decide however that though she thought she was being treated equally, she really wasn't. At meetings, she is the only woman. She feels fear about speaking up. She feels that everything she says carries more weight because she IS the only woman and that if she says something wrong or stupid (like her male colleagues), they'll be far more likely to dismiss her. She makes sure she is right before

saying anything at all. Men can say stupid things in meetings or in brainstorming sessions but women are less forgiven for making stupid suggestions. Since she is one of the only women engineers at the company, she is also a role model, and consciously so. What she says and does takes on even more weight. The Sun engineer thinks that other women, particularly the younger ones or more recently hired ones, are looking at how she responds to particular situations and use that as a gauge for how much they can achieve or get away with.

- One of the organizers of conference — a woman who spends a lot of time organizing and talking about social issues in computing as part of CPSR, Computer Professionals for Social Responsibility — commented that in that type of situation, where she is the only woman present among a group of male computer professionals, she goes ahead and says what she wants even if she has no credibility, and keeps contributing throughout. By the end of the meeting, the men accept her and are willing to give her latitude. She added humorously, it's because they say "oh, it's because she's a woman."
- Other women engineers and computer scientists report having to fight the expectation that they make the coffee, run errands, etc. A group of visiting engineers were looking for a particular engineer's office. One of the men asked a woman working there to show them to his office. She refused. The male engineer got very angry and abusive and chewed her out. He demanded to see her supervisor. The supervisor turned out to be a woman. The supervisor lectured him in no uncertain terms that the woman was an engineer doing important work and not a secretary to show people around the office.
- In response to both the emotional and professional challenges of social stereotypes, there are various organizations to assist and support women and girls. For in-

stance, one organization mentioned that evening is "Expand Your Horizons", an annual one-day workshop of women computer professionals giving tutorials to high school girls in order to provide role models. This organization makes an effort to do outreach to invite lower income, multicultural students.

Notes from the Panel on "Gender issues in Computing and Telecommunications"

Chuck Huff

Panelist Chuck Huff conducted studies of gender issues in software interface design. In one study, three groups of software designers were asked to design educational software to teach high school students how to use commas. One group was asked to design software to appeal to boys. The second group was asked to design software for girls. The third was simply asked to design software for students. The software written for boys was radically different from the software written for girls. The software designed for boys was more like a video game, more of a shoot 'em up. The software written for girls consisted more of learning tools, and involved interaction and control. The software written for students, both girls and boys, came out very similar to the software designed for boys, i.e. more like a video game. The developers designed software for both sexes yet unconsciously made the software that appealed more to boys than to girls.

Note that seventy percent of the designers were women, many of whom were concerned about gender issues in computing. Many expressed their relief and appreciation that someone was doing research into this area.

Also, it appears that boys do worse with "girls" software, and vice versa, so that studies which seem to show that girls don't do as well at using computers may need to be reinvestigated.

Sarah Keisler

Prof. Sarah Keisler has studied computer professionals extensively. Since the theme of the conference was "computers, freedom and privacy," Prof. Keisler commented wryly that computer professionals have more freedom, privacy and

leisure than anyone at any time in history: the freedom to wear sandals to work, the freedom to come in late to work or the freedom to work at home, the freedom to read rec.pets.dogs at work (a usenet newsgroup or online conference), the freedom not to answer mail or return phone calls...

Other kinds of employees have very little freedom and privacy. They experience things like: supervisors eavesdropping on phone calls (to ensure service quality), riding public transportation, thin apartment walls, no fences to keep people out (less privacy), more waiting in line (freedom issue: less control over time). Most people are more prone to invasion of privacy, intrusion or interference.

Prof. Keisler and other panelists noted there is an absence of civilizing behavior on the Internet. When first joining an online conference, you don't know if you're dropping in on a "supermarket, bar, or fraternity." There is an absence of social cues. This has a releasing affect on behavior; people are more uninhibited, and there are studies that show this is the case. If a person is female, she gets more harassment, intrusion and interference than in any other forum.

Chuck, a sociology professor, studies and teaches social issues in computing courses. Half of his students are intimidated by the net. They get blown away by the vehemence of debates and personal attacks on the net. Their reactions cut across gender and racial lines.

Chuck Huff teaches at St. Olaf's, a religious institution. They recently adopted a sexual harassment policy, but neglected to include online harassment on the net. He recommends not only clear rules and sanctions, but also a willingness to support, educate and empower people to speak up. High tech harassment is increasing including: sexual sounds being sent to terminals, pornographic screen savers, images and videos. Cornell University is considering whether it is fair to regulate these freedom of speech issues. An important point Chuck made is that librarians across the country have been involved in censorship issues for years. We need an interdisciplinary approach, not policy decided only by computer or telecom professionals.

Anita Borg

Panelist Anita Borg started the SYSTEMS electronic mailing list, for women computer system administrators (hence, "sys-ters"). It has grown to include over 1,100 women from 75 companies and 150 academic communities across the country.

Anita has gotten a lot of flack for running a "separatist" group. Those on the systems (a women-only) list are often accused of withholding important information from the rest of the world. To this, Anita says the only restriction upon information from the list is simply to get the permission of person you wish to quote.

Men have criticized Anita for speaking out against harassment on Internet mailing lists, responding with the attitude that "if you can't stand the heat, get off the list." She also noted that another panelist at the conference had a similar response, "if you can't stand the heat, stay home and cook."

The women on the systems list are the most educated, the most motivated to get into computing, yet still experience many problems.

In some parts of the country, woman computer professionals are quite scarce. Time and time again, messages are posted by women who have recently joined saying things like "I'm the only woman computer professional in my company," or "I don't believe how many women are on the net," or "I thought I was just weird" or out of place to be working with computers. For many women on the list, it is their only chance to be among other women colleagues. It is a place to discover their own voices, a place to feel confident that one's voice is valid.

A great deal of mentoring and encouragement goes on. The list provides many role models to female computer science students, and plenty of encouragement for those wishing to continue higher education and advance their careers.

Anita commented that the idea of real diversity and wide-open access is in conflict with the frontier mentality. In other situations where diversity has increased, the white males tend to be very unhappy with the results.

About rights, Anita had this to say, "We don't have rights if we don't have access."

After the Panel, the Conference, the Awareness Week...

Several times, the chief organizer for CFP'94 spoke with Judi expressing interest in doing another BAWiT-sponsored panel. He stipulated that we "not do another panel like the last one," something to the effect that "it's been done, and [BAWiT] should move on." —Interesting to see what would happen if the same requirement was made of every *other* panel of the CFP conference...

It's interesting that so many people consider gender issues a dead issue—or that raising it once is sufficient, and that the topic's been dealt with. A single panel at a single small conference isn't enough. Women's Studies, Women's History Month, and an occasion conference here and there isn't enough. Women's issues are a daily issue—that's the whole point.

Why Women's Issues

You know, it's not really just about women's issues. To me, it's an opening. It's a stepping stone to larger, more pressing — and more difficult — social issues. With crime, and random violence and increasingly destructive despair at our heels, we need to put our focus on race relations, education, opportunity.

Access. To me, it's clearer and clearer that we have to work on outreach, on access, on giving, on sharing, and mutual assistance. Awareness is nothing without the ability and the desire to act on it. BMUG is built on people helping people. To me, it was never just a Mac user group. It's a pretty active community, and an ideal place to do community work.

Behind the scenes, planning is going on to provide computer training for women and minorities. It may be the most important thing BMUG ever does.

Bay Mac Women meets once a month, the 2nd Sunday of every month at 6pm, except December, and possibly November or January. We meet at the BMUG office, 2055 Center Street, half a block below Shattuck Ave & the Berkeley BART Station, except as otherwise announced via Bay Mac Women's online conference on Planet BMUG BBS. Watch our conference for notifications of speakers, demos, and social events.

Women's Economic Agenda Project (WEAP)

Poor Women Making History within the World of Computers

by Jean Seley and Ethel Long-Scott

Bringing Women into the Mainstream of Technology

It is clear that those who are not computer literate and who lack skills in the electronic technology fields are destined to face unemployment or low wage service jobs. Every field and profession has been impacted by electronic technology. An example that is relevant for our construction graduates (construction training was one of WEAP's earlier programs) is the use of computers to design buildings, produce blueprints and even to operate heavy construction equipment.

Women's Economic Agenda Project (WEAP), with a thirteen year history of fighting for economic justice for low income women is launching a Women and Family Center, designed to provide education and training in the computer and communications technology, to foster development of new small, women and minority owned businesses, and to involve Oakland's grassroots leadership in a program of community revitalization.

Assisted by loans from the Oakland Redevelopment Agency and the Equitable Corporation, WEAP has acquired a stunning building in the heart of Oakland's downtown commercial corridor. The building is a four-story structure built around an atrium. WEAP offices will occupy one floor (ten thousand square feet) for advocacy and empowerment activities and economic development programs.

The Women and Family Center, when fully developed, will have a family room for children's play while their mothers work on issues, a health advocacy department,

disabled rights project, programs for youths and families, space for community groups to meet, and a library and research center.

A History of Leadership from the Bottom

Founded in 1982, by a group of women who recognized that the traditional women's movement was not addressing the basic survival issues of poor women, WEAP dedicated itself to economic justice for all. Our founding sisters, many of whom had a history of community service and a commitment to equality, focused on organizing a conference which was held in Sacramento in 1984, bringing over 300 women together from cities and towns throughout California. Over 50 percent of the participants in this historic conference were women of color and most of them were poor women. Others were leaders of grassroots advocacy and justice organizations, academics, and policy makers. These women met for three days, shared their experiences, debated, and prioritized their concerns. The result was an agenda for statewide action which was compiled into a document entitled *A Call to Action By and For California Women*. This document, which has been updated, serves as WEAP's blueprint for planning.

WEAP is grounded in the principal of leadership from the bottom. We are an organization of strong women, outspoken women, dedicated women. We are committed to the elimination of poverty and justice for all families. We empower poor women, many of whom once lived in isolation, struggling alone to meet the needs of their families. WEAP is about

dignity, survival and the basics of life for all families—enough food, a place to live, decent education and quality health care.

How WEAP Arrived at This Step

As businesses and government become increasingly automated and as communications are increasingly dependent on fax, electronic mail, and electronic meetings and conferences, those without access to the up-to-date electronic equipment will be left further behind.

WEAP has conducted computer training on a one-to-one basis for eight years. It is crucial that our members and constituents are computer literate and understand the job and business possibilities in fields of computer electronics, communications and the use of computers in varied fields such as building design, art, public relations, teaching and graphics. With Oakland's potential for becoming a vital commercial center leading to construction projects with jobs opportunities, the city's commitment to community revitalization and the outlook for training and development of small, women and minority owned businesses, the possibilities are unlimited.

Giving Voice to the New Women's Movement

WEAP is recognized statewide, nationally and internationally as a vital leader in the new movement of women from every country in the world. History is being made by women worldwide and WEAP is there, creating new options, activating women who have been disenfranchised and isolated; building networks

for planning; and promoting access to the benefits of technology and progress.

This exciting and rapidly growing movement found expression in the International Women's Conference through the participation of 45,000 women who attended the NGO (Non-Governmental Organization) conference. Women of all ages came from the villages of developing countries and from major cities worldwide to share their stories and to impact the Beijing Conference. Many of them are in a daily struggle for survival against hunger, sexual oppression and political unrest. Ethel Long-Scott, WEAP's Executive Director was co-chair for the African American women's caucus at this historic event and since her return, she has been addressing issues raised through the media and participated in numerous speaking engagements. Computer technology played a key role in logistics, communications and creating a plan for ongoing networking.

While generating many media stories through our own program activities, WEAP has earned a reputation as a resource for journalists who call for interviews, referrals, statistical information and background on news stories. Integral to the plan for the Women and Family Center is an Institute for Justice designed to expand the voice of poor and disenfranchised men, women and children and to extend our information and education services to a broader public.

Who are WEAP's Leaders Today?

We are women who some people call "uppity"? We are determined and sometimes difficult. We are unflinching in our commitment to leadership from the bottom. Through our collective experiences we are a valuable source of knowledge and information on poverty, substance abuse, history, housing needs, health issues, growth and survival. Here are a few examples:

Renee Pecot is in charge of WEAP's leadership development and advocacy work. An AFDC (Aid to Families with Dependent Children) mother of six, she had to overcome substance abuse, lived isolated and out of touch with her community and other women until she joined WEAP. One of her first challenges was to write her story for WEAP's quarterly news-magazine, the *Economic Justice Speakout*. She later agreed to serve as a Board Member, not sure what she could contribute. Renee was soon speaking to groups, appearing on talk shows, and handling in-

terviews with the press. She learned to write press releases, proposals, letters of request and reports. Renee has taught and counseled hundreds of poor women on their rights, on women's history and on how to take charge of their lives. She is proficient at word processing and creates original and professional flyers using her graphics skill and trains other women in basic computer skills..

Dorothea Lawyer, WEAP's Board President found WEAP when she was charged with Felony Child Endangerment after her infant son died while in the care of his older brother. WEAP worked with her while she was called to court over 30 times. We trained and supported her to organize her family, friends and fellow students in her defense. We taught her to use the computer to develop flyers and letters, write articles and to write and fax press releases. Dorothea overcame her natural shyness to become an outstanding speaker and writer. After 14 months of struggle, justice was belatedly served and Dorothea was free with no record. Today, she can be found at WEAP working at the computer as she compiles reports and takes care of other administrative tasks.

Margaret Gordon is Outreach worker for the Construction Trades Training Project which WEAP conducts for Caltrans under contract with the City of Oakland. She is a poor mother who raised three boys alone, sometimes relying on AFDC, sometimes working in food service or cleaning house to support them. Over the last year and a half, Margaret's life experiences, WEAP's training, and her intense desire and capacity to learn and to lead, have equipped her for the multiple roles in addition to her work with WEAP: Chair of the Affirmative Action Committee for Cypress-Mandela Freeway Construction, Community Worker for the Mental Health Department's Violence Prevention Program and advisor to other grassroots groups. Margaret produces reports, resource lists, memos and letters with growing computer proficiency.

Denise Milligan serves on the Health Committee and is helping develop the new advocacy project for disabled men and women which will be part of the Women and Family Center. She is a quadriplegic with cerebral palsy. After moving from Chicago, Denise found a home base at WEAP in Oakland where she could contribute by organizing meetings, bringing other dis-

abled people to WEAP, teaching and educating disabled men and women about their rights. She does word processing using a tool which is strapped to her head.

Juanita Brooks is WEAP's newest leader. In her capacity as Construction Administration Trainee, Juanita compiles information and reports and is becoming proficient at ClarisWorks and Excel. Juanita is a graduate of WEAP's Construction Training Project and is working on the plans and details for remodeling the second floor of WEAP's Women and Family Center Atrium which will house WEAP's new economic development and computer/communications training program. Juanita is a single parent with a seven year old daughter. She, like many of WEAP's leaders, has struggled for survival on AFDC and has dealt with most of the problems which inner city young people are facing in these difficult times.

These are just some of hundreds of women, as well as a number of men, who have come to WEAP throughout the years for the training and experience we provide.

Looking for Partners

We have acquired several high powered Power Mac laptop systems. In addition, we are negotiating with Apple and other organizations for assistance in equipping our computer training center to accommodate twenty-four students.

As we enter this arena of economic development and computer technology, we need all of the help and support we can get. We currently need instructors, aides, and tutors skilled in the operation of computers and computer applications to volunteer time to our organization. We invite you all to join our efforts by donating your valuable knowledge and time. If you decide to become part of this venture, you will work with groups or individuals in our computer lab, instructing in basic application procedures, internet navigation, or software programs. We also need volunteers to research available information on the internet. If you like what we're doing and would like to participate, we assure you that your generosity will be greatly appreciated and that your involvement will directly support low income families in their goal of self-sufficiency and dignity as full participants in building Oakland's future. ☘

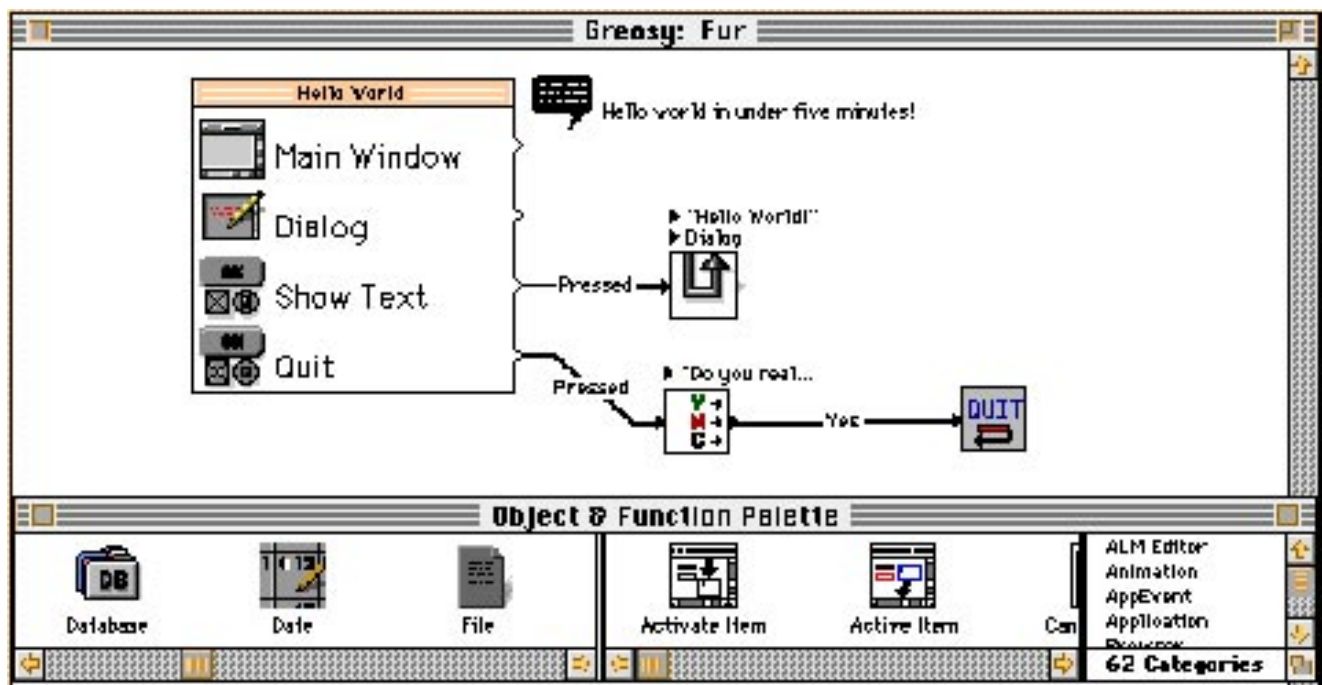
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Reviews

Improving on The Programming Environment

A Review of Novell's AppWare 1.2

by William Mead



This is where I'm coming from: I have been using the Mac for years—originally to write papers for college and to play Tetris. Now I balance my checkbook, communicate with friends and co-workers, juggle databases, create artwork, and perform countless other tasks with my Mac (as well as play the occasional game of Tetris). But, being a creative sort of guy, I always wanted to make my own programs. Maybe write the 5D version of Tetris and make millions overnight. With the guidance of a friend and a book that promised to make a programmer out of me in 21 days, I embarked on a mission to learn C++. Unfortunately, 21 days very quickly began to

look more like 21 lifetimes, and my enthusiasm fizzled.

My hopes for fame, riches, and creative gratification were recently resuscitated when I came across a program called AppWare, by Novell. The same friend who introduced me to C++ promised me that this was an environment that I could deal with. Instead of having to type lines upon lines of code, you click and drag little function icons around the screen, connecting them together by dragging lines between them with your mouse. Goodbye semicolons! Goodbye parentheses! I caught the AppWare train for a mere \$150 and once again embarked on a mission—this time it would be different!

Well, it has been a month or so; the initial infatuation has faded, as infatuations tend to do. But I am still enthusiastic about AppWare, and I recommend it to anyone who is interested in learning programming and/or developing applications for the Macintosh. It would have taken me years to accomplish with any other programming environment what I have accomplished in a month with AppWare. But beware, this tale has not reached a happy ending yet; there are indeed some clouds lurking behind all this silver lining! First, more on AppWare.

AppWare is based on ALMs (AppWare Loadable Modules) which are small premade programming chunks that contain the objects and functions you need

to create windows, blocks of text, buttons, etc.—basically everything you need to build all kinds of applications, including relational databases, communications software, multimedia software, and even games. It has pieces that will let you build client-server applications and objects that handle Apple Events. Furthermore, you are not limited to the ALMs that come with the package, as you can write your own. Of course, then you're back in the pit with the semicolons and parentheses, but we can leave that work to the hard core dudes who could presumably sell their new ALMs to us lightweights.

Another advantage is that when you purchase AppWare, the Windows version of the program comes on the CD as well, and it is reportedly easy to port your applications over to that other platform. However, keep in mind that some ALMs do not work in both platforms, and some are not exactly the same.

The package comes with both the Macintosh and Windows versions of AppWare 1.2, some examples, a tutorial, and documentation, all on a CD-ROM. There is a "getting started" type of users guide that brings you through the process of building a rudimentary rolodex-type of program—which you can finish in about three hours. Although the sample rolodex is not nearly as robust as others on the market, it leaves anything that you might make in HyperCard in the dust. The second tutorial expands the functionality of the rolodex program, and when you are through with that, you can continue to develop it and create something that is truly as robust as anything on the market.

AppWare has made great strides in the right direction as far as I am con-

cerned, but all is not rosy (as I have alluded). The MacWorld article that reviewed AppWare (MacWorld, October 1995, p.68) gave the program four stars, but mentioned some disadvantages. For instance, "the interface requires too much scrolling," said the author, Charles Seiter. This is true, as you have to go scrolling through your lists of ALMs and functions every time you want to go get something. There are no keyboard shortcuts that take you right to the ALM you want. Mr. Seiter also describes the size of the compiled programs as too big. They are certainly not as efficient space-wise as a program built directly in C++, but they are far more efficient than programs built by other applications that allow you to compile stand-alone versions of your work (e.g. FoxPro). As the cost of disk space plummets and the cost of software development remains high, this is not nearly as big a disadvantage as one might initially think.

There are a number of important issues that MacWorld did not address. For instance, the documentation that comes on the CD-ROM is not as clear as it should be; it is difficult to browse, and poorly indexed. You can get printed versions of the two 900-page manuals—for a price. AppWare is not able to create extensions or control panels at this time, which is a disadvantage if you are interested in developing that kind of software. Another potential problem for some developers is that AppWare is not Power PC native yet; I don't know how well it runs in emulation. Finally, you are supposed to be able to print an ASCII version of your functions for inspection, but this feature has been disabled on the Macintosh platform.

The biggest cloud on the horizon concerning AppWare is the rumors that Novell is looking to dump it altogether, or presumably sell it to another company. But even though AppWare's future hangs in the balance at the time I am writing, it is possible that these issues will have been resolved by the time this article is printed.

In any case, I am still enthusiastic that software development is going in this direction, and I believe it is inevitable that it will continue in this direction—no matter what happens to AppWare in particular. Although support is already massing for AppWare in particular—out there in the wide world of Webs—the more people who get involved, the more likely it is that AppWare will survive.

Check out the newsgroup at comp.soft-sys.app-builder.AppWare, run by Eric Weidl (who wrote a book called *The AppWare Primer*). He works independently from Novell and has indicated he will keep his newsgroup and support for AppWare going as long as there is interest. There are two more books out there, so check your local book store's *Books In Print* for titles. Also, check out Novell's AppWare home page on the Web for more info, or to order a free demo version on CD-ROM (<http://netwire.novell.com/ServSupp/dev-sup/AppWare/>). AppWare can be purchased through a number of mail order companies. I believe MacWarehouse sells it for \$150.

Despite the drawbacks, AppWare offers a great environment to learn programming and to build applications. It has proven to be a door opener for me. Who knows? Perhaps after learning how to build function chains, the syntax of an environment like C++ won't seem like such a big stumbling block. ☞

ClarisWorks for the Small Office/Home Office

by Frank Higgins

Does ClarisWorks 4.0 really have what it takes to help run a small office or home office? Most people think of ClarisWorks as “a basic word processor that does some other things too, but I can’t remember exactly what.” Actually it can do many things for the small or home office, and at a price that makes it one of the best software deals around.

What is ClarisWorks and how does it fit into a small office?

ClarisWorks 4.0 is an integrated, or works application, which means it has Word Processing, Spreadsheet, Drawing, Painting, Database, and Telecommunications modules all wrapped up into one package. Each of these modules have the capabilities of a stand-alone application. ClarisWorks’ integration is what makes it more than just a bunch of separate applications stuffed into one box. This integration lets you use different modules together in one document, and gives you much more power than six separate applications working independently.

ClarisWorks 4.0 can provide your small office or home office with a simple, low-cost tool kit to handle most of your business tasks. If you think of a word processor or a spreadsheet as a tool like a hammer or a drill, then ClarisWorks is like a Swiss army knife. ClarisWorks can prepare you to handle a variety of tasks, and to work with files from many different applications. Even if you depend on a single workhorse application for your core business tasks, ClarisWorks 4.0 can supplement your primary application and help you with the secondary tasks that keep your office running.

At a street price of \$129.00 (\$69.00 upgrade from a previous version, or just about any other Works package), ClarisWorks 4.0 is an excellent value. Version 4.0 is a major update, and includes many new features lacking from its earlier incarnations. To assemble a set of applications with the same capabilities, even with Shareware, you’d probably pay twice as much or more. And compared to Microsoft Office, which only gives you a word processor, a spreadsheet and a presentation package, ClarisWorks is an absolute steal. If you have Macs and Windows machines in your office, ClarisWorks for the Mac uses the same file type as its Windows version, so documents can be shared across platforms without translation. This is handy if you want to standardize your Macs and PCs with the same software.

How ClarisWorks Works

Each module in ClarisWorks has its own document type. The type of document you choose determines which module you use. For example, text documents use the Word Processing module, draw documents use the Draw module, spreadsheet documents use the Spreadsheet module, and so forth.

You can access other modules in your document by creating what’s known as a frame. For example, let’s say you want to put a table of numbers in the middle of a text document. You would create a spreadsheet frame to hold the table. Inside the spreadsheet frame you have access to all the Spreadsheet module’s tools and commands which you can use to create the table. A document can have more than one frame and each frame can access a different ClarisWorks module.

Here are my evaluations of each module, including an overview of new features in this version.

Word Processing

Most people use ClarisWorks first and foremost as a word processor. Claris took this into account when designing version 4.0—several significant new features were added to the word processing module. These new features make ClarisWorks into a product that can compete with dedicated word processors like Word, Write Now, and Word Perfect. For the first time, ClarisWorks has real paragraph styles that let you set font, tab stops, alignment, and more, with one step.

Also added to version 4.0 are facing pages and section formatting so that you can create complex documents with separate sub-sections and two-sided pages. Tables and charts in text documents have always been easy because of the access to ClarisWorks Spreadsheet module. And, ClarisWorks has the most straightforward column creation I have seen on a word processor. (See Figure 1, next page)

The Word Processing module has a very intuitive interface that shows a paper-sized page on the screen with lines showing you the margins. No matter how you set up your text, you always see a close approximation of how it will look on paper. This is especially useful if you are new to computers and word processing.

In version 4.0 outlining no longer requires you to switch to a separate mode; outline styles are applied like any other paragraph style. For those of you who need to cite sources, ClarisWorks 4.0 supports footnotes and endnotes. The foot-

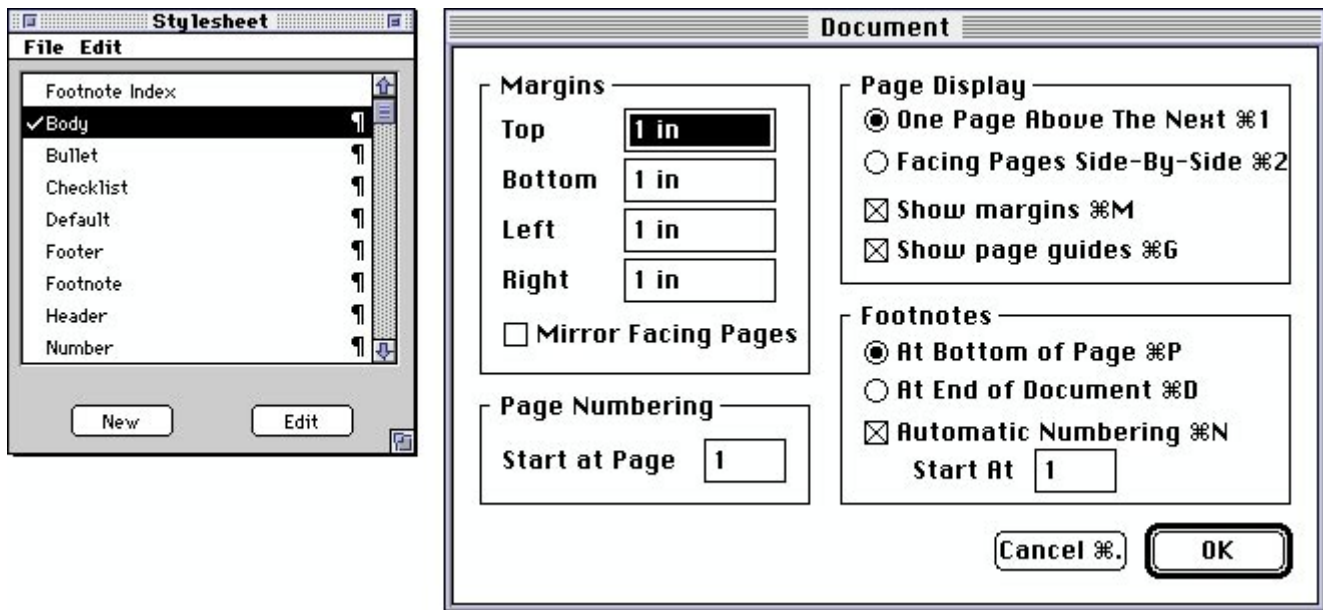


Figure 1. Paragraph styles and facing pages are new to ClarisWorks 4.0

note “Assistant” (like Microsoft’s wizards, only more friendly), automatically sets up source references in the format of your choice; all you have to do is enter a publication’s information.

The Word Processing module is used to add text to all types of documents except Communications. You can even add a text frame to a text document if you need a floating block of text.

Spreadsheet

If you need basic spreadsheet capabilities and don’t feel like shelling out the three hundred bucks for Microsoft Excel then take a look at ClarisWorks’ Spreadsheet module. You’ll find enough number crunching muscle to handle most spreadsheet tasks without complex bells and whistles to distract you. ClarisWorks can read and write Excel files as well as common interchange formats like DIF, SYLK, and tab-delineated ASCII text. Charts and graphs are exceptionally easy because the most popular chart types are available on ClarisWorks’ shortcut palette. All you have to do is enter and select the data and click on a shortcut button. ClarisWorks does not include the vast array of chart types that Excel does, but there are certainly more than enough to satisfy all but the most jaded chart freak.

The main new spreadsheet features in version 4.0 are styles for spreadsheet documents and the Fill Special command. Spreadsheet styles let you format spread-

sheet cells with font size, and style, color and pattern. You can then save the style and apply it to other spreadsheet documents. The Fill Special command lets you fill in a series of cells with a repeating pattern of information, like days of the week, months of the year or sequential numbers.

If Macros are a must for your spreadsheet then you can use ClarisWorks’ built-in macro recorder. You can record a sequence of actions and play them back to automate repetitive tasks. ClarisWorks macros cannot be edited however, just played back exactly as they were recorded. This limits macro complexity, but eliminates the need for a separate scripting language. Macros are available in all ClarisWorks modules. If you really need power user scripting capabilities, ClarisWorks 4.0 supports AppleScript, and includes some sample scripts for converting documents to ClarisWorks format.

You can also use the Spreadsheet module to add tables and charts to text, drawing, painting, and database documents.

Drawing and Painting

ClarisWorks’ two graphics modules look and feel like their Claris forebears, MacDraw and MacPaint. You use the Draw module to create vector-based graphics that can be resized or rotated and produce high quality print-outs. The Paint module produces bit-mapped graphics, that are most suitable for dis-

play on the screen. Paint graphics can be edited dot-by-dot, whereas draw graphics are edited by changing fill colors and patterns and moving and reshaping lines. The Paint module is used to create special graphic effects not possible with the draw tools, and to import bit-mapped clip art and scanned images. The Draw module is used to create diagrams, maps, and illustrations. Because the draw module lets you easily combine text and graphics, it’s also great for page layout and presentations, but more on that later.

The Draw module also benefits from the new style features in version 4.0. You can create a draw style that contains attributes like line thickness and fill color and pattern. Then you can apply that style to any draw object, including frames. New in ClarisWorks 4.0 is the Free Rotate command which lets you rotate draw objects to any angle you like. You can also rotate frames which opens up some interesting possibilities for tilted text and skewed spreadsheets.

ClarisWorks 4.0 has a new way to store and access clip art called libraries. Each library contains images related to a common theme like holidays, or sports. When you open a library, it appears as a floating palette on top of your document. You can use the clip art in the libraries that come with ClarisWorks, add images to a library or create new libraries to hold your own images. The library palette (see Figure 2) is somewhat confus-

ing since it contains its own menus and several buttons. However, you can easily add an image to your document by dragging it from the library and dropping it into place.

The draw tools are available in all ClarisWorks modules except Communications. You don't need to create a separate frame to use the Draw module; you just choose a draw tool and create a shape anywhere on your document.

You can create text and spreadsheet frames in a paint document, but when you switch back to the Paint module, the frames become paint images and can no longer be edited as text or spreadsheets.

If you just need a few simple graphics for business documents, ClarisWorks can handle it. If you need a professional graphics package, you should get Adobe Illustrator or Macromedia Freehand, or for bit-mapped images, Adobe Photoshop.

Database

One of Claris' goals with ClarisWorks was to create a demand for its other products. They accomplish this by making the modules look and work like related Claris products. For example, if you need a more powerful word processor, naturally you would choose MacWrite Pro since it looks and feels like the ClarisWorks word processing module you are already familiar with. The same logic applies to the Database module. You could think of it as Filemaker Lite—everything you always wanted in a database and less.

The Database module has enough power to handle things like a contact database, invoices, and perhaps even limited inventory tracking. However the ClarisWorks Database module just doesn't have enough juice to handle databases with more than a few thousand records. The Database module also lacks scripting capabilities and databases cannot be shared across a network.

If you need a serious database for your work, get FileMaker Pro (or 4D if it needs to be a relational database).

Don't get me wrong, the Database module is quite good for non-demanding database tasks and the new features in 4.0 are useful, but you'll want something more if your database is a main element of your business. Version 4.0 lets

you save sort and search criteria so you can repeat a specific search, and includes a spreadsheet-like "List View" that lets you display several records at once.

There is no such thing as a database frame in ClarisWorks. However you can use database information in a text document with a mail merge. The Draw and Paint modules are available to design the layout for your database, but can't be used on individual records.

Communications

ClarisWorks' Communications module is like the human appendix... it used to have a purpose but now it's just there, waiting to be removed. The Communications module is the only part of ClarisWorks that doesn't seem to have much value.

In the old days most communications between computers was done with terminal emulation software that let your home computer work like a text-only "dumb terminal". Now all the major online services and even the Internet have nice, friendly graphical interfaces, and the

only reason you need to use terminal emulation software is to log on to small bulletin boards whose content hasn't been moved to the World Wide Web.

What this means is that most people only rarely need to use ClarisWorks' Communications module. Trust me, you'd be better off using a good Shareware terminal emulation application like Zterm. The interface in ClarisWorks' Telecommunications module is klunky at best, and it lacks fast file transfer protocols like z-modem. About the only thing the Communication module is good for, is hooking up a Mac and a PC directly with a serial cable, but since the ability to read PC disks is built into the Mac system software, why bother with cables and serial ports?

Page Layout and Presentations

One of the things ClarisWorks does best is page layout for desktop publishing. Now I'm not talking about the kind of desktop publishing that involves service bureaus and color separations. I'm talking about good old-fashioned desktop publishing where everything happens on your desktop—from concept to printed page. You're not going to print up a book this way but it's great for shorter business documents like flyers, and brochures. Two welcome additions that would improve ClarisWorks layout capabilities are better kerning controls and the ability to print odd or even pages for easier duplex printing.

ClarisWorks Draw module is perfect for simple page layout because it lets you easily combine text, graphics, and charts anywhere on a page. If you want really spiffy output check out the specialty papers from Paper Direct. They sell paper and card stock with pre-printed color accents designed for brochures, flyers and even business cards. They also offer software templates for ClarisWorks so all you have to do is add text to a layout and print.

One of the best kept secrets about ClarisWorks is that you can use it for presentations. Your presentation can be created with any module except communications, but the draw module gives you the most flexibility. You can include graphics, charts, and pasting in QuickTime movies provides video and sound. The presentation assistant will even set up a custom template,



Figure 2. The confusing, but useful library palette.

and then all you have to do is add your information.

ClarisWorks and the Internet

A handy ability in a world quickly becoming more and more entangled in the Internet is being able to translate ClarisWorks word processing documents into HTML, the format of the World Wide Web. Version 4.0 includes a template and translator to do just that. This lets someone who has very little HTML experience create a web page that can include graphics and links to other pages. The template is not a WYSIWYG web page editor, but it's easier than working in straight HTML. Also, the translator does not handle all HTML formatting commands, so some knowledge of HTML helps.

Issues to Consider

ClarisWorks 4.0 is a major improvement from ClarisWorks 2.1 and 3.0, but there is always a cost for progress. First off, version 4.0 no longer runs on 68000-based Macs—the Mac Plus, SE, and PowerBook 100. Previous versions of ClarisWorks have kept these older machines useful, allowing them access to up to date software. Version 4.0 also requires System 7 or later with 4 megs of memory. This is still pretty thrifty for today's applications. A minimum install needs only 1 meg of disk space, but sacrifices some functionality. The full install with clip art and all the extras eat up 14 megs of hard disk space. Still, not too much to ask for an application that does so many different things.

The other big issue is that ClarisWorks 4.0 documents cannot be opened by versions 2.1 or 3.0. Claris says they may release a translator to save documents in version 2.1/3.0 format, but nothing so far. Of course, ClarisWorks 4.0 can open 3.0 and 2.1 documents, but it converts them to 4.0 format when you save. This means that if you currently own more than one copy of ClarisWorks 2.1 or 3.0, you'll have to upgrade all your copies at once to insure document compatibility.

Conclusions

There's something about the Claris approach to interface design that makes Claris applications almost fun to use. Maybe it's the resemblance to the legendary MacPaint and MacDraw that makes using ClarisWorks feel like something of a home coming, especially after working with software from Microsoft. I'm reminded of the feeling of driving a VW Bug—it may not be flashy, but it will certainly get you where you need to go and it's got its own special charm. The bottom line is I use ClarisWorks 4.0 a lot. Sure, I have the big powerhouse apps, but I always try ClarisWorks first. I just like using it. In fact, if I could only have one application on my computer, it'd be ClarisWorks.

If your business computing needs aren't focused in any one area, then ClarisWorks may be the only application you'll ever need to buy. If you depend on a powerhouse application for the main area of your business then ClarisWorks

can take care of your day to day business computing not covered by your main application. Either way, ClarisWorks is a great tool that can handle a diverse variety of business computing tasks. And at \$129.00 for the full package or \$69.00 for the upgrade, it definitely helps stretch the small office/home office budget. 🚀

ClarisWorks 4.0

Retail Price: \$129.00

Upgrade: \$69.00 (from previous version of ClarisWorks or competing product)

System requirements:

*Macintosh or Power Macintosh with 68020 processor or higher

*4 megs RAM

*1 meg hard disk space for minimum install (2 megs for Power Macintosh), 14 megs for full install

*System 7.0 or later

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Santa Clara, CA 95952-8168
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Just after I finished this article, Claris released a little utility called "ClarisWorks File Converter" that converts ClarisWorks 4.0 documents to version 3.0/2.1 format. If runs on all Macs including the Mac Plus, SE, Classic, and PowerBook 100. This lets you share ClarisWorks 4.0 documents with Macs running versions 3.0 and 2.1.

Claris also released an up-dater which converts ClarisWorks version 4.0 or 4.0.1 to version 4.0.2. The new version includes bug fixes and a few new features like sup-

port for drag and drop from other applications.

In addition, Claris released a batch of updated XTND translators to fix problems in the originals.

You can download these files from the Claris areas of the major on-line services.

Note:

Claris may also have these files on their web server at <http://www.claris.com/>.

As of this writing, the files had not been posted on the World Wide Web. Also, Claris' web servers seem to be extremely busy, and quite slow to respond.

WordPerfect 3.5

Surprises and Secrets

by Scott Beamer

I could have written this article equally well using any of the Mac word processors. Let's face it, for the vast majority of our work, any Mac word processor will do fairly well. Veteran users opt for higher end products because they do use some of the higher end features, they like the image of having the best, and they like their software to entice them with a never ending array of heretofore undiscovered abilities. Veteran Mac users are constantly faced with the question of when to upgrade their word processor, and if it is time to switch products. The answer is usually cloudy.

Right now may be one of those times when many will find the answer clearer than usual. While Microsoft Word remains the market leader by a large margin, its current version is unwieldy, especially for those not on a networked Power PC.

WordPerfect has been the second best selling word processor on the Mac since its introduction on the Mac in 1988. It has been gaining considerable market share since the introduction of Word 6.0. The new WordPerfect 3.5 is of special interest to those not satisfied with their current word processor and those who want to keep current.

This new version of WordPerfect contains more attractive new features than its modest increase in version number might indicate (previous version 3.1). Leading these are tools for the world wide web. It comes bundled with Netscape Navigator and now includes a tool bar for editing HTML documents (web pages).

Of major interest for both web junkies and conventional word smiths is the new Bookmarks tool bar. Not only does

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it make inserting bookmarks in a document as easy as selecting text, clicking on the Mark button and naming the selection, it also permits links. These links can be to other parts of the document, to other documents, or to URL (Universal Resource Locator in the world wide web)

addresses. Click on the underlined Blue text, and away you go. If the link you have chosen is a web address, WordPerfect will switch to the web browser of your choice (selectable in Preferences) and attempt to connect automatically.

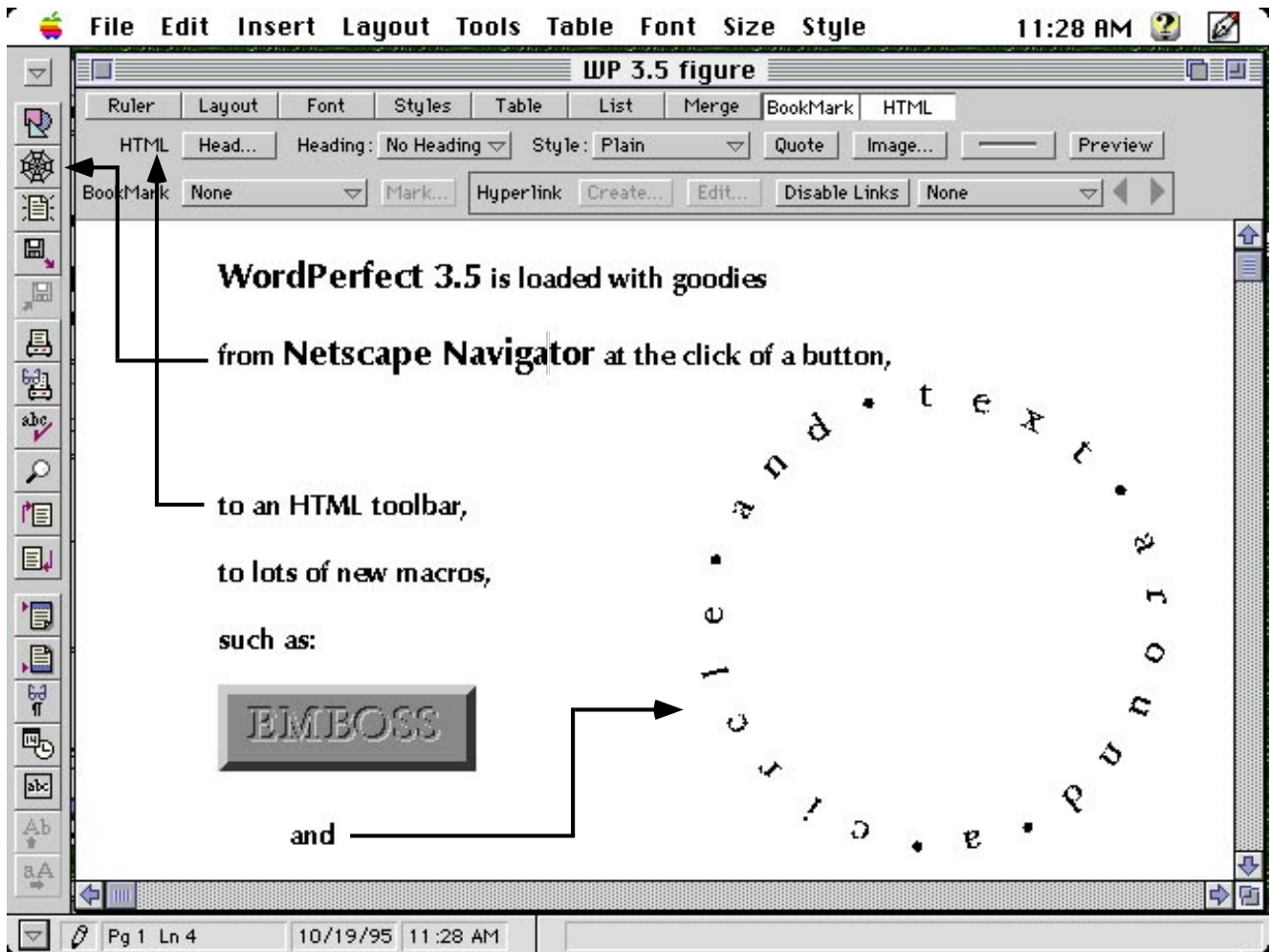
Other new features of interest include: ability to read text aloud, "Make It Fit" menu choice, almost ninety templates, "Easy Envelope," and an optional CD ROM version. The price has been adjusted downwards dramatically. If you pay \$100 you are paying too much. The suggested retail price is \$189 (for floppy or CD ROM version), and a full upgrade package has the suggested retail price of \$89. The upgrade price is available to users upgrading from any previous WordPerfect version (any platform), any competing word processor, or any Works or Macintosh suite product.

When they demoed this version at the Berkeley weekly meeting, they handed out cards to all in attendance offering the full version for \$49. Keep your eyes open for other such opportunities.

You may find Student Essentials an attractive bundle (You don't have to be a student to buy it) available through most of the mail order companies. It's WordPerfect 3.5 bundled with six other applications for \$159. The other applications are: Compton's Encyclopedia, Random House Webster's Dictionary, Bookends (a reference tracker), 100 Bitstream fonts, Netscape Navigator, and Student Assist, (a PIM for students).

WordPerfect Does InterNet

I have seen web junkies wowed by the HTML toolbar. Not only does the HTML bar allow one to write and edit web pages, it also previews your efforts in the Netscape Navigator.



This allows you to download a page with a feature you like, copy that feature onto the current web page you are editing in WordPerfect, see the code for that object, and edit it, then preview your own page in Netscape Navigator. The demo example I most remember was copying a scrollable list from the downloaded page to the one being worked on. Adding a scrollable list to the new page was that easy. Similarly, graphics can be collected for use through the Netscape Navigator by selecting them and observing their path name (they are usually not stored with the page they are on) in order to download.

For those leery of writing code, most HTML formatting can be done by choosing appropriately from pop up lists. You can install a button to jump from WordPerfect to your favorite web browser.

More System 7 Tricks Than Anybody?

An important fact in understanding today's WordPerfect is that it was on the

platform with Apple the day System 7 was introduced. It was the first word processor to be Power Mac compatible as well (This is the third Power Mac version). In fact, WordPerfect has been among the first to include practically every addition to the Mac OS since the introduction of System 7.

No other Mac application I can think of has as good a track record in this area. This makes it not only a very Mac-like application, but also among the most powerful. System 7 elements included include: Balloon Help, Publish & Subscribe, QuickTime, Apple Events. System 7.1 elements include: WorldScript, PowerTalk, AppleScript. System 7.5 features supported include: QuickDraw GX printing, Apple Guide, Macintosh Drag & Drop, Easy Open.

Speech abilities, added in this version, allows for selected sections of text to be "spoken aloud" by your Mac. This could be used for easy proofreading or to bring presentations or demonstrations to life.

CD ROM version — A Loaded Disk!

While the price is the same for both floppy and CD ROM versions, there are some differences. Though the packaging is almost identical, you will instantly be aware of which version you have in your hands by the weight. The package containing the CD ROM version is feather light, as even the manual is on the CD ROM disk. WordPerfect is not entirely certain what their customers will think of this, so if you want or got the CD ROM version but would also like a paper manual, discuss it with tech support. The company tends to be accommodating.

Besides what you find on the floppy disks, the CD ROM version includes a full version of Envoy, their portable document system. Of course, the manual and Read Me files are saved in Envoy format, but you can make a portable document from pretty much any file you have and send it to anyone else to read on a Mac

or Windows machine, whether or not they have the application with which you created the document. Envoy is similar in function to Common Ground and Adobe Acrobat.

Also included is a crippled version of AppWare, an object oriented authoring program from Novell. For those who like getting down and dirty with their Mac, this application allows them to create mini applications (something like macros on steroids) largely by manipulating objects.

Whether you buy the floppy or CD ROM version of WordPerfect, you will find you get a lot for your money. Both have a grammar checker, thesaurus, templates, fonts, clip art, equation editor, and tons of macros. The CD ROM version has still more clip art and templates. While loading it all on your hard disk can take up 20 megs or more, installing the minimum version can work in a limited environment. For instance, I load only the minimal application with the spelling checker on my old PowerBook 140 4/40, and find it works fine there.

ToolBar Magic

One of the best demos of what AppWare can do is found in two buttons that can be added to your button bar (Edit bar/Applications). These give you a sort of automated copy and paste between WordPerfect and Excel or FileMaker Pro. If you have either of these applications open, in addition to WordPerfect, and data selected, clicking on the appropriate button will import the selected data and automatically create a table from it in WordPerfect.

The chief feature of the WordPerfect interface is that it is extremely editable. Most standard features can be accessed by menu choice, Command key, or button. You select which button bars are visible, and what buttons are on each bar. You can also edit Command keys and save button bars or Command key sets for different projects or individuals.

After a couple of years using the WordPerfect button bars, I find my custom ones mean I go to the menus only a fraction as often as I used to. There are also some, such as jump to top or bottom of document and center page top to bottom, that never were menu choices.

WordPerfect Secrets

As usual, it is the little improvements to WordPerfect that I am especially fond of. Take, for example, the option of "Remember Cursor Location" (Preferences /Environment /Windows). Selecting it as a preference means when you open a saved document, it will open to the point you last had the cursor at. When working on large documents, this is distinct advantage.

Another clever new feature is the "Put paragraph above" menu choice. If you have begun a document with a table, then find you want to write above it, it used to be very difficult to do so, but this gives a quick fix.

Arguably, WordPerfect has the most features of any Mac word processor. The problem is finding them. One area that is difficult to get started with is macros. The macro library in WordPerfect is of a scale similar to that in Microsoft Excel, but few are aware of it. Fewer still know what to do with it. There is a separate 800K Help file for macros (little on them in the paper manual), but most need more help getting started than this. Read the files in the Documentation folder in the WordPerfect 3.5 folder for help with this and other WordPerfect secrets.

One easy way is to use the macros included in sample documents and templates. These must be loaded into your library, so many never find them. They allow one to add a dizzying array of additional functions from Drop Caps to pleading paper formatting, with calendars, fancy page borders, pie charts and circular text in between.

If you are a macro nut or are always on the lookout for new tools for your word processor, try visiting WordPerfect on the web <http://www.novell.com/serv-Supp/mac/>. You will find a monthly macro tutorial there called WordPerfect Mac News.

You may also want to check your favorite ftp site for "John's WordPerfect Outlining Macros." These can be installed to give considerable more strength to the rather weak outlining abilities of WordPerfect.

This may not be exactly secret, but it seems to fit here best. That's the new menu choice of "Make It Fit." Whether

One of the best demos of what AppWare can do is automated copy and paste between WordPerfect and Excel or FileMaker Pro. If you have either of these applications open,... in addition to WordPerfect,... clicking on the appropriate button will import the selected data and automatically create a table from it in WordPerfect.

it's a business letter that spilled over a bit on to the next page or a school assignment that cannot be longer than a specific number of pages, this menu choice automatically adjusts your choice of margins, fonts and sizes in an attempt to reduce the document to the number of pages desired.

Techie Stuff

As I have said, I find WordPerfect's outlining abilities rather weak. I also don't install the Thesaurus or Grammatik, the grammar checker. I never use either. I know of no grammar checker on the Mac that I find useful.

I have been a beta site for most versions of WordPerfect Mac, and believe me, over the years, WordPerfect has had its share of bugs. I sometimes have trouble remembering which were in the beta version and which are in the shipping version. I am sure one serious one in the current version has not been fixed as of this writing. If you add bookmarks to a document, then Drag and Drop, look out! There are a handful of scenarios as to what happens next, and none of them are nice.

WordPerfect fixed their import/export problems years ago. This version opens most documents, including Word 6.0, fast and automatically. Screen redraw has been less stable than many Mac products. This version is probably the stablest ever, but there are still too many times when I look and the screen and find it looks other than I had expected it to. Most of the time, it settles down in a second or two. Other times, I must manually encourage it to redraw to get things back to normal.

The electronic version of the manual is great, but it makes me nervous. I am a

bibliophile, and manuals serve as security blankets for me. I confess, I rarely look in manuals, but that doesn't mean never.

The on line help is practically a manual in itself. It is large and well done. There are separate help files for macros and grammar. Its Apple Guide is the largest and best I have seen at walking you through procedures you have never tried before. For example, if you are tentative about how to use the new Bookmark feature, let the Apple Guide walk you through it.

If you put all the Help files available with WordPerfect on your hard disk, it will take up more than ten megabytes. This includes two megabytes for the full working version of Envoy. The manual itself takes up about six megabytes. Those with fast CD ROM drives can access the manual directly from the CD, but on my old drive, it makes more sense to keep the manual on my hard disk. For those with space problems on their hard disk, the help files can be judiciously thinned by leaving out modules, such as Grammatik or the macros.

Tech support remains perhaps the best in the business, but a sign of the times is that the 800 number tech support is free only for six months. After that, you can pay per call or join their subscription service.

WordPerfect 3.5 is certainly hefty at over 20 megabytes for a full installation

(including fonts, clip art, and templates), but it is smaller than the competition and allows for minimal installations. I also use it on my PowerBook 140 4/40, with no problems. Hard Disk requirements are 5 megs for minimal installation. It prefers 2 megs of RAM for conventional Macs and 4.5 megs for Power Macs. It requires System 7 for conventional Macs and System 7.1.2 for Power Macs.

Conclusion

Whether you are looking for your first Mac word processor, ready to graduate from ClarisWorks, or are not satisfied with MS Word, it is an easy, painless transfer to WordPerfect 3.5. Yes, WordPerfect will open your old documents, made in other word processors, in most cases, automatically. The price is so low, that even if you decide to go back to MS Word with its next major upgrade, the trial will have cost you less than upgrading to the unpopular Word 6. ☞

WordPerfect 3.5

Floppy or CD ROM	
List Price	\$189
Upgrade/Sidegrade	\$89
Student Essentials	\$159

Novell

1555 N Technology Way
Orem, UT 84057-2399
801/222-5800
FAX 801/222-5318
Internet: <http://www.novell.com>
(also aol)

BulkRate

and... other ruminations

by Leroy Sprinz

One day, back in the 1960s, my principal suddenly appeared in my classroom. Though I had pleased him enough to be hired for the tenure-establishing fourth year, I dreaded his observation visits. Baseball was enough in my veins to expect bad bounces, especially when I faced sophomore students for fifty-five minutes of grammar.

Middle track students, they. Testing placed them in that awful no-man's land of the average. So they were happy to get by. Achieving too well qualified them for college prep classes. Managing to get by and not rock the boat kept them from slipping into the catch-all track for dummies, truants, for all those who challenged the system. Making like zombies protected them from gaining the status of teacher's pets or of becoming candidates for the vice-principal in charge of discipline. The boys remained eligible for the athletic teams; the girls, attractive to the Block Club elite.

So in walks the coach-become-principal, all toothy smile and aging muscles and his clipboarded evaluation sheet crammed with stuff to rate from one to five: needs remediation to mentor-level teaching.

Diagramming. That's what I entertained him with. Probably, I'd intended something else. But I liked to diagram on the chalk board and to move around the class to bend over struggling efforts. And my baseball blood demanded that I throw one of my better pitches in a tight spot.

The class responded like good hitters to a good batting practice pitcher. I threw fat pitch after fat pitch which each hitter clobbered while the remainder shagged. They took turns, willingly. No-

body tried to do all the hitting; all but one made sure no nuance escaped attention. For an hour, we enjoyed the world series of diagramming.

I couldn't wait to check my mailbox for a carbon of the evaluation. This principal worked fast; no homework for him. So, at my next break, I hurried to the office and emptied my box. There it was: marked, endorsed, and delivered. Fours and fives for things like evidence of planning, enthusiasm, rapport, mastery of subject matter; above average for everything but class participation. For that, a three. In the space for comments, he had written: "Good lesson. But what can you do about the girl in the last seat of the door row? She filed her nails the entire time."

"Nothing!" I reflexed, "Nothing" then. Weeks and months later, that year, and to the present, I still hear myself saying, "Nothing." But I did change my notions about subject matter and lesson plans and all the sorts of things that receive sacrosanct status in curriculum studies and plans. They're secondary. They're bridges between persons, between young and old. They're stepping stones from my side to someone else's side so that we can better learn from each other and transform some moments of the petty pace of time to nourishing pleasure.

That scrutinized grammar lesson years ago worked because I tried to hit each student's bat. Koufax attributes his success to the day he started trying to hit each hitter's bat: top end or label for catchable flies, bottom sweet-spot for double play grounders, bottom end or label for infield-in situations. Good pitches in the classroom zero in on the sweet-spot, right on it, for line drives. A good

pitch always challenges the best in everyone who touches the ball. So, that grammar lesson years ago worked because all of us, for the moments of that class, experienced giving our best. That's an experience that sticks. Apparently one, the nail-filer ignored, but audiences, even audiences of one, may remember.

All this prepares the way for words about some software companies and one Shareware developer. My curiosity about improving the performance of my Mac SE, hereafter referred to as Titus Andronicus (Shakespeare's hero who revenges his daughter by serving freshly-baked pies, steaming with the bodies of her ravishers, to their kin), has led me, in time, to conclude that the most satisfactory improvement results from exchanging old equipment for new. I haven't, of course, but I know I should.

Current software lessons me that what serves new machines may not serve my hybrid Titus nearly as well. I've exchanged messages with technical wizards responsible for adjusting the relationship between their products and my Titus and me. The effect has not always improved interaction between Titus and specific hardware and software. It has led to interesting and good-humored exchanges.

Accelerating Titus forced me to seek benefit from Mark of the Unicorn and Novy System expertise. Their tech persons transformed on-and-off switch combinations into clones of their persons. Troublesome software became an opportunity to discover the tech person's New England landscape through her patio door and some moving lyrics. Misperforming hardware produced, in roundabout fashion, a tale placing me in the Atlantic with *S. S. Mosaic* sailing southward and *S. S. Image Pro* beating north-

ward and my dingy bobbing between their hulks.

Recently, I wanted more information about Nine to Five Office as reviewed by Tom Fitton in the Fall 1995 BMUG Newsletter. Tom talked about human beings answering the Nine to Five Software Company's phones. My phone call produced two results. The man with whom I conversed convinced me that Nine to Five would suit me only if my hardware were more recent. "You won't be happy using our product on your SE." And all the technical talk became a vehicle for a day-enhancing exchange about the Haas Family, as in Levi 501s, and of frustrating experiences with hardware and software combinations that fell short of expectations. The net effect: neither of us was alone; our computers may have failed us, but another human being did not, at least not for the time of our telephone conversation. Perhaps, these effects comprise gross effect. The refined product, the fine wine our exchange produced, was consciousness that two strangers could rally from all the flotsam of distrust that pervades contemporary circumstances to play catch with each other's concerns.

More recently, a representative of Common Knowledge shared details of Advantage, another PIM, with me. I'd downloaded the demo from BMUG's File Libraries. I was pleasantly surprised. The more recent the program, the more likely Titus will chop it up. But Advantage opened; Titus did not serve me an unimplemented trap or bad F-line instruction. However, I could not find the promised online Help files. Intuition failed me even as I realized that Advantage seemed to have the potential for combining the functions of Now Up-to-Date, Contact, and Scrapbook in one program. But "seemed" does not convert potential to actual. So, off went my questions; so began a multiple of exchanges.

The Advantage representative learned that the demo needed more functionality to be effective, and he confirmed my intuition that the program would manage all my "writer's bits and pieces." Also, I learned that this apparently powerful and versatile program is expensive, more than \$200 (a less expensive version may be available in the future).

Two strangers in cyberspace served each other. Even humor had its moments, especially when the representative admitted choking on my use of "promised to combine three functions" for "seemed to have the potential for combining..." The representative breathed a huge cyberspastic sigh when I acknowledged that the three-for-one functionality was my estimate, not the promise of an advertisement for Advantage.

Bulk Rate

BulkRate has served as my offline reader for some time. Memory tells me that my first version was Freeware. Since becoming bargain Shareware, its continuous upgrades have met my needs even as I discovered new ones.

Six or so months ago, I mumbled and grumbled that attached files did not exchange. If a writer did not include his or her piece in the message sent to me, I had to remember to go online, then to my mailbox, to access it. Of course, the first few times I had to deal with the shock of not finding the message or the attachment. Fortunately, muddy waters cleared as memory rescued me: "Uncheck 'Show only unread files.'" During the summer, I really groused as contributors to Virtual Valley's Writers' Block stubbornly ignored the existence of BulkRate and attached 2k and 3k poems to their messages. "If only BR could handle attached files... If only these people used BR."

August came. An upgrade to BulkRate, version 2.1, also appeared. I retrieved it and transferred my settings files. With the wariness that tends my first use of any new software, wariness for Titus' idiosyncrasies conditioned to be reflexive, I used the new version to access VVCN. "Wow!" The status window surprised me. It indicated that attachments were flowing onto my hard drive. "Wow!"

One of the first versions of BulkRate had ignored the 19.2 setting for speed. No matter how I checked options, no matter how surely I made sure that I'd selected hardware-handshaking, I watched my modem downgrade from 14.4k to 4.8k speed. Email message of the anomaly produced Greg Neagle's next-day counsel: a different modem string.

Now, each time I install a new version, I check the string. No problems

since. But this last version attracted my attention to an option allowing me to clear my mailbox as a function of BR's efficient exchange procedure. So, I opted for clearing my box of all but the last ten messages.

It worked, it works. No longer need I remember to clear my BMUG mailbox. Each time BR exchanges, the status window informs me that BR is clearing for me. Automatic mail exchanges and file transfers; automatic mailbox maintenance.

This same summer made me aware of the difficulty to believe. Not only did some Mac users on VVCN function without BR, some who did use BR complained, yes, complained that it didn't work properly. Mac users on BACES, a Bay Area FirstClass system for educators devoted to coalescing efforts to develop exemplary schools, complained similarly. So, I thought Greg needed to know about one very happy user, also of the unhappy users.

Next-day email contained, "Thanks for being one of my earliest registered users" and "I wish these people would contact me; I would be glad to help them out. I have enough registered users and enough feedback to know that it works well for most people, and those that have problems usually have a simple configuration problem, usually with the modem configuration."

Something for me; something for Greg; something for potential users of BulkRate, maybe even for slightly disgruntled current users. Greg responds with solutions and thank-yous! And these experiences with BulkRate recycle that class in diagramming years ago.

The exchanges about technical matters between Greg and me shine a point of light in that darkness that surrounds the most befriended of us. It nourishes loyalty; it swells confidence that the next time I give some of my time to a stranger both of us will increase.

Curiously, coincidentally, BulkRate, Greg's special creation for anyone who subscribes to it, fosters the best in communication. Obviously it produces economical use of Pac Bell by automating the exchange of mail. Multiple files whiz between Titus and BMUG in the time I would need to prepare and send one 1k

message while online. But BulkRate has more than quantitative effect. It encourages quality exchanges.

The times I've tried to message in real time have not produced my most thoughtful, empathic, accurate efforts. My mind has flailed its arms in frustration as good stuff escaped control and emotional drivel took its place. Using BulkRate gives me the luxury of time to consider carefully what someone has sent me. It gives me time to consider the value of responding. If I discover value, then I can compose and evaluate, edit and weigh, perhaps employ the critical judgment of another, bring all sorts of tools and material to bear on my response. BulkRate gives me time to craft a few words rather than to scatter-shot some hastily considered ones. It gives me opportunity to have the pleasure of turning a mundane bridge between another and me into something pleasurable as well as practical.

Art has never fed the starving, cured disease, resurrected war dead. Mozart's exquisite sounds, coaxed from a piano-forte, do not alleviate malnutrition or turn aside blades and bullets. They do calm and inspire those who have time for his refined art. Erroll Garner has similar effect on those sensitive to the nuances of jazz. Then there is Everyperson, who eases the passing moments for self, perhaps for casual listeners, with diversions on living or recreation room ivory.

BulkRate gives those who use it time to score more precisely their efforts to resonate beyond their otherwise imprisoned consciousness. ✈

Quicken 6 Review

by Steve Becker

Intuit's latest Macintosh version of its popular personal finance software provides many enhancements to existing Quicken features, and offers some significant new capabilities.

A General Overview

Quicken initially endeared itself to the Mac world by providing a powerful checkbook management program, which combined a strong feature set and a large selection of customizable reports with a very intuitive interface and a well-written manual. Each successive release of Quicken has included refinements to the programs initial strengths, plus an increasingly broad feature set including personal investment management, electronic checking, personal budgeting, financial planning, and some basic tax links to Intuit's MacInTax software program. They have also demonstrated some creative ways to integrate online help into Quicken, while continuing to provide very good manuals with the software. To Intuit's credit, these additions to the application have been accomplished without losing the ease-of-use in the checkbook portion of the software. However, as you would expect, to fully utilize all the program now has to offer, there is a learning curve to deal with—though this is greatly aided by the well integrated nature of the program's features and the excellent implementation of the Mac's user-friendly interface.

Basic Features

One of the problems with a personal finance package is that you have to enter quite a lot of information to take advantage of its more powerful features. For those of you who might be thinking "Sure,

it may be a good program, but who has the time to enter historical data?" you can relax. One of the refinements I was referring to in the previous paragraph is called QuickFill. When you enter data in your checkbook register once, QuickFill remembers the entry. If it is a recurring expense/deposit, the next time you start to type in the entry, Quicken fills in the rest of the information for you on-the-fly. Further, Quicken maintains an editable list of all these entries. For instance, if you always make a fixed payment each month (say for a loan), QuickFill can be "locked" to always fill in the payment amount along with the category and description information. If the payment varies each month (a utility bill for example), QuickFill can be set to fill in all the fields except for the amount. In practice, this greatly speeds up the entering of data into the checkbook register. If you hate to type, Quicken lets you double-click items in the QuickFill list, or directly drag them to the register.

Quicken asks you to assign a category to each entry in the register. Categories let you organize your entries; you might have categories for automobile expenses, travel, taxes, etc. As with QuickFill, Quicken will maintain an editable category list for you (to help you get started, a list of commonly-used categories is provided with the program). The advantage of using categories is that when you create reports, they provide for an intuitive way for you to organize, view, and analyze your finances.

Actually, thoughtful, easy-to-use features are the hallmark of this program. For example, when you run a report (there is a large list of predefined and customizable templates and graphs to choose

One of the refinements is called QuickFill. When you enter data in your checkbook register once, QuickFill remembers the entry. If it is a recurring expense/deposit, the next time you start to type in the entry, Quicken fills in the rest of the information for you on-the-fly.

from), double-clicking on a line of data you are interested in will launch QuickZoom which creates a detailed report, showing you where the number in question came from. This can be done through successive levels of reports until you reach the register where the underlying data entry was actually made. At this point you can update any data in that entry, and all the reports you just zoomed through will automatically be updated to reflect the modified data.

For us non-accountant types, QuickZoom allows us to go back and correct/update even previously entered data with ease—and without having to deal with double-entry accounting. You may also go directly to a register at any time to update your data. Quicken provides a password option for opening files or for changing data entered prior to a specified date. I use this feature to prevent me from accidentally changing an entry to a previous year's data.

While there are far too many features and shortcuts carried forward from previous versions of Quicken to discuss here, I'll list a representative sample: Handling of split entries (allocating an entry such as a credit card payment to multiple categories); a customizable Icon Bar; downloading stock quotes from CompuServe or from the Quicken Quotes Hotline 900 number; creation of customized “memorized” reports based upon the criteria you select from the large list of report filters; automatic scheduling of transactions; creation of Transaction Groups; a monthly calendar which displays transactions that have been performed and are scheduled to be performed; transfer of funds between accounts; reconciliation of accounts; creation and monitoring of budgets; multiple personal finance planners; printing of checks; customizable command key shortcuts; customizable fonts and styles for displayed and printed reports; electronic tracking of your credit card purchases through Intellicharge (if you sign up for the Quicken credit card); and much more.

New Features in Quicken 6

The first new feature becomes apparent the first time you launch Quicken 6. A window appears asking if you would like to see an overview of the new

features in the program (if you choose to skip this option, you can bring up the same item from the Help menu at any time). This brings us to a major enhancement in Quicken—it now uses Apple Guide technology for its help system. Intuit has included many help screens that actually guide you through a step-by-step process to accomplish a given task. Users of System 7.0 or 7.1 will appreciate that Quicken includes two extensions that bring Apple Guide—Intuit calls it Quicken Guide—support to those systems (*note*: Quicken 6 requires System 7.0, or later).

I question whether experienced users will appreciate having to negotiate up to three tabbed windows to accomplish what they had previously been able to do in just one window.

Power Macintosh users will appreciate that Quicken 6 is available in a native version. This is a good thing, because the late beta release I tested was disappointingly slow on my 68030-based IIsi. Intuit says this is a known issue with data files which contain a large number of accounts; hopefully, this will be remedied by the time the program is released.

Some new reports have been added to Quicken 6, along with a new tabbed (index card-like) window for selecting and customizing the reports. The good news is that some new filters have been

added, as well as a new “Easy Report” setup window that should be helpful to new users. However, I question whether experienced users will appreciate having to negotiate up to three tabbed windows to accomplish what they had previously been able to do in just one window. Also, the small table that in previous versions listed the filters being applied to a report has been eliminated. A long-standing concern of mine has been that with so many filter options being available in the creation of a report, going back to a printed report after even a short period of time can lead to confusion in interpreting the data. Rather than eliminate the little support that was provided for keeping track of these filters, I would like to see at least an option to print a “filter page” with a report. Also, since Quicken makes it so easy to modify/update the information contained within its registers, a time-date stamp option for printed reports would be a welcome aid in tracking which version of a report is being examined.

A significant improvement to the program deals with the Budget feature. Creating a budget is now more flexible—allowing for a great deal of customization in both the content and appearance of a budget—and Quicken 6 supports the creation of multiple budgets. A nifty new feature is a window that uses color-coded bars to indicate how close you are to the budgeted amounts for specific budgeted categories.

Current Quicken users will notice that the Portfolio window has been completely revised. Instead of having to open a separate window for each portfolio account, all securities may now be displayed in one window. I say *may* be displayed, because it is now possible to hide individual securities from the window (the data in the registers is not affected by this). Also, users can now choose—right in the Portfolio window—to display a nice customizable selection of calculated values for their securities. Many of these—like average cost per share—were not available in previous versions of Quicken. To help make the viewing of all this information easier to deal with, the window now has a horizontal scroll bar and the ability to click on a column to select its data as the basis for sorting the display

(this method of changing the sort priority is now available in several other lists within the program). Columns may also be dragged to a new location so that you can prioritize which data always appears on the screen; you can even adjust the column field width to further refine your control of how the data appears in the window. My only complaint with the Portfolio window is that with so much information being presented, I would like to see some use of shading, and/or color, to make evaluating all this data easier on the eyes.

The programs preferences list has been redesigned and refined as well. Instead of having to go to several different menus to bring up different categories of preferences, there is now only one main preference window. When in this window, you select an icon from a scrollable list which then brings up a related list of preferences to choose from.

Over the years, Quicken has added the previously mentioned electronic banking features. The unsuccessful attempt to merge with Microsoft does not seem to have interrupted this trend. New for Quicken 6 is what Intuit calls, appropriately enough, "Online Banking." As the manual puts it, "Now you can bank online instead of waiting in line." The online banking features weren't included in the beta version of Quicken I tried, and as of this writing it looks like Intuit will be providing them in a free supplemental software release by the beginning of 1996. Intuit claims the online banking features will include getting up-to-date bank balances, seeing which checks have cleared, and transferring money.

The importance of backing up your data has also been addressed in Quicken 6. There is a thoughtful new preference that tells Quicken to automatically create a backup of your data file when you close the file.

Some General Observations

Clearly, Intuit has put a lot of effort into making their already fine program even better—there are more new enhancements in Quicken 6 than I have had a chance to address in this review. Although thoughtful features are abundant in Quicken, I feel there are still some areas where the program has weaknesses. For one thing, the handling

of security lots is not very sophisticated. The workaround that I use is to assign a separate letter designation to each lot in a given security. The printing of selected sections of large reports is awkward because, while Quicken provides for visible (and adjustable) page breaks, scrolling to the needed section of the report while maintaining a count of the passed page breaks is tedious and inefficient. Page numbers should appear on screen in each page of a report, so you can immediately determine the numbers of the pages you need to print. Also, trying to track the activity of a given security in the securities register can be quite a strain on your eyes and your patience. The ability to color code each security/lot in an investment register would greatly aid in tracking these transactions in the register view.

Additionally, while the new version of Quicken provides more ways to analyze your investments than did the previous versions, there is still no calculation for the yield on bonds and bond funds. People who are more concerned with the cash flow produced by their investments, than by the theoretical total return that includes unrealized capital gains and losses, would benefit greatly from the addition of this calculated value.

Finally, with so many ways to configure investment reports, be careful to understand the meaning of a report's results before acting on it. I have not seen the new manual that will come with Q6, but with previous versions of Quicken, I felt this area was in need of more complete documentation.

The Bottom Line

When the above concerns are viewed in the context of the overall program, Quicken is a very impressive package. With the excellent integration of the programs large feature set and the well-implemented use of the Macintosh user interface, the program is both easy to use and very powerful. For new users, I would suggest just setting up some basic bank accounts to get a feel for the program. Then, at your own pace, explore one or two new areas of the application at a time—I expect you'll quickly find yourself in transition to some of the program's more powerful features. The Quicken Guide

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Banking." As the
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can help you perform some tasks if you get stuck. Also, for the cost of a long distance phone call, Intuit provides better-than-average free phone support. Previous users of Quicken will appreciate the program's significant added features and refinements. Intuit also plans to release a Deluxe CD-ROM version which is expected to include an online manual, some tips, a home inventory program, and financial advice. With an expected street price of around \$50, Quicken 6 is not only the most complete personal finance software for the Mac, but also an excellent value.

Quicken 6 requires System 7.0 or higher, a machine with 4 megs of RAM (8 megs under System 7.5), and 4 to 8 megs of disk space. ✈

Steve Becker has been a BMUG member since purchasing his first Mac. When he can find the time, he stops by to work with the Helpline staff of volunteers. He has his own Mac consulting business, MacEase. Steve offers BMUG members a reduced rate. He can be reached at (510) 843-2775 or online at maceeze@aol.com—and on Planet BMUG.

Total Distortion

A Total Multimedia Package

by Rosendo Gonzalez

One thing I learned as a kid on Venice Beach was not to hang halfway out in the water when the surf was up. When a big wave came I either scrambled to shore or headed farther out to dive into the wall of water. If I got caught in the middle, a wave would break on me and pound me into the sand. Once I was in deep water, sooner or later I'd have to make a break for the shore, just beating the wave breaking behind me. Pop Rocket's adventure game *Total Distortion*, considered one of the all-time vaporware contenders, has finally headed for shore and shipped. There is nothing halfway about it.

Total Distortion has unified graphics, sound, and interactivity into a combination that no other game has matched. The most singular quality of the game is its use of sound. From the moment the game begins to load, sound weaves its way into the game. Every frame and action in the game is accompanied by an appropriate sound, whether it be mood music or a quirky sound effect. As a result, playing the game inadvertently creates an irreverent rock-and-roll tone poem. Joe Sparks and chief songwriter and sound guru Kent Carmical deserve praise for using sound to help evoke the distinctive character of the game. The game includes over 50 original songs.

Lights, Sound, Camera!

The game, after all, is about music. Your goal is to travel to the Distortion Dimension to win fame and fortune by making and selling music videos. As a music video producer, you have access to the nifty Total Distortion Video Sequencer (Figure 1) that allows you to assemble hundreds of clips into music videos. The videos can



Figure 1

be saved to disk and shared with anyone else who has the game.

You start the game with mundane stock footage. If you want to succeed at the game, you need to explore the mysterious Distortion Dimension and gather exciting footage and new songs. As you might guess, the natives are not friendly, so you'd better bring your guitar along. When you meet a Guitar Warrior, you'd better play fast, because you defeat them by matching their chords with your own (Figure 2—next page). At easier levels, color is used to help you match chords. At the most difficult level of play, you must match the chords by ear. Unfortunately, there is no practice mode for those of us who border on being tone-deaf, so I could never get very far at a high difficulty level.

A guitar might seem like a wimpy weapon to Doom freaks accustomed to carnage. But as Elvis might have said, a guitar will get you farther than a gun. No matter how you look at it, a guitar is a creative tool, and *Total Distortion* is essentially about creativity. Blasting limbs apart does not require human skills; playing a guitar or making music videos does. Being human is not an afterthought in *Total Distortion*. A central aspect of game strategy is not only *not* getting killed, but *taking care of yourself* as well. Forget to eat and your physical strength will fail you. Forget to sleep and you might find yourself passing out at an inopportune time. And then there is this enigmatic thing called "Life Force." Allow the demonic forces in the Distortion Dimension to zap your Life



Figure 2

Force and you'll never live to see your grandchildren.

Of course, it's hard to take care of yourself without money in the bank, so even if you're not enthusiastic about making and selling music videos, you'll compromise just to keep food in your stomach. As you wheel and deal over your video phone with an animated cast of music video buyers back on earth, you'll quickly learn the difference between a hot video and a dud (Figure 3).

Conversations are one of the most deceptively difficult aspects of an interactive game. Joe Sparks' first game, *Spaceship Warlock*, attempted to let the user type in responses. But as has always been the problem with this approach, trying to find exactly the right word or phrase can quickly frustrate the player. *Total Distortion* takes a more structured and effective approach, giving the user up to four choices when making a reply. Yet

even with only four choices, the number of pathways can quickly increase. Clever writing becomes critical, not only to limit the exponential growth of conversation pathways, but also to leave the player satisfied with the result. For the most part, *Total Distortion* does very well working within these limitations, so that conversations seem natural and spontaneous.

Details, Details

Because of the depth of the game, *Total Distortion* could stand on its own without the TDVS. It is possible to spend hours inside the protection of the "Media Tower" exploring its four floors and the extensive library of "books" that contain all manner of surprises within them. Some people may wish that more of the game play had been allocated to things outside the Media Tower, rather than inside this library. My opinion is that the library reflects that human being thing again. It provides an opportunity for cu-

riosity and whimsy to have their way in a non-threatening environment. If you are in the mood for life-threatening adventure, exploring the Distortion Dimension will provide hours of entertainment. Whether you stay inside your tower or venture out into the Distortion Dimension, you'll be challenged and entertained. When you do venture outside your tower, your challenge is to not only survive, but to capture footage with your Jumpcut video camera for your music videos. If you pass out because you didn't take naps, and then someone steals your video camera, don't blame me!

Passing out from lack of sleep is one example of the capricious detail that has been incorporated into this self-contained world. Until you master the game, it will alternately frustrate and delight you. During one game session, I had ventured to the farthest regions of the Distortion Dimension and returned to my Media Tower only to discover that



Figure 3

the electric door would not open! I was trapped outside because I had not maintained my tower fuel supply and the electricity had run out. When I finally figured out how to force open the door, the inside of my tower was blacked out. Only very faint outlines in the darkness enabled me to navigate. When I loaded new fuel rods in the tower generator, the lights didn't immediately come on. First the fuel flashed and sparked in the darkness, then a moment later the lights came on. This detail and care in *Total Distortion* is the result of several years worth of creative effort, none of it half-way. Right up to the last minute, Joe Sparks and company at Pop Rocket kept

adding and refining elements of the game. (Never a dull moment for the testing department!) I am sure that if Christmas came in April they would still be working on it.

Parents should know that the game carries a 13+ age rating. There are a few instances of mild profanity, and eventually you will run into a racy latex-clad punk rocker. The game has no nudity and there is no violence directed against human beings. Very conservative Christians may be offended by the demonic imagery in the game. For most people, the imagery is just Halloween on steroids. Personally, I have no reservations about sharing the game with my 13-year-old nephew.

As with any multimedia title, you need a minimum level of hardware for acceptable performance. For Macintoshes, you need an 030 or better machine with at least 8 megs of RAM. For Windows machines, a 486 or better with at least 8 megs of RAM is required. Your system should be capable of displaying 256 colors and have a CD-ROM drive. External speakers will greatly enhance the game, because sound effects and music are such an integral part of the design.

Rosendo Gonzalez is a multimedia writer/designer. As part of Pop Rocket's testing team, he was the first person to play the game entirely through and win.

Dust

Adventures on the Digital Frontier

by Julie Bernstein

You enter the lonely desert town a stranger with no name, no money and no gun. In the distance, a coyote howls. The local drunk staggers toward you, challenging your presence between swigs from his jug. A menacing hound stubbornly blocks your advance. You begin to wonder if you made a wrong turn at Albuquerque, but the town of Diamondback has bigger plans for you.

So begins the game of *Dust: A Tale of the Wired West*, an interactive adventure from CyberFlix. Far from an ordinary action game, *Dust* challenges you to play the lead part in a movie whose plot is constantly changing according to your actions. The story, graphics, and sound combine to make this one of the most unique, challenging, and enjoyable adventure games you're likely to find.

Exploring the Terrain

Entering the world of *Dust* is very much like watching a movie, from the scrolling credits and scenery at the beginning and end of the adventure, to the superb musical score throughout. The difference is that you get to interact with the large cast of characters, each of whom has a distinct appearance, personality, and special role in the plot—not to mention an often amusing name, like Cozimo Macintosh or Buick Riviera. The citizens hail from all parts of the globe, yet even in this unenlightened frontier town they seem to share a rough equality, suffering through the crime and heat of Diamondback together.

Basic game play is simple. The keyboard is your feet, and the mouse is your hands. You can move forward and turn left



Inside the dry goods store, Marie Macintosh awaits your company.

and right, but you can't move backwards, an unfortunate limitation which makes things particularly difficult if you need to turn around and head back quickly.

Clicking on an object allows you to pick it up or examine it more closely; clicking on a character engages you in conversation. Your inventory displays full color pictures of the items you carry, each of which you can examine in further detail at any time. A map is always handy, as are controls for saving and opening games and setting the volume level (which is unfortunately set to the maximum whenever you start up the game). However, there is no indication of your health status, which would be very handy to

know during certain critical parts of the action.

As you walk through the streets of Diamondback, the characters, called "puppets" by the game's creators, appear as three-dimensional animated cartoons. From a distance, their features are fuzzy, yet distinct enough to allow you to recognize each character. Once you enter a conversation, the puppet comes to life; you are now interacting with a digital reproduction of a real human actor. The characters do cycle through prescribed gestures, and movement is not fluid, but the illusion is entertaining nonetheless. You are not watching a preset movie, but a combination of movements and dia-



Mayor Macintosh patrols the town streets.

logue appropriate to the character and the current situation.

Your conversations in *Dust* are not free-form, but not fully scripted either. You are given a choice of what to say from several options presented, and the statements you choose can determine not just the drift of the current dialogue, but the flow of the game as a whole. Sometimes the words seem forced; the programmers had to retain enough control to maintain the integrity of the game. However, you usually have enough freedom to make your own decisions, which can sometimes prove deadly if you're not careful. Yes, you can die in *Dust*, in many different ways, so it's advisable to save your game frequently to avoid having to backtrack through days or weeks of play. Sensitive players should also be warned that some

of the characters' language can be colorful; this is not a children's game.

On the Quest

The *Dust* adventure runs over a five day period, asking you to accomplish certain goals—such as finding a hotel room for your first night's stay—for the game to advance from morning to afternoon and evening on each day. Unlike many other games, in *Dust* you can achieve many of these goals in more than one way. Far too often an engaging, challenging adventure becomes useless once the game is complete; once all the secrets are learned, there is no more entertainment value. Not so with *Dust*. Your decisions constantly affect the flow of the game; take a different course as you alter the course of the plot. While the major goals

themselves are static, your game play need not be.

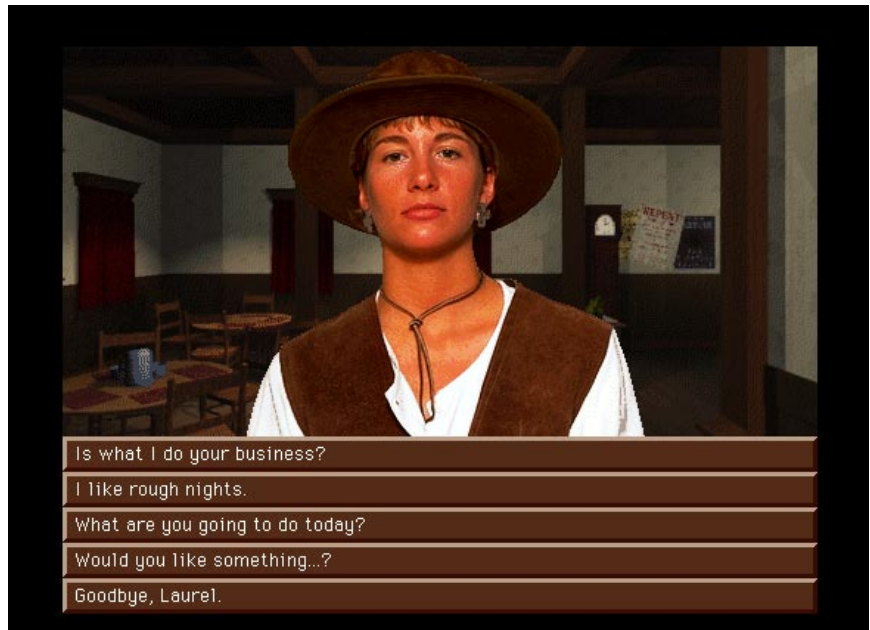
While following the story line is important, *Dust* provides many diversions to both entertain and sharpen skills along the way. Blackjack, checkers, and target shooting are among the activities scattered throughout the town. These games are generally well-implemented; some could be decent stand-alone applications in their own right. A note on the games and other objects in *Dust*: Manipulation often requires some degree of manual dexterity. To play a slot machine, you actually have to grasp the handle by its end and pull down. To operate a combination lock, you have to turn it in the proper direction and at the proper speed. These features may slow down the action, but they add to the realism.

The goals in this adventure are rarely simple to accomplish, and they get harder as the game progresses. So what happens if you get lost? There is an Asian shop owner named Help whom you can visit for advice, but he doesn't quite live up to his name. Most of the time he will refuse to give you a hint; when and if he does finally give in, make sure to take advantage of his short-lived generosity. Otherwise, be prepared to be stuck for even longer. If you're willing to pay more money, you can buy the official strategy guide from Prima Publishing. If you have Internet access, you can also check out the newsgroup alt.games.dust; this saved my sanity at least once during a particularly tricky episode. But the best advice I can give is to play with a buddy; it's more fun, and you'll be less likely to throw a brick through your monitor.

Sights and Sounds

The artists of Dust have created an impressive visual presentation, in which even apparently minor objects are carefully rendered. Most striking are the various written documents that appear throughout the adventure. Authentic-looking illustrated books, maps, and handwritten pages show meticulous attention to detail. These pages aren't just for show, either; you must actually read and understand the information presented in order to succeed in the game. Also noteworthy are the animated interludes, showing scenes of the town while the narrator brings the story up to date. These pauses in the action allow for more expression and detail than is possible in the normal town view, which is constantly being updated as the character moves from place to place.

The audio quality of Dust is excellent. Dialogue and sound effects are clear and sharp, and can be heard simultaneously with the background music. Some music even becomes louder as you come closer to its source; walk by the tavern and you can hear the piano playing softly; go through the swinging doors and you hear the music at full volume. The soundtrack is appropriate to the situation at all times, from the sparse guitar chords as you roam the streets to the incessant drumming and flute sounds as you quest for lost Indian artifacts. The gunfight showdown music is particularly memorable; you'll think



Watch what you say to Laurel, or you may find yourself in grave condition.



Care for a game of five card draw?

you're right in the middle of an old Western. The music did suffer from some gaps on my Centris, but these were much less frequent on my friend's Power Mac. Make sure to install the latest version of Sound Manager (3.1 as of this writing) for best results.

System Requirements

All this animation and sound has its price: Dust is a real memory hog. It re-

fuses to play with less than four megs of RAM devoted to it, and prefers to have twelve. Forget about using RAM Doubler for this one. I was able to get it to work on my 8-meg Centris by running it off a minimal System 7.1 installation on a partition of my external drive. It worked alright on my friend's 16-meg Power Mac 6100/66 without such fiddling, but there was no memory to spare for anything else. Unless you have a real powerhouse, don't

plan on casually playing Dust while using Word to do your homework—or TeachText, for that matter. It will take all the power you've got.

Although memory definitely made a difference, a lower CPU speed didn't seem to have much of an adverse effect. While I wouldn't advocate playing Dust on an LC, the animation seemed equally smooth on my 25 MHz Centris and the 66 MHz Power Mac, with the exception of a few sound dropouts on the former. The officially stat-

ed minimum requirements are System 6.0.7, a 68030 processor, 8 megs of RAM, and a double-speed CD-ROM drive.

Summary

Dust is an exciting and challenging adventure game. Prepare to be hooked for days or weeks as you puzzle through the plot, and prepare to have a lot of fun doing it. ㄨ

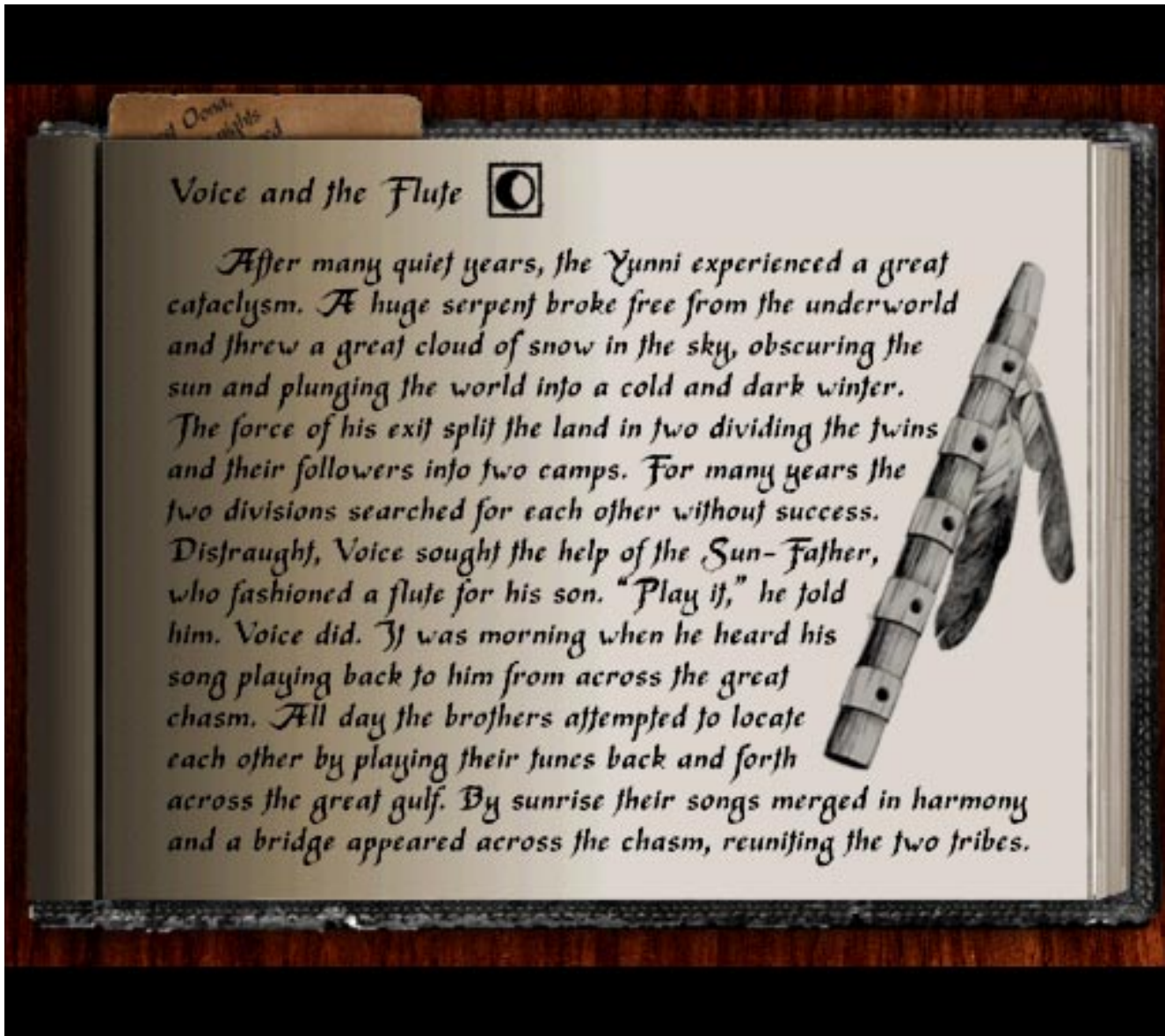
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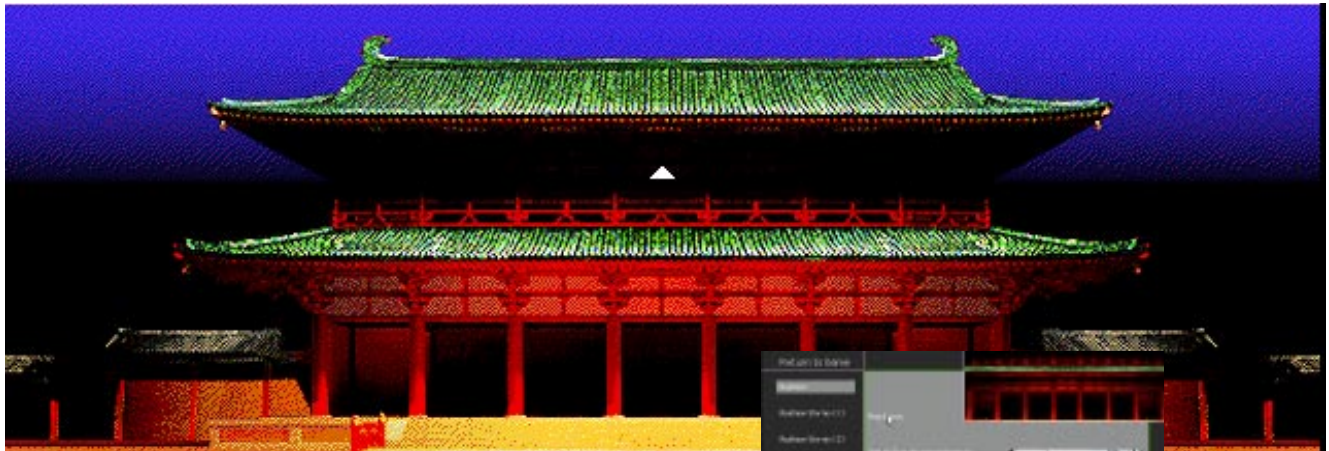


Study the legends well, and you will prosper.

Carnage in Kyoto

Ancient Kyoto Comes to Life and Death on CD-ROM

by Emeline Mann Sanchez



One of the entrances into the confines of Heiankyo as seen in the game (above) and in its encyclopedic reference (right).

When I was little, my sister and her friends let me tag along when they went to see Japanese movies at the only Japanese theater in San Francisco at the time. (The theater space has since been taken over by Denny's Restaurant.)

All the movies we saw back then were ghost stories set in medieval Japan (my sister loves period horror movies). The ghosts were mostly long-haired women, and usually either they or their victims were done in with a sword or a blade. Their bodily fluids either seeped out steadily or sprayed out in a fountain à la *Shogun Assassin*.

The concept of death was a very intricate part of life in ancient Japan when Buddhism reigned strong. You can get a glimpse of this in *Cosmology of Kyoto*, *Tales of the Heian Millennium*, a Japanese-English bilingual interactive game that comes with an encyclopedia reference mode. The encyclopedia portion has some 400 entries relating to this historically based game. It's a horribly interesting game, beautifully rendered in the tradition of Brøderbund's *Myst*. And de-

pending on your philosophical bent, the game is either hugely flawed or incredibly awesome.

Japanese or English, Operation Requirements, Parameters, and Such

You can play the game and use its encyclopedia reference in either Japanese or English. I wish this game had a preference setting for the language so that you didn't have to choose it each time the game launched. KanjiTalk or Japanese Language Kit is required for the Japanese mode. If you launch the game in Japanese without the proper utilities, you will find that you can't quit with Command-q, and there are no pull-down menus or buttons that allow you to quit. The encyclopedia reference mode does have a button you can click to quit.

I froze and bombed several times on my PowerPC 7100/66 and had to fiddle with my extensions and control panels to get the game running. Recommended operating requirements are a 68030 or faster



CPU, System 6.0.7 or later, QuickTime 1.5 or later, a

256-color 13" monitor, 4 megs of available memory, and a CD-ROM drive (preferably dual-speed).

Included with the CD-ROM is a fold-out map in Japanese and English (I found the map in the game more useful though, since it showed exactly where you were at, and where you were heading), a sheet with a description of the main windows and the functions of various buttons, and an Operation Guide with tips on how you should handle certain situations within the game.

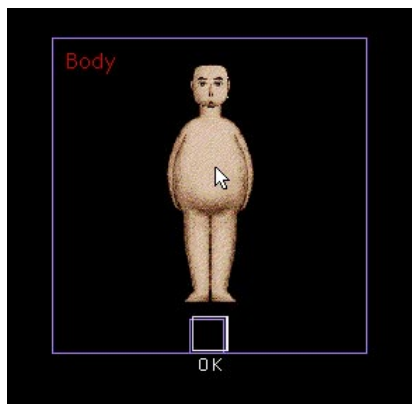
Before you commence the actual game playing, you must define personal parameters. First you type a password so that when you save your progress in the game, no one else can tamper with it. Next, you decide whether you'll play as male or female, single or married. There's some debate amongst myself and other players as to whether these choices affect how the game is played out. The fact is,

each player experiences a different game. But, back to the game.

You get to configure your face with a variety of noses, lips, eyes, eyelids, and face shapes to choose from. For whatever reason, they ignored the ears (I don't know why, since Japanese are familiar with pointy Vulcan ears, long, hanging Buddha ears, or even Dumbo ears). Finally, you choose your body shape. Once you "OK" the body selection, you get a music-accompanied introduction to the journey you are about to take.

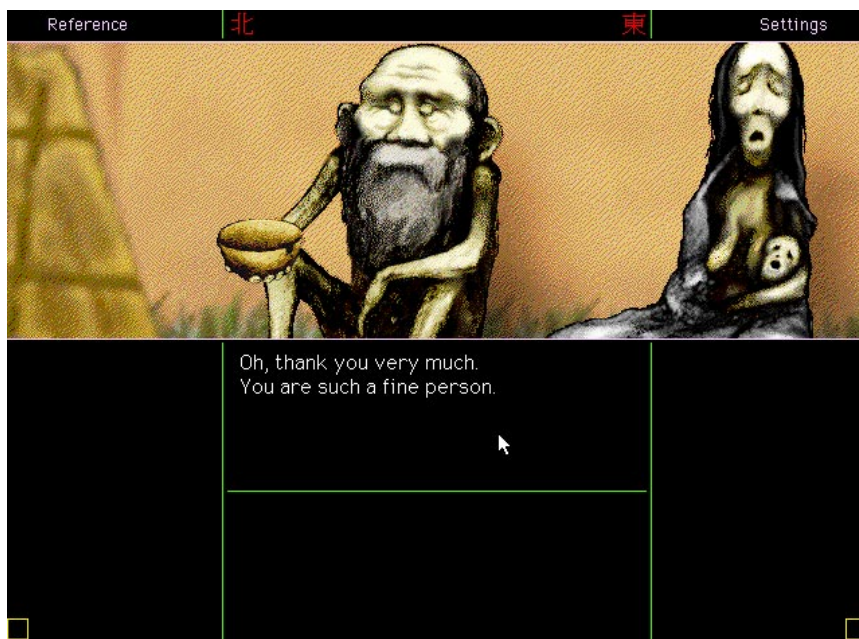
The intro music was disappointing. Except for a small section where you might hear some prayer bells and a synthesized string instrument—shamisen or koto maybe, most of the soundtrack sounded suspiciously *Myst*-esque. For repeat game players, there ought to be a keyboard command to bypass this narration. Right now, all you can do is speed up the text by dragging it upwards.

On a technical note, the interface is not consistent. Sometimes you can hit Enter, or Return, to proceed to the next window, but other times you have to mouse-click the button. Other inconsistencies occur during your body-defining dialog boxes. If you click on the *word* Nose, you see a new nose. If you click on the *picture* of the nose, you see a new nose. However, you can only click on the *picture* of the body to see the new body. Clicking on the *word* Body (in the Body sub-window) does nothing.



Point of Departure

The game takes place a thousand years ago (or some such time) in Heiankyo, "The Peaceful and Tranquil Capital," now known as Kyoto. But far from what the name Heiankyo stood for, the reality was a land of angry ghosts, goblins, and devil spirits. This was because



One of the many characters you can interact with.

Emperor Kammu, who "built" Heiankyo, achieved power by unsavory means, including the elimination of many political rivals.

Even though the city was born cursed, its culture flourished to a climax as portrayed in *The Tale of Genji*, said to be the world's first novel, written by Lady Murasaki. There's more historical fun facts in the narration or in the encyclopedia reference mode which you can switch to, temporarily leaving the game. The only fault in this mode is that some search categories takes you all the way back to the beginning of the list after you've selected a topic and want to select another.

The Journey

You start out in a grassy field outside the capital walls. The grass rustles in the wind, and there's faint sinister laughter in the air. Before you can enter the capital, you really need some clothes and money. You can acquire a mirror and see that, yes indeed, you are in the buff. When you are able to enter the capital, you meet animals, beggars, warriors, sinister doors, Buddhist priests, devils, whatever characters were typical to the period. The characters speak Japanese, and English subtitles appear in the area underneath the speaker. Sometimes you will need to 'talk back' to the character. Mostly, you answer 'yes' or 'no.' The translations work with the feel of the game but are at times, shall we

say, creative. *Gomen*, for example, usually having the meaning of 'pardon me' or 'excuse me,' appropriate when stepping on someone's foot, was translated to 'fare thee well.' But then, we've all seen *Godzilla* movies, so we understand how Japanese to English translation works.

By clicking arrow keys you travel in various directions, open doors, move objects, or tap a character to come closer. You interact with the characters through conversation, by giving them money, or defending yourself from them. In the latter case, hopefully you'll have some implement to defend yourself with, or maybe one of the other characters will come to your rescue.

The Japanese Heian period believed in the connecting of the human world with the greater natural world. That one can die and be reborn many times over, carried only the unknown of whether one went to Heaven or to Hell, as written in the Buddhist texts. So don't be surprised if in the course of your journey you find yourself faced with death. Many deaths. Sometimes you can avoid death by being prepared, or just avoiding suspicious characters or situations; other times you have no choice. Each death is different and depends on your karmic points. You can access the encyclopedia reference to read more about the history behind each particular death. You will then experience Heaven or Hell. Each trip to either extreme is different.



You can find a respite from hell with the help of a Buddhist priest.

This is what makes this game interesting. You never know what's over there on the other side. It could be horrifying—it could be beautiful. Obviously (for me at least) beautiful is Heaven in bright colors, floating flowers and soft clouds, or the great priest whose shining presence takes you outta Hell.

I'm a wimp. I hated dying. I hated that telling noise that accompanied my demise. I hated the screen fading to red. I hated the ugly monsters/devils I met down yonder, no matter how fancy their regal clothing or how ornate their bodily attachments. I didn't get as far as playing a game of backgammon with the devil, but I'm not too sure I could look forward to such a thing. I hated traveling through different levels of ever miserable Hell until rebirth, and even then, I hated the dried-up thing that awaited me on my return to Earth.

Maybe if you're a Buddhist, it's a karmic moot point. You just deal with it. And enjoy the game. And enjoy the living. In my travels in Heiankyo, I encountered all kinds of people/living things, in all kinds of situations. It was interesting to see little boys in the streets playing at what seemed like the precursor to golf. It was nice to see the universe, thanks to Buddha. It was fun to meander along a flowing stream, or visit different street vendors in the market place. If you had the money, you could

purchase anything from rice, straw sandals, or even a bow and arrow set. It's not all horrible.

The Bottom Line

This game is definitely not for the faint at heart. Some deaths are rather graphic. Parents might want to take a look before letting the kids play.

The goal to achieve Pure Land Paradise is prefaced by all manner of Hells. If you can be really open to a different culture in a different time period, it's quite

an adventure. If you're a Buddhist priest, maybe you'll even think this game is hysterically fun. The first Buddhist priest I ran into (in the game), was lovely. His countenance and conversation reminded me of a former Buddhist priest that I do know in real life.

If you're like my sister, you'll think *Cosmology of Kyoto* is cool. The graphics are beautiful, especially the heavenly sites. The encyclopedia mode is top notch with entries that are bound to surprise, amuse, and educate you in a culture that we hear a lot about, but don't get to experience. A Windows version of this game is being developed, so prices for this bilingual interactive game may be dropping as of this printing.

Look into the Newsletter's CD-ROM for a demo of this game. ㊄

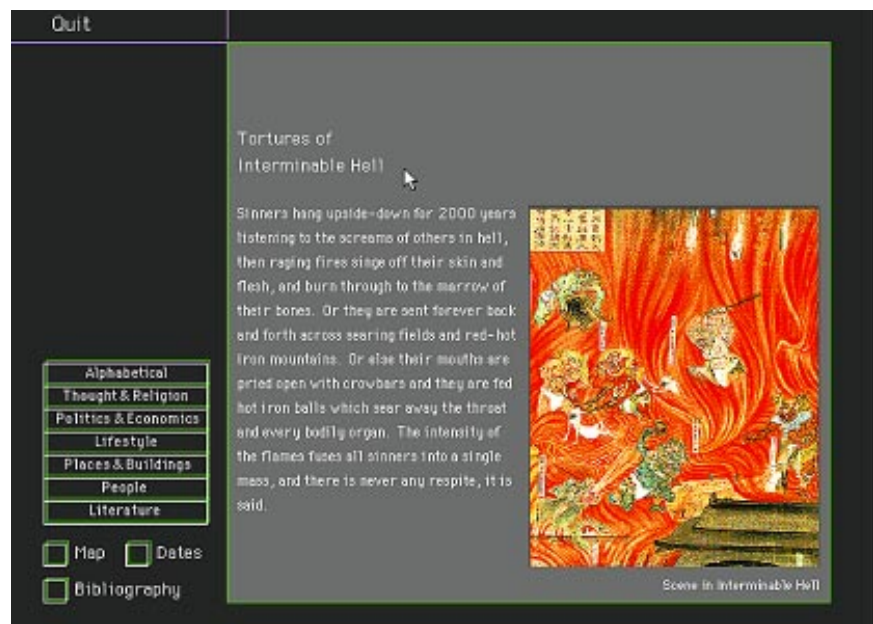
Cosmology of Kyoto

Tales of the Heian Millennium
 Directed by SOFTEDGE, published by YANO Electric Co., Ltd.
 2-7-12 Otsuwa
 Nishi-ku, Kobe 651-21 Japan
 Tel: 81-974-2931
 Fax: 81-78-974-4021

Stone Bridge Press

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 Berkeley, CA 94707
 1-800-947-7271

Thanks to Len Fujita, Silicon Valley hermit and Chidori band member, for his contribution to this review.



An encyclopedic reference to one of many hells you may encounter.

Cheap, Simple, and Relatively Nonviolent Games for My Mac

by Deborah Pulliam

I have a few games on my Mac, but I've found that very few hold my attention for more than a few months—no matter how enthralling I find them initially. So I find myself checking BMUG Boston's Games and Fun area periodically for new amusements.

I don't have children, but I do have some young friends who come by to play, and I often look for things they can enjoy as well. Like some people, I've found myself avoiding games that score by killing. I realize it's only pixels, but after reading the newspaper and hearing the news on the radio, I don't want more violence—no matter how "harmless."

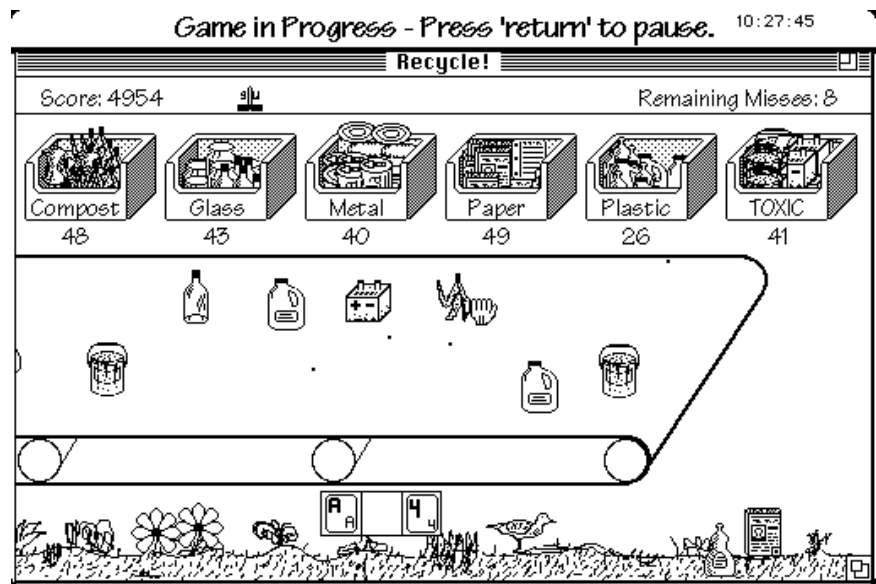
With that in mind, I've found there still are some pretty funny, challenging, and amusing games available that can provide the necessary diversion, where cost has nothing to do with quality. I still work on an SE/30, so these all work in black and white, and they tend to be small. (You really didn't think someone looking for small Shareware games would have a brand new Power Mac setup, did you?)

So here's my sampling of free/cheap, nonviolent Mac games you can find on your friendly local bulletin board.

Recycle!

387k, \$10 Shareware Fee

Being an ardent (some say even rabid!) believer in recycling, this one appealed to me just by its title. I was pleasantly surprised by what I found. It's a



Recycle!

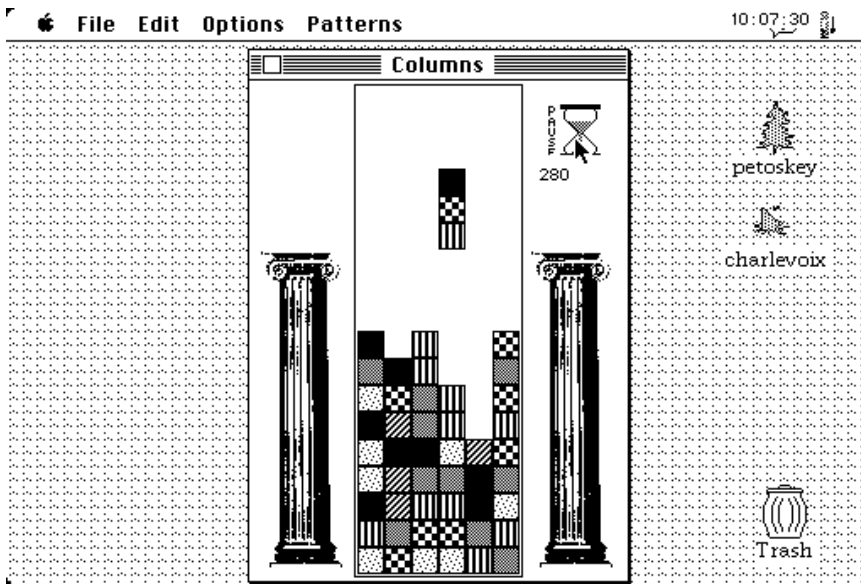
simple idea: items of recyclables come along a conveyor belt, which you have to pick up (with a gloved left hand) and place in the proper bin above. Seems easy, but when I first unstuffed the game and started playing it, I found myself half an hour later with my eyes watering from staring at the screen, hand cramped around the mouse and aching, desperate to get those last banana peels into their bin.

I think what grabbed me first was the exceptionally life-like sounds the items make as they drop in the bins: metallic clank for tin cans, the crash of glass on glass, bouncing plastic bottles, the squish of banana skins on apple cores,

heavy thump of car batteries. Each recyclable—compost, glass, metal, paper, plastic, and toxic (car batteries and paint cans)—has two icons, and you get a point for each one in the right bin. A subtle cough lets you know if you miss the bin entirely, and a shout of "wrong bin" tells you if you put it in the wrong one.

The game is well thought out; if you miss with either the paint can or the car battery—and put them in any other bin—you lose all the points for that bin *because it contaminates all the other stuff, right?* Kids pick these things up fast.

There are various other bonuses. If you pull a flower off the belt and plant it



Columns

underneath, you get a trumpet fanfare worthy of spring and a 350-point bonus. But, eventually the belt's going so fast you can't grab everything. When 15 items fall off the end, the game's over.

I like the fact that the documentation has information on recycling in your home and advice on finding recycling centers in your area. It may seem obvious, but the message probably will get through.

Columns

284k, \$7 Shareware Fee

This program is similar to Tetris, in that you manipulate boxes (in this case, three at a time) that fall to the bottom. They usually fall in a vertical column; with the J, K, and L keys (which can be reset to whatever keys you choose) you can change the order in which the boxes fall and in which line they fall. The Space Bar makes them drop immediately. You score each time you line up three in a row, vertically, horizontally, or diagonally. When you score, the blocks disappear. Sometimes this lets other blocks drop into position for a score, and you can set off some interesting chain reactions.

I had been playing an earlier version of Columns, which at 77k was the smallest, but one of the most satisfying I've played—particularly over a long period of time. I'm not sure if I like the upgrade that much. The blocks fall horizontally sometimes, and there's a new bomb that makes unpredictable changes in tiles. The

newer sounds are pretty funny, though (I really like weird sounds in games. Can you tell?)

For a very simple game, this one is remarkably satisfying and mesmerizing—and much cheaper than Tetris!

Accordion

44k, No Fee

This is another tiny, but intriguing, game, based on playing cards, although I don't know of a solitaire game played quite like it.

13 cards are laid out from right to left. If a card matches the first or second card to its left, either in suit or in rank, you can click on those two, and the one to the left disappears. The object is to get down to one remaining card. It can be done, but not often!

No flashy graphics or wild sounds, but this one can hold your attention for a long time. It may not appeal to children who are looking for more sparkle and action.

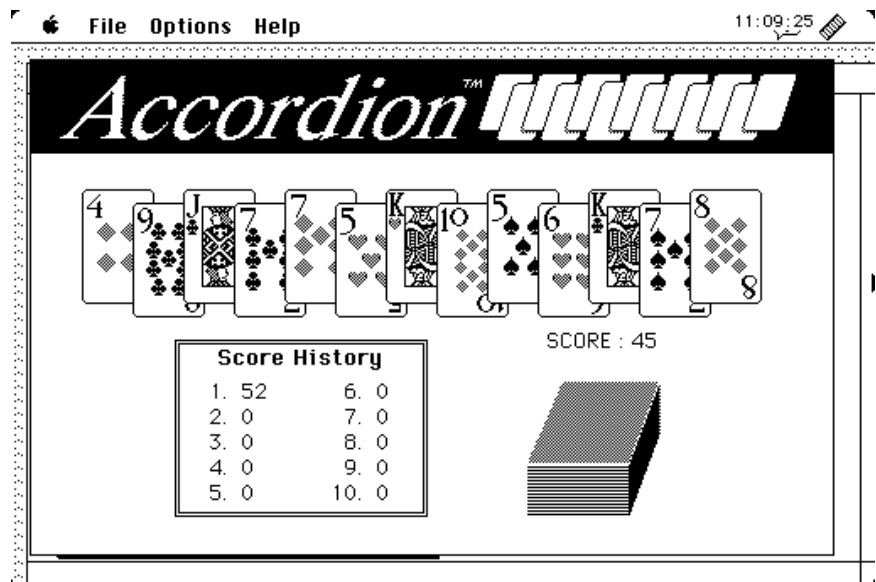
Spacestation Pheta

300k, \$9.95

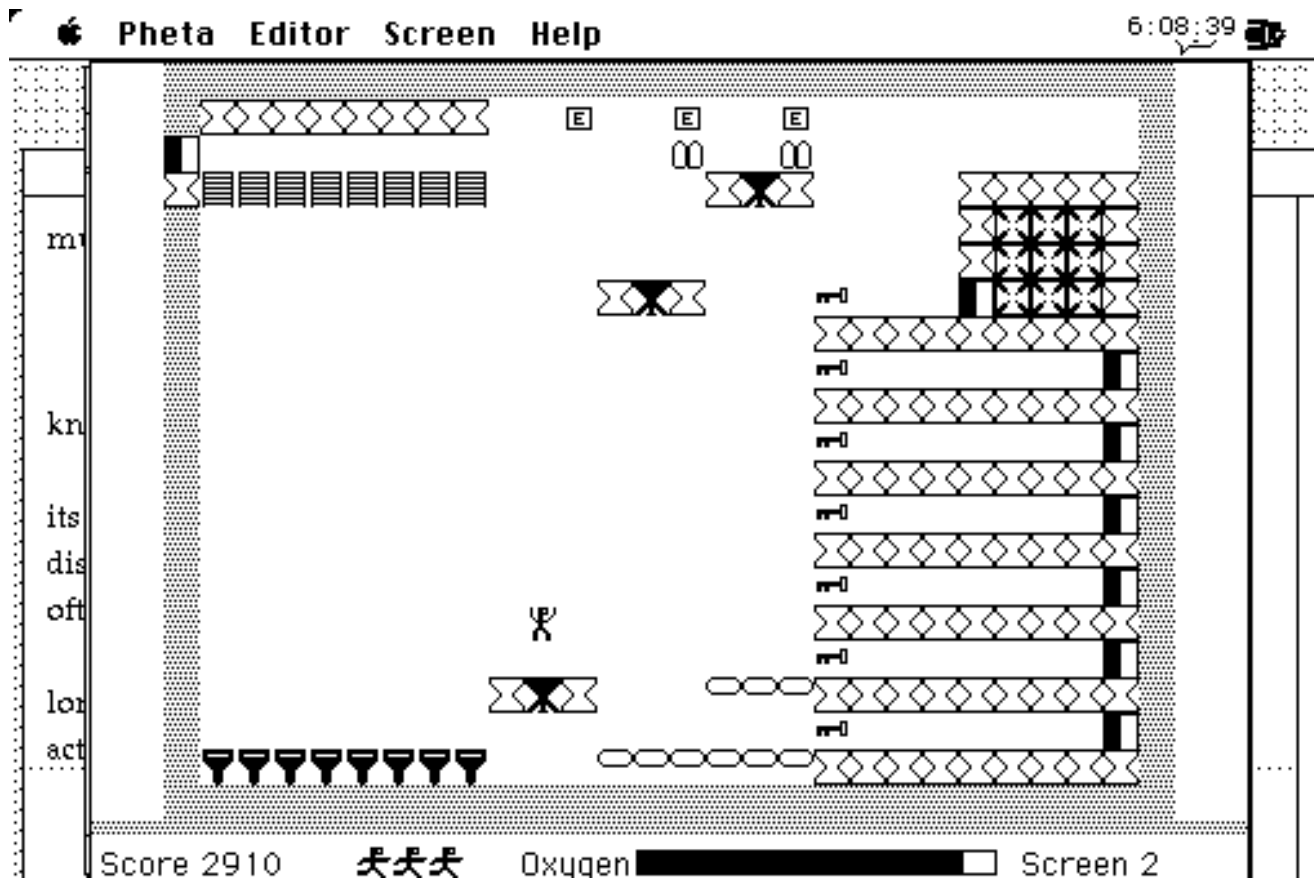
I had forgotten how much I liked mazes when I was a kid, until I started finding computerized ones like Spacestation Pheta. This is another one I found, and played consistently until I had solved all 100 "screens" or levels.

You're the space man, and you have to get from wherever you start on each screen to the exit at the farthest right by climbing, jumping, bouncing, using elevators—whatever. There are booby traps along the way, and you have to work fast enough so that you don't run out of oxygen—and collapse in a heap on the floor.

And granted, this one is not entirely nonviolent, if you count the realistic "splat" you hear if the space man falls off something—or the noise that means you've fried yourself on the power grid—but at least you don't have to shoot at



Accordion



Spacestation Pheta

things to get by, or kill anyone/thing that gets in your way.

The screens get progressively more difficult and ingenious as you go along, and solving all 100 of them took me several months in my spare time. The newer version comes with a new set of screens, called “Big Cheese.”

The kids who tried it really seemed to like it, and only occasionally succumbed to having the game show you how to solve a new screen.

The Shareware version plays the first 10 screens, and paying the Shareware fee will get you a registration number that will unlock the other 90 screens for you—plus a set of new ones. A screen editor is also included so you can create your own.

Oxyd

453k Plus Files, \$42 for Book

Another maze-type game, this is certainly the most sophisticated of my small finds, but it’s well thought out and a lot

of fun (if frustrating). It must be spectacular in color!

For some reason, air is disappearing at a rapid rate, and on each screen, you have to use a marble to tag icons in the right order to open Oxyds and release more air into your environment. You get a terrific realistic whoosh of air each time you succeed. This, according to the documentation, is what will keep the sleeping bytes in your computer alive.

That’s what you’re aiming for, but each “environment” is an increasingly complex and imaginative maze, requiring your marble to turn things off and on and set off bombs to get past walls and move things around to gain access to the necessary icons (it’s not totally non-violent, but again, at least you don’t have to shoot other creatures).

What I found most interesting was the surface texture the marble rolls around on. They range from glassy smooth to concrete and bricks to very rough basket weave, all of which affect the speed with

which your marble rolls. You go too fast, you lose control! If you roll across mud, you’d better move fast, too, because you’ll sink out of sight, never to return. And marbles don’t float well on water, I’ve found.

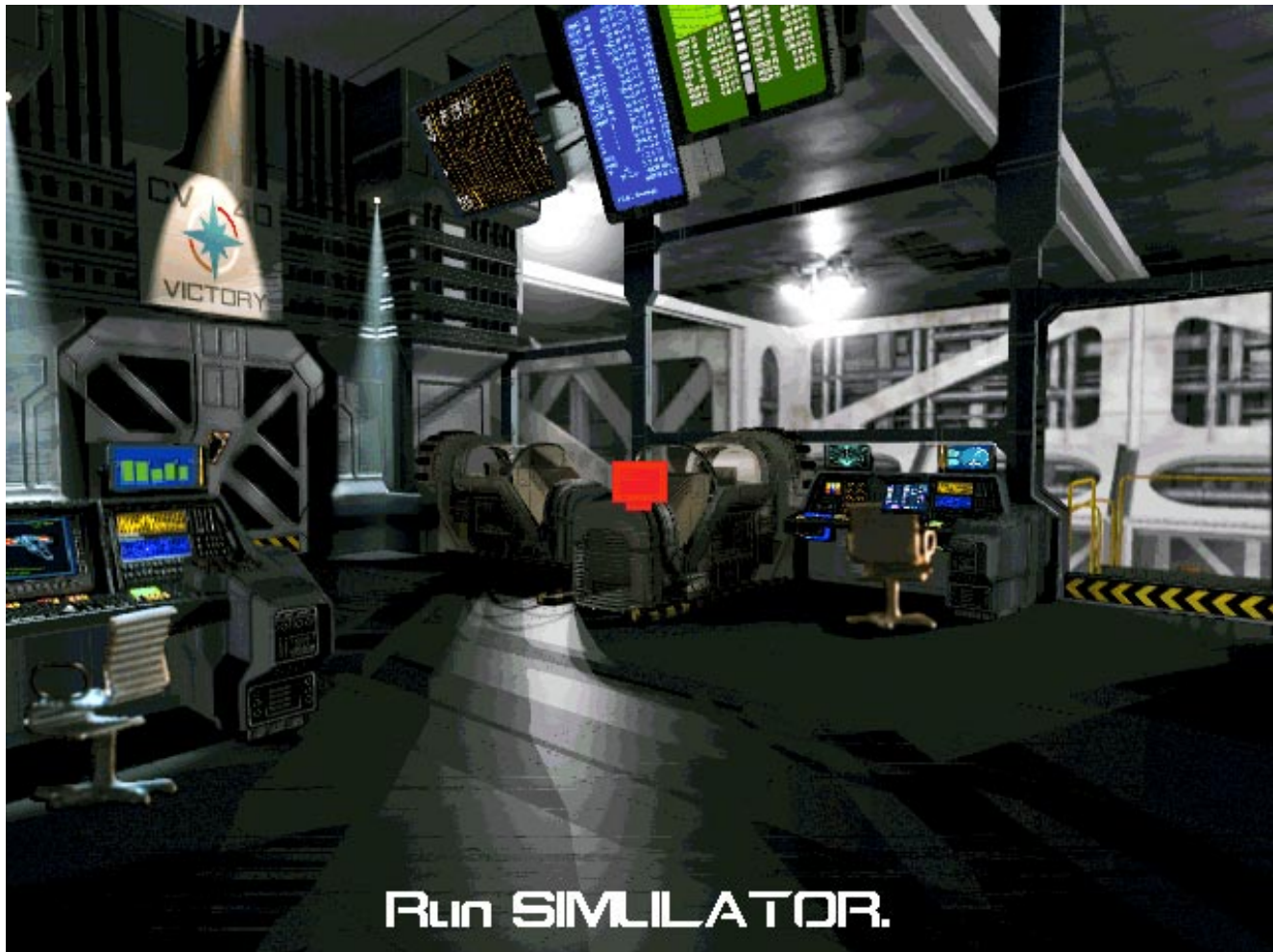
You can work through the first 10 levels, but beyond that, apparently you require a \$42 “manual” for more hints and codes to allow you to play 200 more environments. So far I’ve balked at buying that expensive a book, but I’m tempted! 🐘

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Wing Commander III

It's Big

by Frank Araullo



Wing Commander III: Heart of the Tiger caught the eye of many last year with its generous use of live-action video to augment the theme and storyline of the game. Origin Systems called in some big-name talent to help with the performances: Mark Hamill, Malcolm McDowell, and John Rhys-Davies lent their acting skills to the production. So I was intrigued by the Macintosh version which hit the

shelves this past fall, and what I found was pretty big indeed.

Wing Commander III follows the exploits of a fighter pilot in an interstellar war. The Terran Confederation (us, the good guys) have been fighting the evil forces of the Kilrathi Empire. The Kilrathi are a warrior people who evolved from cats without losing the desire for a good hunt. Wing Commander III takes up the story in the middle of the war,

with the Terran Confederation struggling to repel the advances of the Kilrathi. The user assumes the role of Cornel Blaine (played by Mark Hamill), who has been assigned to the TCS Victory as the commander of the carrier's fighter wing. The story revolves around your ability to fulfill mission goals, so it's advisable to save often and to different game files. The user is encouraged to interact with characters onboard the Victory between missions.



While the interaction is a very simple “yes or no” decision system, much of the direction of the story and combat hints can be gleaned these dialogs.

The flight graphics are superb, some of the best that I’ve ever seen. The texture mapping is lost in the chaos of combat, but the cockpit design and rendering of the fighter craft were beautiful, and pilot interaction amended with bits of live video. All of the flight graphics are fully rendered as 3D objects instead of the scaled bitmap images used in earlier Wing Commander games such as Super Wing Commander. The flying craft and large spaceships were redesigned from scratch and are far and away superior to the original ships of the Wing Commander series. The sound effects enhance the combat experience, and the music was quite original. I wish that the enemy pilots were more challenging, but the composition of the flight scenarios more than compensated for this weakness.

Wing Commander III is big in most other respects. It spans across four CD-ROMs in linear order, which minimizes the CD-ROM swapping. Unfortunately, the game requires a Power Macintosh to run; owners of 68040s are out of luck. Wing Commander III requires a minimum of 5.5 Mb, and will gladly use more if allowed. Oddly enough, Wing Commander III also requires that a L2 cache card be installed as well. I never got a chance to pull the cache card out of my Power Mac to see the effect of its absence on game performance, but this requirement isn’t terribly stringent since cache cards are standard on most new Power Macs and popular add-ons to those Power Macs initially sold without one. And with most action games, a joystick is all but a necessity with Wing Commander III.

Wing Commander III is plenty of game in one package. I’m happy to see that the effort on the live-action video cut scenes didn’t dilute the quality of the combat simulation. Wing Commander III is a pretty big deal and for very good reasons, indeed. 🦁

**Wing Commander III:
Heart of the Tiger**
Origin Systems

Warcraft

Two Sides of the Same Coin

by Frank Araullo



Imagine a world of two conflicting sides, one bent on conquest and continual glory in battle, the other fighting for peaceful existence. That, in a nutshell, is the premise of Warcraft: Orcs and Humans. The game is set in the fantasy land of Azeroth, which has enjoyed a longstanding peace under a wise and benevolent king. All was well, almost to the point of boredom, until a dimensional rift conveniently opens, allowing hordes of evil Orcs to pass

through into Azeroth. Ruthless and vicious, the Orcs were almost ready to turn upon each other when the rift opened, giving them yet another race to conquer.

The player can pick either side to lead against the computer and the game allows for two human-player games. Each side goes through variations on similar missions with the ultimate goal of defeating the other side. While the Orcs are portrayed as minions of evil

and chaos, Warcraft makes it acceptable and fun to be the bad guys. The two sides are roughly balanced, with differences in abilities and tactics according to their character. The fundamentals are the same for each side: develop resources and labor to raise an army, and lead that army against the enemy. There are farms for food, mines for gold, and forests for wood, all of which in very finite quantities. One would need to train magicians and clerics, blacksmiths and peasants to



support the soldiers. The missions start out simple enough but soon develop into tough tactical nuts to crack, with each side having its own advantages.

The graphics of Warcraft are very well done. The icons for the strategic elements are drawn so that each is distinguishable yet small enough so that the close-up view is not restricted to an overly small area. The sound effects and music show a good deal of effort, and adds depth to the atmosphere of the game as it unfolds on the map in front of the user. The interface has bits of roughness left over from its MS-DOS origins (the continual references to function-key shortcuts, for example). But just about everything can be done very easily and smoothly with the mouse. The only serious difficulty lies in controlling groups of elements which can become critical when waging war on the opposition. The folks at Blizzard were very thoughtful in seeing that the Warcraft CD-ROM also carried Quicktime 2.1, Sound Manager 3.1 and a few other bits of official Apple software that the game requires for best performance. Warcraft also offers a list of performance-enhancing options to the user before starting the game.

Warcraft's two-player side is quite potent. Users are able to create a "network" version of the program for the purposes of two-player games in the same way that Bungie allowed Marathon users to create two-player situations. Two player games can be played over an Appletalk network or by modem, although one should use a high speed modem (9600 bps or better) for best performance. A network game with an IBM-compatible computer is also possible using either modems, a direct serial link, or over a network using the IPX protocol.

The folks at Blizzard have done a great job in bringing this game to the Macintosh. They managed to preserve the highpoints of Warcraft while adapting it so that it really feels like a Mac game. The flexibility of the game system is evenly matched by the flexibility and attention to detail found in the technical guts of the program. So go ahead and decide to be a dastardly destructively Orc or righteously civil Human; either way, you can't really lose. ☞

Warcraft: Orcs and Humans
Blizzard Entertainment

The Computer Museum Guide to the Best Software for Kids

by Cathy Miranker and Alison Elliott

Parents looking for alternatives to X-men and Pocohantas will be pleased to learn of *The Computer Museum Guide to the Best Software for Kids*, a lively new guide that recommends more than 200 great learning programs for children ages 2 to 12. The book is updated monthly with new reviews on the *Guide's* Web site (www.tcm.org).

You may be familiar with The Computer Museum in Boston since it's just down the street from the convention center that houses Boston's Macworld Expo every summer. But you may not know that The Computer Museum has introduced more kids to computers than any other institution in the world. And now it has captured this unique perspective in a new guide for children's software.

The best kids' software, according to the Museum, uses computer technology to create innovative hands-on learning experiences. If you believe the computer should do more than jazz up flash cards or repackage movies and TV shows, this book will help you find software that encourages kids to create, to experiment, to make choices and solve problems.

The Computer Museum Guide was developed in response to a growing wave of visitors' questions about good children's software for Macintosh, Windows and DOS computers. More and more families are buying software for kids, and at the same time, ever more kids' titles—all claiming to be educational and enter-

taining—crowd the store shelves. By becoming a resource for objective, down-to-earth advice to help parents select software wisely, the Museum believes it is extending its educational mission beyond the Museum's galleries.

Experts at The Computer Museum worked with the *Guide's* authors to develop the standards used to evaluate close to 1,000 titles. The best programs were turned over to families who tested the software at home. The real-life experiences and comments of these kids infuse the guide with insights that lets parents move beyond the industry hype to discover what really works for kids of different ages, interests, and learning styles. Where else, for example, can you learn that a program won't sustain a child's interest unless *you* stay involved? Or understand when a best-selling math game might not be right for your child?

The *Guide* organizes the best titles by subject and age to make it easy for parents to pinpoint software that's right for their kids. (You may know you want an art program, for example, but do you know which one is best for a 9 year old?) To help make buying decisions even easier, it rates every program, from a 4-star to a 1-star. And it offers a unique set of "Best Lists" such as "The Best Software for Your 6-7 Year Old," "The Best Software for Parents and Kids to Use Together" or "The Most Challenging Programs."

The following excerpts represent the diversity in the book. There are three 4-

star product reviews, each for a different age group. There are two 1-star rated products to show how we evaluate programs and differentiate a 4-star from a 1-star. Finally, there is an example from our new and notable section which is regularly updated on the WWW.

Excerpts include:

• How We Find the Best

A summary of The Computer Museum software evaluation standards.

These are applied consistently to every product we evaluate.

- Alphabonk Farm, Ages 3- 5, ★★★★★
- Imagination Express, Ages 5- 12, ★★★★★
- Myst, Ages 9 & up, ★★★★★
- WiggleWorks Vol. 1, Ages 3-5, ★
- The Treasure Series, Ages 5-9, ★
- Zurk's Alaskan Trek, Ages 5 - 9
New & Notable, No rating

How We Find the Best

What's best about the software in this *Guide*? Every product was measured against three criteria—learning, looks, and longevity—as well as the Museum's perspective on how kids learn best. To this evaluation, we added real-world assessments from kids and parents, based on their experience with these titles over time on their home computers. Our ratings—ranging from 1 star to 4—represent our opinion about how well a product measures up to these standards.

As we evaluated software, we constantly asked questions about the qualities we considered essential. We invite you to use our checklist when you take a look at products recommended in the *Guide*.

Learning

- Does this program fit your child's developmental needs and interests?
- Does it invite active participation, exploration, self-directed discovery?
- Does it challenge your child to think, to make choices and decisions that alter the outcome? To learn from those choices?
- Does this program use the computer to create a unique experience (or does it merely recreate an experience children can have off the computer)?

Looks

- Is this program's design and use of animation, sound, and video appropriate to its subject and to the age of the players?
- Does it have a distinctive look and feel? A sense of humor?
- Is it easy for a child to figure out how it works?

Longevity

- Once the novelty factor wears off, do kids continue to play this program over and over again?
- Does it present an experience that's different and more challenging each time your child uses the program?
- Does it provide the satisfaction of discovery and mastery, getting better at solving a puzzle, winning a game, completing a quest?
- Does it strike a good balance between familiar pleasures and new challenges?

The Best Titles: Playing to Learn

AlphaBonk Farm

★★★★★

As parents of preschoolers, we thought we'd seen the ABCs covered in every conceivable way. But *AlphaBonk Farm* surprised and charmed us with a delightfully different tour of the alphabet.

AlphaBonk Farm presents a farmyard alphabet through an inventive combination of photographs and bold graphics, quirky animations and ridiculous rhymes, twangy banjo music and alphabetically inspired "fun facts." An old blue pickup truck transports kids to the Picture Show, an alphabetically arranged slide show of farm-life photographs. Whenever an image takes their fancy, they can click to stop the show for a longer look.

The Gigglebone Gang of characters guides kids to other activities. Click on Velma the swine to hear brief tales about farm life and bits of "dazzling data." Click on Clyde the parrot to hear funny rhymes that reinforce letter sounds: "Outside you can smell the barnyard stink. Your mouth drops open and your eyes go blink." (Rich in preschool humor, this program has plenty of kid-pleasing references to "unmentionables" like underwear and manure.)

Just the Facts

Best for Ages 3–5

☆☆☆ for Learning

A novel look at the ABCs; skills include letter recognition, rhyming, auditory and visual discrimination

☆☆☆☆ for Looks

Highly original blend of photos, graphics and sound

☆ for Longevity

Lots to do so kids keep coming back

Worth Noting

If your kids like the Gigglebone Gang, try the Gang's second adventure in *Pantsylvania* (Page 226 [in the *Guide*]).

Macintosh CD-ROM

Windows CD-ROM

About \$35

Headbone Interactive

(800) 267-4709

Click on our kids' favorite, Bunji the frog, to jump into *AlphaBonk Farm*'s distinctive games. In Seek and Find, kids search a black-and-white line drawing for objects that begin with certain letters—like dilapidated truck, Doberman, dandelion. Find them all and the picture is transformed into glorious color. Even more engaging are the 13 offbeat Poke 'N Prod activities. In the "I Scream for Ice Cream Parlor," kids concoct towering ice

cream cones with all the trimmings. In the "X-Ray Lab," they examine the innards of different animals. And in U's upside down room, they help ripen an unripe peach and use utensils to cut it open.

The bottom line: enormous fun—and a great way to learn the sight and sounds of letters.

The Best Titles: Creative Pursuits

Imagination Express

★★★★★

The best storymaking program we've seen. Exceptionally beautiful, and easy to master at any age. It's got the uncanny ability to scale stickers to just the right size ... while your child is moving them into the scene. Best of all is its effect on kids. Just minutes into this product and they're bursting to tell a tale.

Take 5-year-old Sam's first encounter. Five clicks into the program, he discovered a unicorn and was immediately captivated. Next came a wishing well, followed by a peasant with a mysterious sack slung over his shoulder. By then he was "writing" (in pictures) fast and furious. To make his pages look like a proper book, he insisted his mother type (onto a beautiful parchment scroll) while he dictated. When they finished, it was way past bedtime. But he insisted on printing and "binding" his book so she could "read" it to his stuffed animals.

Just the Facts

Best for Ages 5–12

☆☆☆☆ for Learning

Glorious pictures spark great stories

☆☆☆☆ for Looks

Most advanced graphics around, but no freehand art

☆☆☆☆ for Longevity

Kids keep coming back to write more

Worth Noting

Video clips of real kids explain how to start stories; parents also get advice on the value and process of story writing.

Macintosh CD-ROM

Windows CD-ROM

About \$35

Edmark

(800) 691-2985

For older children, *Imagination Express* has an equally powerful attraction. They'll find tools to tell their story not only with pictures and words but also with animation, background music, and sounds (or voice-overs) that they record themselves. Better still, *Imagination Express* lets kids add to their fund of knowledge as they construct a tale. (It's the only storytelling product that does this, FYI.) Kids can consult an intriguing "Fact Book" before they begin a story, or simply click an icon to learn more about any sticker they're using.

The basic *Imagination Express* CD-ROM includes the program itself plus backgrounds, stickers, sounds and animations associated with a real-life neighborhood. Other CD-ROMs in the series focus on different destinations, including a medieval castle and environs (*Imagination Express Destination: Castle*), rain-forest flora and fauna (*Imagination Express Destination: Rainforest*), and more. Watch out, the costs can add up.

The bottom line: a terrific combination of unique art elements, space for writing, and tips on storytelling. The result: the best-looking books we've ever seen from a computer.

Sidebar

Good as it is, *Imagination Express* is not for every child. Take Juliet, a 9-year-old with a passion for creating her own artwork. "Everything's already done for you in *Imagination Express*," she said. "You just move all these pieces around. The program does too much for you."

If, like Juliet, your child needs to have total creative control, you may want to consider a writing program with freehand art capabilities. For little kids, *Davidson's Kid Works Deluxe* is a good bet. For older children, consider *The Amazing Writing Machine* or *Creative Writer*.

The Best Titles: Fun & Games

Myst

★★★★

The best adventure kids can have on a computer. *Myst* is a journey through time and space in a strange fantasy world filled with breath-taking 3D graphics. Or, in the words of one of our 10-year-old reviewers: "A mystery with weird things you have to figure out."

Since its release in 1993, *Myst* has developed an unprecedented following. And with good reason. It's got an intriguing story. There's a mystery to solve. There's a vast, visually detailed world to explore. There are photorealistic graphics, and hours of great game play. Both kids and adults love the sensation of moving first-person through a changing landscape, and collecting scattered clues in search of the final answer. Along the way, they encounter logic puzzles—complicated codes or number combinations, detailed sequences of actions—which they must solve to move to other locations or time periods.

Just the Facts

Best for Ages 9 & Up

☆☆☆☆ for Learning

Challenging puzzles, strategy, and problem-solving

☆☆☆☆ for Looks

Stunning 3D vision of an imaginary world

☆☆☆☆ for Longevity

Lure of solving a mystery, plus a vast world to explore

Worth Noting

Younger kids may enjoy *Cosmic Osmo*, an early click-and-discover program from the creators of *Myst*. Graphics are primitive by comparison but the spirit of adventure is similar.

Macintosh CD-ROM

Windows CD-ROM

About \$55

Brøderbund

(800) 521-6125

According to one young aficionado, the trick to playing *Myst* is this: "You have to be willing to keep trying new things." Kids use other strategies to make progress through the game as well. Some play with a parent, many share clues among a network of *Myst*-playing peers, and others dip into a book called "The Official Strategy Guide."

The opposite of a video action game, *Myst* is sophisticated and unhurried. It demands patience and endurance and problem-solving. And until they uncover the mystery, older kids revisit the world of *Myst* again and again.

The bottom line: a unique computer experience for kids who enjoy mysteries and adventure games.

The Best Titles: Reading Basics

WiggleWorks Volume 1

★☆☆☆

An excellent classroom product that won't make the grade at home—unless you take on the role of teacher.

Designed to get kids reading and writing, *WiggleWorks* was adapted from a Scholastic series for home use by Apple Computer. It encourages children to practice literacy skills by working—and playing—with three simple but appealing storybooks. In each story, kids can see the text on screen, hear it read (word by word or line by line), read it aloud, record themselves reading it, write or record their thoughts about it, copy words onto a notepad, play with phonics on a magnet board, or even re-write the text or change the pictures.

Just the Facts

Best for Ages 3–5

☆ for Learning

It takes your involvement to get the most out of this read-and-write program; skills include spelling, syllables, rhyming, word recognition

☆☆ for Looks

Attractive workspace with storybook illustrations

☆ for Longevity

Kids don't stick with it on their own

Macintosh CD-ROM

Windows CD-ROM

About \$50

Apple Computer

(800) 776-2333 x5924

There's no question this approach works; it just works better with a teacher's support and lesson plans. Unless you're actively involved, the *WiggleWorks* stories and activities aren't lively and unique enough to bring kids back again and again.

But it can succeed, with your encouragement. "Jocelyn loves reading the stories into the microphone and hearing them played back," the 7-year-old's mother reported. "This program has made her a writer, too."

The bottom line: a good-looking program based on respected teaching

methods, but you'll have to be closely involved to help your child stick with it.

The Best Titles: Math Skills & Drills

The Treasure Series

Treasure MathStorm!

Treasure Mountain!

Treasure Cove!

Treasure Galaxy!

★☆☆☆

The *Treasure* titles have moved to CD-ROM with some fairly substantial improvements: a graphic make-over, spoken introductions and hints, plus new character voices. They're still rather dated-looking, but they've been kid-pleasers for years, and the math problems are well matched to the first- through third-grade curriculum.

Like the *Blaster* programs, the *Treasure* series makes math exercises part of Nintendo-like games. The titles even look like video games: their fantasy worlds have a flat, fuzzy appearance. Characters move across the screen, jerk by jerk. But if the prospect of defeating yet another diabolical plot by the Master of Mischief is a surefire way to get your kids near math or reading practice, they'll get some educational benefit from these games.

All four titles have a similar premise, with slight variations. In *Treasure Mountain!*—the first program in the series and the most improved—players have to vanquish the Master of Mischief by restoring stolen treasures to a castle atop a mountain. In *Treasure MathStorm!* (which is still stuck with its old-style graphics), this same fiend has put the mountain into a deep freeze, and kids have to recover snowbound treasures to melt his evil magic. *Treasure Cove!* has the worst looks and the silliest plot: kids have to stop gooey creatures called goobies from polluting a cove, collect hidden gems, and rebuild a bridge destroyed by you-know-who. The Master of Mischief moves into outer space in *Treasure Galaxy!*, and players must search for Queen Astral's missing crystals to break his hold on Crystal City.

Success hinges on brain power: figuring out what's going on, what the rules are, where to find clues, where to get tools and what each one is good for, and then

solving lots of math, reading, or thinking problems.

The bottom line: video game-like adventures popular with both girls and boys. But more contemporary titles like *Troggle Trouble* or *Math Workshop* offer better graphics and a closer connection to the math kids encounter in school.

Sidebar

Parents of *Treasure* aficionados tell us that the math their kids practice during a game doesn't always "stick" with them.

Five-year-old Alexandra, for example, played *Treasure Mountain!* daily for weeks until she "unfroze" the mountain. Her goal accomplished, she rarely played again. And her mother reported that Alex didn't remember the math facts she seemed to have mastered during the game.

Just the Facts

Best for Ages 5–9

☆☆ for Learning

To thwart bad guys, kids apply reading and math skills including basic facts, telling time, fractions, place value, measurement

☆ for Looks

Video game-like graphics

☆ for Longevity

If they like the game, they'll do the math

Macintosh CD-ROM or floppy
DOS, Win floppy; Windows
CD-ROM
About \$45–\$50

The Learning Company
(800) 852-2255

The Best Titles: New & Notable

(Excerpt from The Computer Museum Guide's WWW site at tcm.org)

Zurk's Alaskan Trek Ages 6–10

When The Computer Museum evaluates children's software, we ask one overriding question: Does it use technology to add a valuable new dimension to the learning experience ... something that kids can't get in quite any other way?

When it comes to *Zurk's Alaskan Trek*, the answer is a resounding 'Yes.' The latest in the *Zurk's* series takes 6–10-year-olds to the 49th state where they can discover and experiment with the

real-life interactions of animals and plants in three different ecosystems.

The software's technology underpinnings are truly inventive: there's a kind of "intelligence" built into every plant and animal in this title. Wolves, for example, are programmed with a predatory instinct while hares head for their burrows at the first sign of danger.

Using these "intelligent," animated building blocks, children can populate scenes with animals and plants against the backdrop of the Denali region, tundra or ice floes. Then they can observe as animal instincts trigger true-to-life interactions. (Yes, we're talking nature red in tooth and claw.) Kids can capture these natural dramas as animated stories. And they can write accompanying scripts, too, drawing on a built-in field guide for information. In a nice touch, kids can even alter Nature's script, turning prey into predator for a change.

Like the other *Zurk's* titles, this one does a masterful job of integrating math, life-sciences and language-arts activities into an exotic natural setting. Underlying the movie-making and scripting activities, for example, are early programming skills and implicit lessons in sentence structure and composition. Math comes into play, too, when the animals from the Denali and tundra reappear in a hands-on activity that introduces equations while kids weigh different animals.

The bottom line: The best of the *Zurk's* titles. A visually stunning product that uses a powerful technology to create a unique, challenging and playful environment. (Created by Soleil, distributed by Maxis 800-526-2947, Mac and Windows CD-ROM, about \$40) ➤

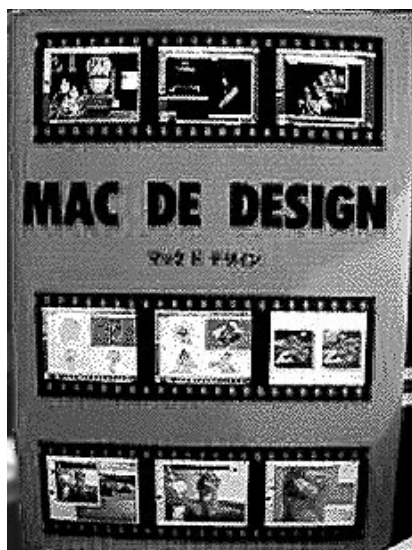
The Computer Museum Guide to the Best Software for Kids.

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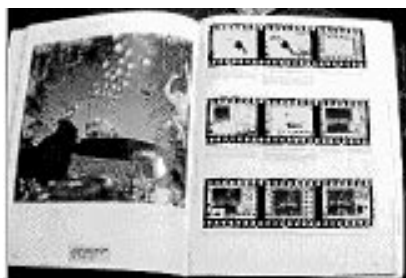
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Publishing
10 East 53rd Street
New York, NY 10022
1-800-331-3761
store@tcm.org
\$16.00

Mac De Design

by Don J. Modesto



MacDe Cover. Directed at professionals, *Design* shows the capabilities of various software applications and specific examples of commercial work being done with them.



MacDe Toucan. The end and the beginning and most of the in-between. The text is general so those familiar with the software tools being profiled are in the best position to benefit from each example.

Executive Summary

For those with a solid grasp of professional level software such as Illustrator, Strata Studio, and PhotoShop, *Mac De Design* affords an insightful glimpse into the commercial production of ads, illustration, and photos. Some of these items will be familiar to residents of Japan: ads for Georgia Coffee, HP Printers, TDK, Apple Japan, and that marvelous wasp with the visible timepiece innards, by Citizen. The format for presenting these 88 examples is the finished product on one page with a sequence of earlier versions of the image on the facing page. These smaller in-process pictures are cutely set in black frame with sprocket gaps as if the whole were a film negative. Beneath these thumbnails is text indicating roughly how each effect was achieved. A range of styles are presented from Barbie in a hot tub to William Gibson does fractals.

Except for the incessant passive voice, the text varies: sometimes it offers specific instructions, sometimes it reads like a conversation between graphics professionals. On one of my favorite pieces, a calendar produced for a company dealing in personal seals, there is a “1” written in Japanese inside a circle that has text bound to its path, (i.e. the text follows wraps around the circle). The caption reads, “The basic pattern of the ball is created based on a personal seal image because...” No mention of how one actually binds text to a path ensues, let alone which menus one might look in, or any settings needed for dialog boxes. In another example, an image was explained (dismissed?) with, “The various parts are assembled on the 3-D screen.” This assumption that the programs are all un-

derstood and familiar vastly narrows the readership of the book to those who already know the mechanics of—in this case—Illustrator. Perhaps at ¥16,000—hardly an unusual amount for this type of book in Japan—the publisher anticipated a select audience anyway.

Assuming then that we are consummate graphic artists looking for new insights into our craft, how does the book stack up? Very well, thank you. Pictures used to show the sequence of an image’s development may be a little small. (Personally I would have preferred less white space on the page—and none of those negative mockups—and bigger pictures.) And typos abound in the English translations, although not so as to hamper understanding. Beyond these quibbles, though, the pieces are taken from such commercial graphics powerhouses as Dentsu, Hakuhodo, and Young and Rubicam; so you can be assured that “what’s happening” in graphic arts is represented. Several examples for each of the various software packages—showing what the software can do—are shown for those considering a new purchase or a new application of an old program. And for someone comfortable with the tools of his trade, the text is not vague at all but concise, making *Mac De Design* a useful reference for the designer’s bookshelf. ㄨ

Mac De Design

by Jason Franzman
Tokyo, 1995
¥16,000 with tax (about \$160 US)
215 pages, hard cover

A.G. Publishers

4-13-6-2A Yotsuya
Shinjuku-ku, Tokyo 160
Phone: (03) 3219-7031
Fax: (03) 3219-8576

Quick Reviews

Books BMUGers Read

Microsoft Office for the Macintosh Visual Quickstart Guide, Book Review

by Don J. Modesto

An early TV ad for Macintosh showed a spine-wrenching stack of manuals thumping down from the heavens next to a PC. Then it showed two or three slender manuals fluttering down beside a Mac, the message being that the Mac is easy to use. And this was true, the Mac was easy to use. The trade-off was that the PC did more. This is the case with *Microsoft Office for Macintosh (MOFM)*. It is not a reference for in-depth features of the suit of programs. But it is slender, concise, a breeze to use, and it will get you up and running fast, precisely what it promises to do.

Excel, Word, Power Point, and Mail comprise MS Office. Excel and Word are the de facto standards for spreadsheets and word processing on the Mac. Each of these knuckle-draggers requires a daunting investment of time to learn. A publishing niche is born.

MOFM streamlines its instructions by paring down to essentials, organizing for economical work habits, providing a detailed table of contents (ten pages—same as the index), illustrating text profusely, and cross referencing topics in the text. Beginning with a remedial section on using the Mac (Can you say “double-click?”), *MOFM* devotes a section to each Office program wrapping up with “Com-

binning the Office Applications.” Tables of contents fronting each section detail its topics/chapters. The one-page “Road to a Document”—replete with page references—suggests an economical procedure to follow for using the program. A screen dump labeling the application’s basic appearance follows with the facing page giving one-line explanations of each label.

True to the series’ name—Visual Quickstart Guides—text in *MOFM* is spare. Numbered procedures typically claim a quarter of a page; screen dumps, captions, and white space account for the rest. The format is easy to grasp and consistent.

Peach Pit has appropriately pegged the book’s level at beginning/intermediate, and instructions assume that you will be using the programs’ defaults, often directing you, for example, to Word’s toolbars. *MOFM* will show you how to rid your screen of these Robocop-on-steroids apparitions. But nowhere are you told how to assign keyboard equivalents to retain the functionality of those toolbars—an advanced feature.

I found the *MOFM* lacking only in advanced features which it doesn’t pretend to cover. On first using it, I sometimes found the visuals unnecessary, as if they had to be there because the series called itself *visual*. But I also found myself referring to them constantly and feeling comfortable with the book immediately. For the beginning Mac user or the new MS Office owner, *MOFM* will allow you grasp the essentials quickly and hit the road running.

- **Pros:** Organized and presented for easy access; concise; cross references noted in text.
- **Cons:** Illustrations at times pro forma.
- **Ideal Readers:** Beginners and people needing to produce *now*. 🚀

Microsoft Office for the Macintosh Visual Quickstart Guide

by Steve Sagman
Price: US \$17.95
282 pp. (paperback)
Peachpit Press
Berkeley, 1995
Phone (510) 548-4393
Fax (510) 548-5991
<http://www.peachpit.com>

Microserfs A Micro Review

by Carol Haberberger

“I am 26 and my universe consists of home, Microsoft, and Costco. . . . My life is lived day-to-day, one line of bug-free code at a time.”

Microserfs (sic) is the tale of danielu@microsoft.com, who makes a life transition from Bill’s campus in Redmond back to his parents’ home in Palo Alto to join a startup software company producing a new game called OOP. It’s funny, poignant, full of in-jokes and techie bon mots and bonhomie (definitely oxymorons)—combining all the elements of boy-meets-girl-and-falls-in-love friendships. It’s all about life, friendship, the Gap, and the future—when the characters aren’t coding, anyway. The ending is almost sitcom-like, bringing everyone together.

Microserfs is also a bit unsettling. People are defined by their Jeopardy categories. It was not only the shallowness of the culture that unsettled me, but it was the fact that I seemed to recognize many people I’ve met here or there. Does danielu@ get his girl? Finish bug checking in time to ship? Build a new house

entirely with Legos for the gerbils (named appropriately, Look and Feel) and invite Bill to the housewarming? You might want to think of it as a sort of a *Tales of the City Goes Silicon*. (apologies, Armistead). Or *Microsurfs, 18 Months in the Almost Life Of*. ☞

Microserfs

by Douglas Coupland
New York, 1995
Regan Books

The Photo- shop 3 Wow!

Book with CD ROM

by Don J. Modesto

Executive Summary

Impression

Overwhelming on first take, *The Photoshop 3 Wow!* book excellently reveals the incredible capabilities of Photoshop, the software standard for digital image editing. The book is tutorial-oriented so the learner sees what the tools do rather than reads *about* them. *Photoshop Wow!* also provides a wealth of tips and shortcuts to make the nitty-gritty of Photoshop easier; it shows you how to resize the image quickly to fit the whole screen without dragging and using the resizing box (e.g., double-click the hand tool), or taping the monitor's brightness and contrast knobs after calibration (i.e. getting the monitor and each step in production to match what the printed output looks like).

Contents

Photoshop Wow! has 9 chapters which cover basics (as a pro would practice them), tools, photo enhancement, collages, filters, using Photoshop to paint, Photoshop with PostScript, special effects, and 3-D animation. Footnotes are taken from the bottom of the page and placed next to relevant text in what the authors optimistically call "hypertext." The effect is a little distracting but not more so than that of footnotes; I find it preferable to chas-

ing down references in the lower margin. The text itself illustrates rather than defines concepts giving step-by-step instructions for achieving target effects. In "Retouching a Photo" for example, the task is to eliminate telephone lines from a black and white picture. The knotty problem of selecting these from a sky having similar tonal range involved an innovative approach (select the sky instead) and the integrated use of several Photoshop tools. The filters chapter invests over 20 pages to good end with side-by-side comparisons of the effects of various Photoshop and third party filters. Save one, chapters end with a "Gallery" section profiling real Photoshop jobs—some private, some commercial (e.g., a scene from "Mask")—with brief descriptions of how effects were accomplished.

Appendixes provide samples from commercial image collections with contact info for them as well as for the publishers of Photoshop add-ons, publications, and artists and photographers. A useful index—as opposed to those spare or non-existent ones we find in so many computer publications—follows.

The CD-ROM includes 54 files for tutorials, palettes, settings, and patterns; about 300 stock photo samples; 100 or so filters; and some advertisements for Wow! series' siblings Illustrator and Painter.

Final Word

Handsomely turned out and both comprehensible and comprehensive, *Photoshop Wow!* is an extraordinary book which can—accurately—claim to be suitable for both beginner and pro. At a svelte 282 pages, it will also fit comfortably in your bag unlike so many of the 700+ page Photoshop behemoths we see bowing bookshelves in the computer section. For the beginning Photoshop user, this book is ideal. Clear writing, lots of examples, tutorials, nuts-and-bolts tips. A digital imaging professional in need of much in the way of technical specs and reference may want to turn to one of the larger books like *The Macworld Photoshop 3 Bible*. Even so, *The Photoshop 3 Wow!* book is still very much in the competition with regards to advanced techniques and all the real-world examples of fellow commercial artists' inspiration. ☞

The Photoshop 3 Wow!

Book w/ CD ROM
282 pages \$39.95 US/¥6000 Japan
Linnea Dayton & Jack Davis
Peachpit Press
Berkeley, 1995

Travel Smarter: Don't Buy This

A Review of Smart Travel,
A Cyber-Travel
Planning Guide

by Don J. Modesto

Smart Travel is a combination travel planning book and CD-ROM. If the advice it gives were any smarter, Jim Carrey might star in the movie version, and it would be the sequel to *Dumb and Dumber*. *Smart Travel* turns out to be a perfunctory and bland guide to planning travel by using cyber-resources.

The book's advice for keeping track of auto expenses illustrates the depth of *Smart Travel*: 'Make spreadsheet columns for date, repair/maintenance, type, cost, mileage, and garage.' Formatting date cells as such or searching by this criterion is impossible. You can enter a sample expense and learn to sum columns; sorting is demonstrated; when encountering difficulties, consult the user manual.

For the spreadsheet-challenged, the exercise is utilitarian. For anyone else, obvious. This is the book—utilitarian, obvious. The CD doesn't even run on a Mac. See Table 1 for a rundown of the pros and cons.

For deciding which online service to subscribe to or for a catalog of travel software, Smart Travel will do. Otherwise, skip this trip.

A Where-to, Not a How-to

Smart Travel surveys the basics of computer travel planning by introduc-

ing and evaluating software and major online services such as CompuServe (NiftyServe in Japan) for pertinent resources. It walks us through a request of the Eeas Sabre online reservation system for airlines, hotels, and rental cars. It tells you where to look for bargains or to arrange a house swap, and suggests entertainment resources for those vacationing at home.

Except for a section on keeping kids happy on car rides, *Smart Travel* eschews advice on travel itself. The book is dogmatically about where to find information and not the information itself. You will not find a clue about whether to put your laptop through x-ray machines at the airport. Laptop battery life? Adapting hotel phones that lack modular jacks? Different book.

A meta-guide book rather than something immediately useful, *Smart Travel* would be better as a fold-out map: here are relevant Web sites, a path to America Online's Travel Forum, and so on. On the flip side, the map could display a table reviewing travel-related products and contact numbers for their publishers.

If you do buy *Smart Travel*, keep a highlighting pen handy, and don't miss a contact number along the way because the numbers are not consolidated for you in an appendix.

While *Smart Travel* offers concise pro/con summaries of services, its prose style is sans spice. You will not find the candor of *Dr. Macintosh's Guide to the OnLine Universe* (LeVitus and Ilnatko, Addison-Wesley, 1992), for example, where the Prodigy online service is introduced with, "(Sigh). Okay, I'll say it, Prodigy stinks. Avoid Prodigy unless you have kids."

Final quibble: a designer let the CD peek out a hole in the book's cover. Pull out the CD and the cover catches on anything in your bag. Use your money for Addison Wesley's PowerBook Companion or a Lonely Planet guide.

Travel Checklist

Here are some tips you won't find in *Smart Travel*. Before you head for the airport, go through this list:

- Is your laptop secure?

Qualtec makes cables for securing your laptop to a work area—\$35-90 list. (Phone (510) 490-8911, Fax 510) 490-8471)

You can even get motion detectors from Versa Lock, for the times you get distracted in the airport (Phone (818) 886-8962; about US \$70 street)

- Are sensitive files—credit card and calling card numbers, for example—password protected?

FolderBolt, about \$90, is highly rated.

- Plan to work on the plane?

Don't forget extra batteries. For Mac owners, the Lind Memory Saver lets you change batteries in sleep mode rather than shutting down and restarting. APS has it for \$9.95 at (816) 483-6100, Fax (816) 483-3077.

- Keep an emergency disk for getting into your laptop in case of problems.

Both Norton Utilities and MacTools Pro have a function for creating these.

- Bring an AC adapter with extension cord and multi-socket adapter.

- A portable surge-suppressor (available for both electricity and phone lines) can give added peace of mind in countries with lower quality electrical systems.

- Remember socket adapters for electric outlets (a must for Singapore, for example).

- Extra lengths of phone wire with RJ-11 jacks for connecting your modem are always handy.

- Also handy are phone wire adapters—one for extending wire, one for joining two lines into one so that you can use both phone and modem together without switching the cable back and forth.

- *The PowerBook Companion* is a down and dirty, nuts and bolts, nitty-gritty how-to book with lots of good advice for PowerBook users.

It explains how to strip wire on hotel phones lacking modular jacks, for example. [Editor's Note: BMUG does not recommend tampering with hotel wires. Instructions are only provided in the mentioned book.]

- Remember to bring tools such as a small screwdriver and wire-stripping kit for hotel phones lacking modular jacks.

- Request a modem-friendly room when making hotel reservations (you don't really want to be stripping wire, do you?)

- The Konexx Connector (APS, \$129.95) will adapt signals so that your computer can talk to digital PBX systems that would otherwise destroy your modem.

- Keep a list of local BBSes. This can usually be gotten online from the BBSes you frequent locally.

- Keep a list of your software and registration numbers with contact information on publishers. You may need them to re-install software on the road. Now Utilities for example, won't let you without a registration number. For upgrades or technical support, some companies do ask for registration numbers.

- Back up software that you can't do without.

- Know your hotels' fax numbers for staying in touch on the road.

Also, if you want hard copy of a document you can fax it to yourself and have room service deliver it with breakfast.

- The QuicKeys macro program with Powerbook Specials installed can help you zip through the airport.

With the Sleep shortcut enabled, for example, you won't have to tire your battery with startups and shutdowns at each airport security station. Put the PowerBook to sleep before you get to the airport, push one key to wake it for the check, and then invoke sleep again.

- Get a copy holder so you can work without a desk.

Any stationery store will have those little doo-hickeys with a clasp on one end and a paper holder on the other. Not great but better than nothing.

- Always wear a smile.

I find this the single best means of dealing with people used to dealing with unpleasant people. ☹

Smart Travel

with CD ROM
Lan Sluder, et al.
Ziff-Davis Press, 1995
156 pp., \$24.95 US

Hardware

The Products of 1995

by Stephen Howard

My job is to know about new Mac products; I don't have to know much, and I don't have to know it for very long, but for a short span of time, I'm supposed to know a lot. That's because I'm a reviews editor at a Macintosh magazine—a weekly magazine. So, it really takes an effort for me to think longer term, to think about all the products that came out during that past year, for instance. But that's what the editors of the Newsletter asked me to do, and, hey, it's easier than answering the Helpline. So here goes.

Power Macs

You might have thought that 1994 was the year Apple introduced the Power Mac, and you'd be right in the historical sense. In the practical sense, however, the transition to a RISC architecture happened in 1995. Apple makes a lot of computers, and until the majority of the units being shipped were based on the Power PC, the transition hadn't really happened yet. This past year Apple navigated that transition, and it did so poorly enough that the resulting product shortages become fodder for daily newspapers around the country. While Apple was delivering one million new Macs to customers every quarter, the number of people left waiting in the wings was in the hundreds of thousands. That's not a company-killing problem, but it was Apple's biggest one last year, and it was the issue that concerned most users.

It's worth noting amidst these complaints that Apple not only shifted most of its machines over to the new micro-processor, it really redesigned the basic Macintosh. The PCI-based Macs that came out last August are very different than Power Macs released in 1994. The

new ones are a lot better, and the biggest improvement from where I sit is how upgradeable they are. On the 7500, 8500, and 9500 models, you can remove the CPU, which sits on a card, and plug in a newer, faster one. This brings to the Mac a low-cost, processor upgrade option like those PCs have had for years. Now, the users of clock-chipping upgrades may scream, but I think an Apple-endorsed, cheap CPU upgrade makes every new Mac worth more. To me, this promise of future upgrades is a good enough reason not to buy the 7200, which has no such capability.

The PowerBook's move to the Power PC was especially bad, basically because Apple designed its machines badly. The 5300-series all-in-one models and the 2300-series Duos were months late, slow, and un-inspiring. Michael Spindler, Apple's Big Cheese, was disappointed, too; he sent a note to employees imploring them to retake the lead in portables this year.

Clones

Much was made last year of the arrival of Mac OS-compatible machines from companies other than Apple. And, just like with the Power Macs, the important shift won't happen until a year later. It's in 1996 that clones from several vendors will be price-competitive with Apple and interesting from technology and market standpoints. None of the clone vendors—Radius, Power Computing, DayStar—sold very many Macs last year. There was smoke, but not a lot of fire.

This year, however, clones will gain features that Apple's machines don't have, a process that had just barely begun in the Fall of 1995. Also in 1996, Apple should release a version of System 7.5 that

can run on hardware rather different than today's clones or Apple-built machines. We'll have to see how that pans out, but the principal benefit will be lower cost from cheaper, more common components. You'll be the judges of whether that's good.

Open Transport

Software vendors were way out ahead of Apple in 1994, and there were plenty of Power PC applications shipping by the end of that year. Sort of.

If you used applications that were known to be working really hard at calculation, then you probably got an upgrade really fast. If your application never raised a sweat, processor-wise, you might have had to wait until 1995. By the end of 1995, though, if an application wasn't running in Power PC native mode, it was in serious trouble—or it was a networking program.

Last year's biggest snafu for software centered around incompatibilities in Open Transport, Apple's new networking and communications component of the Mac OS. Users found that many of their Internet utilities, and some more basic tools, didn't work on the new PCI Macs. The problems were caused in part by Apple's phased roll-out of Open Transport; the company first released a version that it knew wasn't fully compatible, based on the idea that the initial PCI Mac, the 9500, wasn't intended for people who were heavy communications users. All the best laid plans...

The solution to the nagging Open Transport compatibility problems is Version 1.1, which should be available by the time you read this. Following this Mac OS upgrade, you'll see a wave of new networking and communications products throughout 1996.

QuickDraw 3-D

On the upside for Apple operating-system technologies looms QuickDraw 3-D. This system extension was released in August, but it took two months for the first program to come out that supported the new software. QuickDraw 3-D—which works only on Power Macs—makes three-dimensional images (wireframe models, virtual reality, etc.) faster and easier. Apple has some really good stuff here, and they've even developed an add-on PCI card that speeds up 3-D imaging by 10 times. I expect we'll be seeing a ton of related software, including new games, this year as more developers discover that 3-D isn't as hard as it used to be. Part of the interesting software story in 1996 should be the investigation of 3-D interfaces by Mac programmers. It's a classic case of a technology looking for relevance with the mainstream audience. But, while many new Apple technologies are ignored by users, three-dimensional images are so whizzy that I believe someone will popularize QuickDraw 3-D. Maybe it will be a screen saver.

Adobe Purchases

Last year, Adobe Systems, the maker of PostScript, bought Aldus, the inventor of PageMaker. Then, Adobe bought Frame, a company that sells a high-end sort of PageMaker for book and documentation publishing. Then, Adobe bought Ceneca, a small-fry company whose first product—PageMill, an Internet publishing tool—hadn't even been released. And, as I write this, many people in the computer industry think it's only a matter of time before Adobe buys Macromedia, the company that created the popular Director animation software.

Adobe became the number one seller of software on the Macintosh last year, in terms of dollars spent by users—ahead of Microsoft. And, most of Adobe's products are developed first on the Macintosh and then ported to Windows. That's refreshing for anyone interested in the future of the Mac. We now have an 800-pound gorilla on our side.

Zip Drive

Outside the spotlight of hundred-million-dollar deals, Iomega delivered a terrific product that created a new market, and a new product shortage, overnight. The Iomega Zip drive, a consumer-oriented removable-media device, slapped the face of SyQuest and walked off with the hearts of users. The medium-fast Zip holds 100 megs on a \$20 cartridge; the drive itself is lightweight enough to carry home, and the price is about \$200. That combination of features became hugely popular. SyQuest had for years been the de facto choice for any Mac user who wanted to use removable media for backing up, archiving data, or trading large files; and in 1995 the company was seriously challenged by perennial loser Iomega.

SyQuest charged back admirably with the EZ 135, a low-cost drive that holds more, is faster, and costs the same as the Zip. Early reports indicated that we had the makings of a Coke versus Pepsi battle; some people like one, some the other. I expect you'll hear a lot of Zip versus EZ 135 arguments this year.

It's ironic to me that 1995 was the year for a breakout success in removable media, since it was also the year that traditional hard disk prices came crashing down. By Fall, you could buy a 1-gig hard disk for about \$300. In 1996, I don't think you'll be able to buy a new Mac that doesn't have at least that much disk space pre-installed. For once, you'll be getting a lot more disk space than you need—right out of the box. For the old-timers who have struggled with cramped drives, 1996 should be the year to expand. I recommend people buy the gigabyte or two that they need; being able to keep everything you need right at hand will change your life (for a year or so).

Color Printers

Several new printers were released in 1995, which, taken together, amounted to a renaissance of color. Apple's various color StyleWriters became priced for mainstream users; the company released its

\$7,000 Color LaserWriter to rave reviews, and Hewlett-Packard shipped the 1600CM, a high-speed color inkjet device. Other companies, like Tektronix and Lexmark, also cut prices and improved quality.

Aside from the StyleWriters and HP's earlier DeskJets, color printers are not ready for home users. But, the new wave that beached in 1995 made color affordable to businesses and delivered a level of quality that really impresses. I think many companies will be seriously considering color laser printers in 1996 for the first time.

Inside Baseball?

Does this sound like a lot of industry-insider stuff? It does to me, but that's what I do for a living. As Apple's overall marketshare in the personal computer business shrinks, the company becomes more important as the leader in the Mac industry. More and more companies are looking to Apple to create market opportunities, provide core technology, and generally lead the way. So much of what will happen in 1996 will be predicated on Apple—for better or for worse. Successful products that have nothing to do with Apple's plans or execution—like the Zip drive—will be rare this year, as more vendors hang off Cupertino's coat tails.

While Apple fights the big fights against Windows, the Pentium Pro, and others, the challenge for most users will be finding the products that work for them immediately. There will be great deals in hard drives—which everyone can use—and whizzy new 3-D applications—which few will know what to do with—but the basic day-to-day software and hardware for having fun and making money with your Mac won't be the focus of most vendors. You'll have to keep your ears to the ground for the good stuff. ☞

Stephen Howard is the executive editor of reviews at MacWEEK, where he's worked for the past, um, seven years. He can't remember most of them. Send him mail at stephen_howard@zd.com.

Hot Swap

by Scott Beamer

Here's a product that fixes two of the most common causes of anguish in dealing with SCSI devices. Those problems are malfunctioning termination, and the need to turn off all equipment to add or remove a SCSI device.

Hot Wire's PowerPlug II is not cheap (\$119.99 for one, \$99.99 each for two or more). For the many Mac users who seldom add or remove SCSI devices, this item is a luxury. However, for those who frequently swap SCSI devices, the only questions are "Does it work?" and "How can I get my hands on one?" Yes, it works, and to buy one, you may have to contact the company; it's a small one.

The more spectacular of the PowerPlug's abilities is that it lets you hot swap the last item on your SCSI chain. Hot swapping means you don't have to shut the Mac and SCSI devices or network down just to add or remove a SCSI device.

Typical uses of the Power Plug could be in a service bureau, letting clients hitch up their external storage

devices (so many bring files too big for floppies nowadays), for swapping shared externals in an office; and, you could connect a PowerBook in hard disk mode to another Mac. Hot swapping can be done even when File Sharing is on or printing is in progress.

There are three technical elements to the PowerPlug that separates it from a normal terminator. First of all is the manual Data Go/Data Stop switch (with LED indicator light) on the terminator. With this switch in the Data Stop position, you can safely remove, add or exchange SCSI devices from the end of a SCSI chain.

Second, is the PowerPlug Control Panel (Figure 1), which aids in making sure you and your Mac agree on just which devices are connected to your Mac. Clicking on the Control Panel buttons of "Remove Device" or "Swap Device" automatically handles "close device driver" problems.

I have found it more successful than SCSI Probe at bringing invisible icons to the desktop. For instance, I often forget to turn my external CD-ROM drive on before starting up my Mac. SCSI Probe can't bring it up. I would have to restart, unless I click "Add Device" in the PowerPlug Control Panel. There's my CD with the disk in it, correctly identified as it comes to the desktop.

The third technical advantage of the PowerPlug is that it includes a chip set that converts the analog termina-

tion signal into a digital one. Hot Wire Technology claims that this superior SCSI signal is also SCSI-2 compliant and eliminates many common SCSI problems, including dealing with fussy CPUs, hard to boot symptoms, and system crashes.

Besides the price, the only major problem I have with PowerPlug is that you must use separate PowerPlug models for the end of a SCSI chain or between SCSI devices. The PowerPlug NT (Not Terminated) can be used between devices in a SCSI chain longer than two devices, but not in the last spot. ☹

PowerPlug II

PowerPlug NT

List Price \$119.99 (2 to 5 \$99.99, 5+ units \$89.99)

Hot Wire Technology

462 Danbury Road
Wilton, CT 06897-2126

203/761-0651

Fax: 203/761-1444

Internet: andrewp@hotswap.com

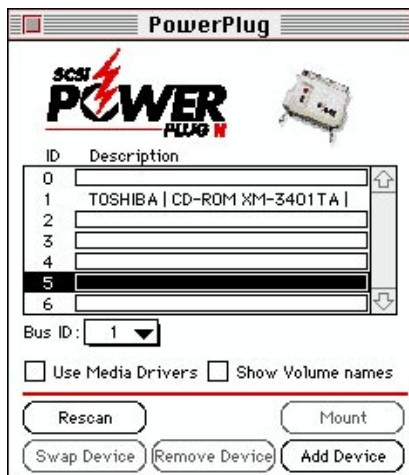


Figure 1

The PowerBook 550c

The Best of the Blackbirds Soars in Japan

by Gregory Stapp

Apple's eagerly anticipated new line of PowerBooks based upon or upgradable to the Power PC chip was finally announced late this summer. Unfortunately, rather than fulfilling or exceeding the great expectations that had been fed by their tardy arrival, the new PowerBooks' actual release was marred by production delays, recalls, scarce availability, high prices, mixed reviews and troubling reports about lackluster 680x0-emulation performance.

Such difficulties can temper one's initial enthusiasm for a product and cause one to consider a different manufacturer's offerings. But unknown to most of the world, Apple itself recently provided Japan's residents and visitors with another superb choice that is arguably superior to its younger siblings: the PowerBook 550c.

In late May of 1995, while the Macintosh community waited impatiently for the much delayed Power PC PowerBooks, Apple's announcement of a PowerBook that would be available solely in Japan received scant attention elsewhere. Yet this late arrival is the most beautiful and powerful member of the Blackbird family. Building upon the solid foundation of the popular design and features of the 540c, the 550c (which by the way is the only Blackbird that is actually black) sports a full 68040 with an FPU, a 10.4" active matrix color screen, and ships with 12 megs RAM, a 750 megs HD, KanjiTalk 7.5, HyperCard 2.2.1, and the PowerBook Mobility Bundle.

In other respects the 550c mirrors the capabilities of the 540c. It has an internal modem slot, two battery bays, the left of which can also accommodate a PDS device or PC-Cards (using optional adapters), Ethernet, SCSI, Video out, Audio In, Audio Out, Serial/Local Talk,

*One of the bonuses
in buying a machine
in Japan is that
KanjiTalk is
automatically
bundled with it.
KanjiTalk comes
with more fonts
than Apple's
Japanese
Language Kit*

and ADB ports, Floppy Drive, Built-In Left & Right Stereo Speakers and Microphone, and a Trackpad. The Power PC upgrade is expected to be available soon.

Macs sold in Japan come with a keyboard that includes extra keys designed to facilitate the notoriously complicated process of Japanese text entry. To make room for these additional keys the space bar and specialty keys like Command, Return, Delete, etc. are somewhat smaller. As a result, one's hands are not directly centered around the trackpad but are

slightly to the left, making it easier for a wayward thumb to accidentally move the pointer. One must also reach farther for the right Shift, Return and Delete keys. However an optional U.S. keyboard is also available for those who have no need of the extra Japanese capabilities.

If you are interested in the Japanese language, one of the bonuses in buying a machine in Japan is that KanjiTalk is automatically bundled with it. KanjiTalk comes with more fonts than Apple's Japanese Language Kit, and since it's bundled you don't have to pay Apple's outrageous prices for either one. It also appears that one can pull some of the parts from KanjiTalk (extensions, fonts, etc.) and drop them into System 7.5 so that one can also have some of the benefit of WorldScript aware applications even outside of the localized operating system, again without the expense of the separate language kit.

Although the 550c ships with the Japanese localized versions of Macintosh software, it still runs most nonlocalized programs perfectly well. And of course it also runs everything smoothly under standard System 7.5. Priced at its introduction around \$5,000.00, the 550c's street price had fallen to \$2700.00 by September. A fortuitous change in the dollar's value versus the yen and the announcement of the new PowerBooks helped effect this precipitous drop greatly, but the 550c had nonetheless become a great bargain!

The 550c can run nonnative software faster than any other PowerBook (including the new RISC machines, whose emulation performance is very disappointing). While it cannot run software in the Power PC native-mode, one might still question whether most new native programs will be truly practical for portable machines. But upgrading the 550c to the Power PC chip

should be delayed in the hope that a more powerful version of the 603 will become available as an upgrade option. Upgrading at present would cause significantly more performance penalty than gain.

Two years ago Apple started hedging about its upcoming operating system—Copland—stating that a smaller and faster OS would perhaps be better for PowerBooks. Now rumors are surfacing that Copland won't even run on Macs that have been upgraded to the Power PC. Regardless of the eventual outcome of these trial balloons, one fact is self-evident: programs have been getting huge, and the bigger the program the faster the batteries die. And until Apple fixes the new batteries, the 5300's will have only half the battery life of the Blackbirds.

The 550c's beautiful display (which matches that of the 5300c) far surpasses that of the 540c. One can actually read 10 point Times on it! The new 5300ce has a Super VGA 800 X 600 display that is supposedly even better. But to my mind, cramming that much more information into the same spatial dimensions only produces eyestrain and the added expense of a magnifying screen.

If you're intrigued by my description of the 550c you still have to find one. Unless Apple relents and starts selling it outside of Japan you can only buy it (or have a friend buy it) there. International mail order is not really a viable option as it is expensive, slow and risky. And since the Japanese still prefer to use cash, even for large purchases, many stores only accept credit cards that have been issued by Japanese institutions.

If you choose to buy with a credit card for additional warranty or other protections, be advised that the vendor may charge a substantial fee for the privilege and that the credit card company will also impose an exorbitant currency exchange rate. Also remember that computers aren't sold in the duty-free sections of stores, so you will have to pay Japan's 3% consumption tax, plus United States duty, when you return through customs.

Of course the biggest obstacle you face may be the need to travel to Japan. While the purchase of a 550c is a wonderful reason to visit, it's not a very cost effective one. The expense of travel, lodging and meals in this costly country could quickly surpass the price of the 550c. But if you

***Japanese still prefer
to use cash, even for
large purchases,
many stores only
accept credit cards
that have been
issued by Japanese
institutions.***

have other reasons to travel to Japan or have friends who are headed there, and most certainly if you live there, you should investigate this wonderful machine.

My own interest in the 550c began when MacWEEK reported a rumor about its impending release last spring. As I related in "An Apologia for the Macintosh Portable" in the Fall '95 Newsletter, the thought of a Blackbird with a larger active matrix screen intrigued me. When MacWEEK reported its actual introduction shortly thereafter I was again excited but disappointed by its high price.

In late August my wife and I traveled to Osaka for a production of Mozart's opera *The Magic Flute* that was jointly sponsored by Sakai City Opera and the Chemnitz Opera in Germany. While there I managed to steal away to the electronics district known as Den Den Town. I found that many more stores now sell Macintosh products, although NEC and the perfidious Windows 95 dominated the showrooms.

The 550c was displayed in several stores and I discovered to my delight that the price had dropped considerably since its introduction. I began to think seriously about purchasing one. Even though the operating systems and installed software were all in Japanese, I was able to access programs with no difficulty because the Mac OS is so consistent. Sales-

men who were convinced by my ease in experimenting with their Macs that I could read Japanese, quickly became confused when it was apparent that I didn't speak the language.

Contrary to popular belief, most Japanese do not speak English well. If you want information in a computer store you have to learn enough Japanese to ask the questions and more importantly understand the answers. You could also arrange for a friend or guide to go along to translate.

A month of window shopping saw the 550c's price continue to plummet. During this time I was also able to enjoy hands-on tests of Power Computing's and Pioneer's Mac OS Compatibles. Both of these companies appear to have done a wonderful job. I only wish that they had portable solutions available as well. Apple announced the new PowerBooks and some of them quickly hit the streets in Japan. But as I had predicted in my Portable article, I was unmoved by the 5300 et al.

Finally, I decided to take the plunge. I asked a Japanese friend to accompany me to the store with the best price so that I could ask a very delicate question. I wanted to be able to examine the screen to make sure that there were no broken (frozen) pixels. The store manager was most accommodating but unfortunately they had just sold out their allotment of PowerBooks. We then tried some other stores that had just dropped their prices to a competitive level but they were unwilling to let me examine the screen before purchase and wouldn't agree to an immediate exchange if there was a problem.

Frustrated but undeterred, two days later I returned alone to the first store just minutes after they received a new shipment. The manager unpacked a 550c and helped me carefully examine what proved to be its flawless screen. I quickly bought it and haven't stopped smiling yet. Still to be determined is whether I can bring myself to part with my beloved Macintosh Portable. ㊦

Gregory Stapp is an opera singer who has lugged his Macintosh Portable to his performances around the world. He can be contacted via the Planet: Gregory Stapp or the Internet: primobasso@aol.com

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Panorama 3

Coming Soon to a Screen Near You

by Scott Beamer

What looks like a Web page but is actually a database? That would be MegaDemo for Panorama 3 (See Figure 1). Constructed in Panorama to show off its new features, this highly colorful screen is chock full of buttons and hypertext links showing more than most of us want to know about any database (MegaDemo can be downloaded from the usual sources, including Planet BMUG). However, it does make its point. The new version of this product is highly flexible and can assume the look and feel of whatever you want to put on the screen.

What Panorama 3 doesn't do is browse Web pages. That is not to say it doesn't have impressive external links. Would you believe SQL links? SQL is a standard language for database management on desktop to mainframe computers. Not only can Panorama 3 download SQL data, sort it, and generate reports, it can add data, edit it, then send it back to the SQL host, even if you were not connected to the server when adding data.

ProVUE calls this new ability "partner/server," as opposed to the traditional client/server that can only download information from the server database, or send it information in filled out forms.

To use these new abilities, you must have more than Panorama. You must also have a server—not any SQL server, but a special version of a Mac software one, called Butler Server, from Everywhere Software of Toronto. Don't misunderstand the SQL connection. It does not currently work with any SQL server other than the Butler Server, and cannot download the database from a SQL server on another platform, say on a company's mainframe.

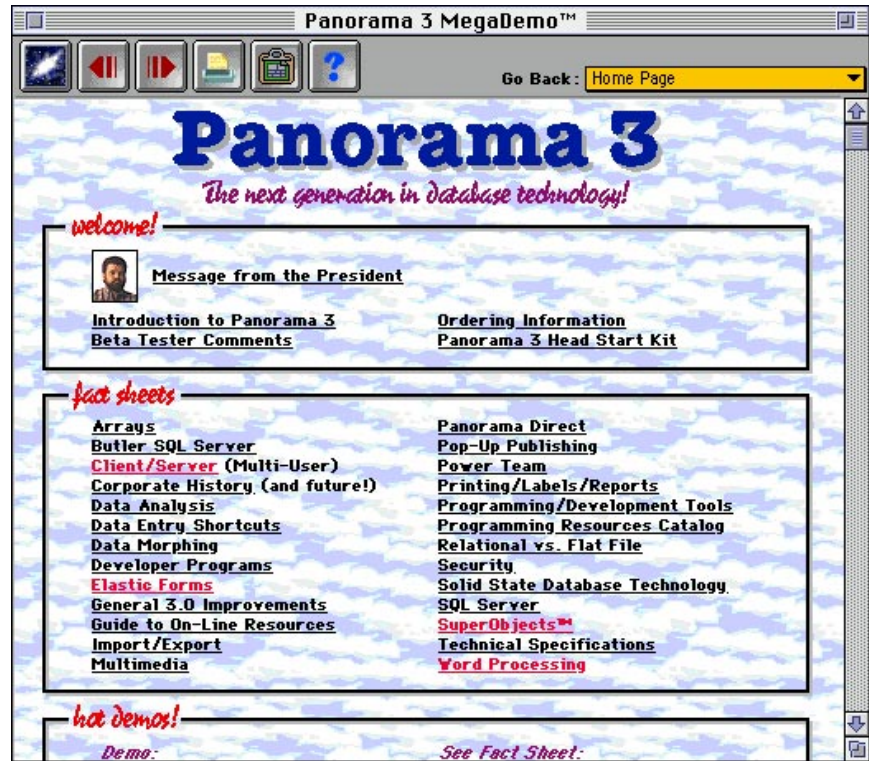


Figure 1. MegaDemo, for Panorama 3.

(ProVUE says that ability may be added later, along with support for other Mac SQL databases and a Windows version of the product. In the meantime, the Butler Server can import data from other SQL servers).

Though I have used Panorama since 1985 (including its early incarnation named OverVUE), I was having trouble comprehending where in the Mac software market this new version of Panorama would fit. I interviewed Jim Rae, ProVUE's president and lead programmer. He explained much of my problem was that I still thought of the market in terms he feels have largely out-

grown their usefulness, namely "flat file" and "relational".

He stated he didn't think there had been any flat file databases on the Mac in many years. As for relational, he didn't feel that term fit well with Panorama 3, but he does intend that his product should compete head-on with database products usually referred to as relational, such as 4-D and Fox Pro. The important thing, he feels, is that his product can build the same applications as the competition, and maybe do it better.

"Disk-based databases rely on indexing to get good speed for searches. Panorama, as a RAM-based database, doesn't

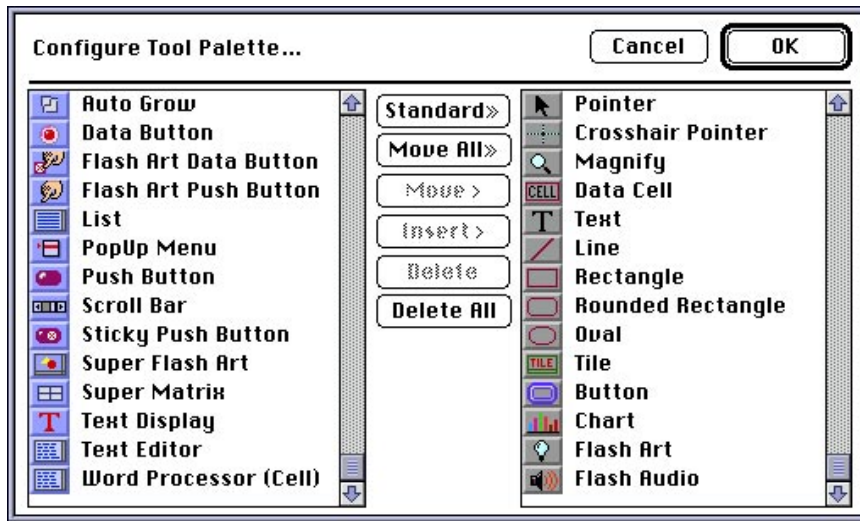


Figure 2. Configuring the Panorama Tool Palette.

need indexing to do very fast searches. Furthermore, indexes make up the bulk of most database files. Panorama files are only a fraction of the size of those of its competitors.”

A strange misunderstanding has attached itself to Panorama over the years. It has been frequently mentioned in print that being RAM-based limits the size of the databases Panorama can deal with. While this may be technically true, in real life, it has no bearing. Jim points out he has a mailing list with 100,000 names that requires only a 6-megabyte partition. Those clients who need to work with larger databases will only have to add a bit more RAM.

Blazingly fast, small file size, innovative multi-user abilities, and plenty of new tools for building state of the art applications and interfaces. This is Panorama 3. What about those owning earlier versions? Should they upgrade even if they aren't planning on building high end applications? Jim pointed out there are new features for them, too.

Those who aren't interested in the multi-user abilities don't have to buy the Butler Server. They can still buy or upgrade to Panorama for the same old prices (\$299 and \$99). Panorama Direct will also be available in a new version. Previously, this was marketed as a lightweight version of Panorama for the casual user. However, it has proven more attractive as an inexpensive runtime version of the product that developers can distribute

with their applications. Panorama direct comes with seven templates for check-book management, phone book, calendar/to do list, calculator, expense reports, and mailing list.

What's New?

The majority of changes found in Panorama 3 are ones that make it a more powerful package for those building applications in Panorama. The two most dramatic, after the SQL server abilities, are Super Objects, and the inclusion of a Word Processor. SuperObject technology allows a Panorama database to be built with 3D buttons, scrolling lists, hypertext, and such, quickly and easily (See Figure 2). The word processor can be included in any database form. It has full Mac formatting abilities, including style, alignment, and tabs. It can even open text files from disk.

Another feature intended for developers, but of much utility to end users as well, is Elastic Forms. Windows in Panorama can automatically adjust to changing configurations and color. Elements on a form may actually slide around as the form readjusts to its new circumstances.

More general improvements are numerous. AppleScript is now supported, as is Drag and Drop between databases (for instance, you can drag from the price list to the order form in the MegaDemo). Equations can be written spreadsheet style, or in Panorama's traditional style—

your choice. Automatic date and time stamps can mark modification of records. Import now permits fields to be matched by name rather than position. There is also a new menu choice, "Select Duplicates," which can work for a single field or across multiple ones. This makes cleansing a database much easier.

There are also over 40 new commands and 75 new functions. Obviously, this new incarnation of Panorama is aimed at the power user. To help you become a power user, developer training tools are simultaneously being released. There is a CD-ROM with over 800 pages of technical information (\$89.95), a book called The Panorama 3 Real World Programming Guide (\$34.95), and an 8-hour course, on video, in Panorama database development, taught by the lead programmer of Panorama (who is also president of ProVue) (\$249.95). All this is in addition to the manual that comes with the program.

Conclusion

Panorama faces some tough competition as its market heats up. Claris has announced that it will soon release a new relational version of Filemaker Pro. This package is the market share leader and Panorama's major competition. Also, competing against Microsoft's FoxPro and ACI's 4-D is going to be a real challenge. However, don't count Panorama out. If you're in the market for a database with which you can build applications, check out the new MegaDemo, built entirely in Panorama; it includes a trial version of Panorama. ✈

Panorama 3
\$299 Upgrade \$99.95

Panorama/Butler Server
\$299-\$899
(depends on number of users)

Panorama Direct
\$89.95 Upgrade \$34.95

ProVUE Development
1841 Gothard, Unit A
Huntington Beach, CA, 92648
Phone: (714) 841-7779
Support: (714) 841-8779
Fax: (714) 841-1479
Sales: (800) 966-7878
First Class BBS: (714) 841-9649
(28.8 baud, 2-Lines)
Internet: sales@provue.com

Two Digital Cameras

A Review of Casio's QV 10 and Rhythm Watch Company's Visimo

by Don J. Modesto

Looking for a presentation machine that fits in your shirt pocket? Try Casio's QV 10. If you take lots of pictures or want a still camera that can double as a video camera, go with the Visimo from Rhythm Watch Company. Just be warned that you may have to go to Japan to buy it.

The two digital cameras have notable strong points. Both boast the abilities not only to download pictures to computers but also to display them on televisions through a video cable. Both have LCDs instead of viewfinders, and both have macro, that is, lens, capability. They allow you to see pictures already in memory in variable viewing modes, and they allow you to erase unwanted images.

Visimo stands for "Visual Intelligent Method." Because the Visimo may never be sold in the United States and because this review is written in Japan, price information appears in yens. At the time of writing, \$1 equaled ¥100 (e.g. ¥4000 equals about \$40).

QV 10

With its capacity for up to 96 visuals for a TV-based presentation and a size that fits inside your shirt pocket, the QV 10 is hard to resist. See Figure 1 for a picture of the camera. It lets you take a presentation on the road, allowing you to do the following things:

- Snap the pictures you need, viewing and erasing those you don't need on the spot. Very considerably, the QV 10 gives you two chances to change your mind before erasing.

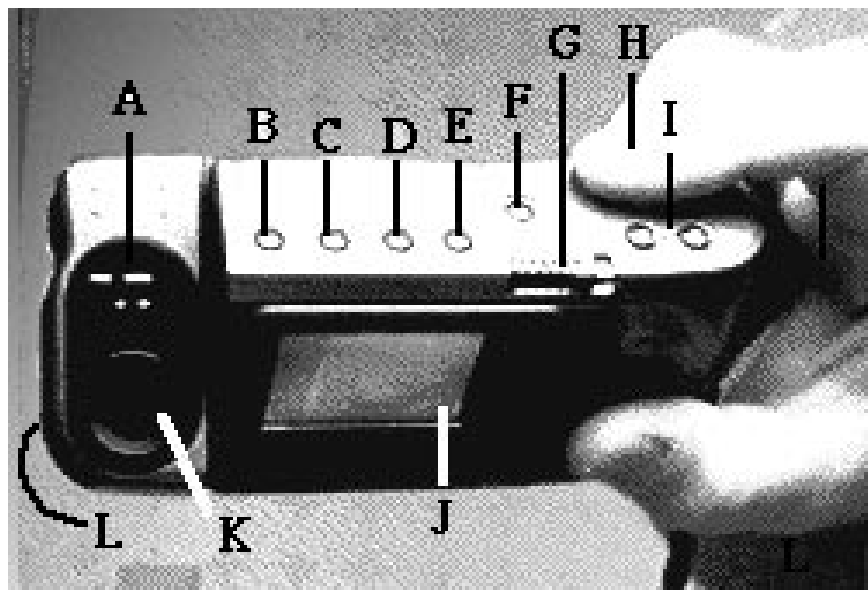


Figure 1. The QV 10 presents its self-portrait.

This picture was taken in a mirror and flipped on a vertical axis so that you see a normal orientation. Note that the lens is pointing toward you. When the lens is rotated past a certain angle, the image automatically flips. In preparing for this article, we didn't have to flip it on its horizontal axis, too.

A. Dim/Bright control switch. B. Protect button. C. Zoom. D. Display numbers your pictures and indicates whether they have been protected from deletion. E. Mode. F. Delete. G. On and Off. H. Shutter (under finger—fingers not included). I. F-stop controls. J. LCD. K. Lens. L. Macro switch. Immediately behind B-E is a hinged panel that opens to the power, video, and digital ports.

- Download pictures to your Mac or PC at 9600 baud through the modem port
- Edit pictures in Photoshop or some other graphics program
- Upload pictures back into the camera along with any text you care to present
- Re-arrange the order of the pictures in the camera and "protect" them, (i.e. keep them from being erased)
- Take the camera to your presentation site and plug it into a TV
- Show pictures separately, in groups of four, or in groups of nine
- Zoom in on pictures and navigate to six different spots in the image
- Control the picture viewing manually or with a slide show feature in the camera, which you can configure with beginning and ending pictures to show one, four, or nine

pictures at a time at intervals from three to 30 seconds.

- Record your presentation to video tape.

LCD & CCD

What people first notice about the QV 10 is the clarity of its liquid crystal display (LCD) panel mounted on the back of the camera. The panel's brightness no doubt accounts in part for the short two-hour life—about the lifetime of a mayfly—of the AA batteries the camera uses. You can adjust the brightness of the LCD with a thumb-screw located at the bottom of the unit. This adjustment does not affect the pictures you take.

It took a while to get used to looking at the QV 10's LCD. The first couple of times I tried taking pictures with the camera, I instinctively brought the LCD right up to my eye, but of course, an LCD is not a viewfinder! And the eye doesn't focus on objects—even beautiful LCDs—three millimeters away.

Instead of film, the QV 10—and the Visimo—use a charged coupler device (CCD). In general, the bigger the CCD, the higher the resolution—more dots—you get in your pictures. With the QV 10's 1/5-inch CCD, you can save pictures in two resolutions: 640 x 480 or 320 x 240. Astonishingly, the native QV 10 format is unreadable by Adobe Photoshop. To edit QV 10 pictures, I had to use QV 10 software to display them on my computer monitor and then do a screen dump with Digital Camera. I would then have to save the screen image and open the resulting PICT file. The entire procedure is a nuisance.

Although there are some similarities, using the QV 10 is a different experience from using a traditional camera. Casio bundles a cleaning cloth with the unit, and it's needed because there is no cover for the LCD panel or the lens to keep them from getting smudged. Move the QV 10 around while in Record mode and you get a choppy LCD view resembling a QuickTime movie played back on an older Mac. Forget a quick succession of spur-of-the-moment shots. When you press the shutter to snap a picture, the image on the panel freezes and you are abruptly told to wait. Only after the image is gone can you take another picture.

Aperture, etc.

Adjacent to the shutter button are two small Plus (+) and Minus (–) buttons that serve the same purpose as f-stop settings. On traditional cameras, f-stop represents the size of the opening of the shutter—the aperture—in relation to the focal length of the lens. It's normally measured in increments as f2.8, f4, f5.6, f8, etc. with each succeeding stop allowing less light into the camera. The bigger the opening, the more light enters the camera. On the QV 10, pushing the Plus button lets in more light. After setting the f-stop and taking a picture, the camera defaults back to auto-metering.

Just under the QV 10's lens is a switch for shifting between dim and bright circumstance. If you start out taking pictures at the pool and then move to a shaded cabana, you would use this switch to let in more light.

On the side of the lens mount is another switch. This one toggles between Normal and Macro modes. Macro allows you to take close-ups. Be warned that the image can get blurred very easily in Macro mode; some sort of mount to stabilize the camera is recommended.

To give the photographer more comfortable viewing positions, the lens on the QV 10 rotates up and down so that you may, for example, twist the device so you are looking down at the LCD while the lens is pointing straight ahead. If you increase the angle too much, however, the image will flip upside down. The latter *is* a feature rather than a bug, as it allows you to take self-portraits without contortions. In practice, however, I don't take a lot of pictures of myself. It would be more convenient for my needs if the twisting function could be shut off so that I could rotate the lens to a greater angle without flipping the image.

Viewing Pictures on the Camera, Television, or on a Computer

By flipping the switch from Record to Play, you can view the pictures you have taken while they are still in the QV 10. The Plus button now moves to the next image in the camera, whereas the Minus button goes to the previous image. Push the Mode button, and the LCD redraws to show four of your pic-

tures at the same time in thumbnail view. Push it again, and you get nine pictures. Push the Plus button, and you go to the next nine pictures. Another button lets you zoom in on pictures, while yet another prevents your pictures from being erased.

Pop the hinged lid on top of the unit, and you have access to the AC line in, video out, and the digital port. Figuring several years' use, you would probably do well to take advantage of the AC line in and invest in an AC adapter for your work at the computer or television. An optional ¥4000 AC adapter is available. You might want to add NiCads with a charger, for that matter.

The digital "port" is a normal serial cable connector on the Mac-end and what looks like an audio jack on the QV 10-end with some adapters in between. The entire connection looks jury-rigged to get the product out the door, but it works. It must be hooked to the Mac's modem port. Data moves along at 9600 baud.

Software

The QV 10 comes with some basic software. I've already mentioned some of what the software lets you do, such as view all the pictures in the camera in thumbnails. It also lets you cut, copy, and paste whole pictures into and out of "albums;" re-arrange the viewing order of pictures in the camera; and open previously downloaded pictures or other PICT files.

The software also allows you to download pictures individually, T` toto, or in sequential groups as "albums" to your computer, and to upload pictures from the computer into the camera.

What the software does not do is let you edit or crop pictures, or save more than one sequence of pictures. When you change the order of pictures and think better of it, you have to re-arrange the pictures again because the previous sequence has been recorded over.

Casio doesn't bundle the serial cable and software with the camera. On first take, this irritated me. Then I realized that it is actually better than forcing everyone to buy those items as many times as they buy the cameras. If you have more than one camera, you don't need more than one cable or set of software.

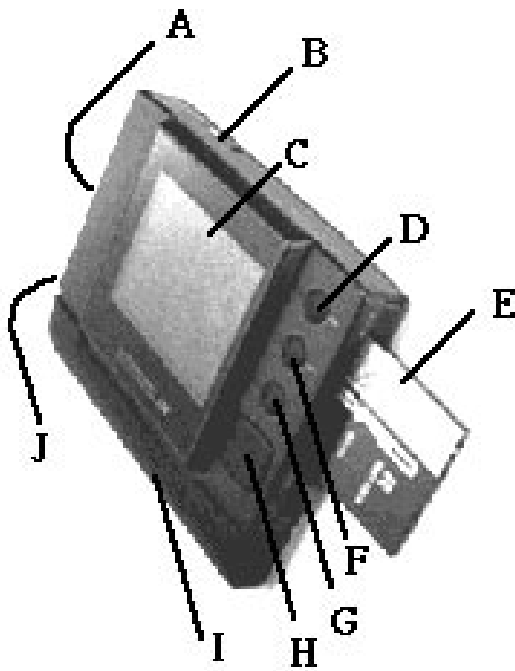


Figure 2. The landscape of Visimo's features is shown. A. LCD Brightness control. B. Video and Digital (serial) ports. C. LCD panel. D. Escape button for moving to more general levels of options—from viewing, for example, to choosing whether to view the PC card memory or the camera's). E. PC Memory card. F. Return button for selecting options. G. Shutter button. H. Navigating button for choosing options or pictures. I. Battery. J. Battery unlock.

Television—Display and Record

Your QV 10 pictures can play on a television as well as the camera itself. Set your TV on video; plug the video cable into the camera at one end and the video-in socket on the television at the other; turn on the QV 10; and switch it to play. Everything that you can do on the camera's LCD you can see on the TV screen: sets of one, four, or nine pictures, autoplay, zoom—all of it.

To record to video tape, set up as above except plug the video cable into the video-in socket on the vcr and begin recording. According to my local Sony shop, you will need a mixer and a microphone to add sound.

The Visimo

Whereas the QV 10 lets you make presentations with still pictures, the Visimo lets you make moving pictures. The Visimo has the capacity to record video and will also take PC (formerly PCMCIA) cards that let it store more images. Check out the landscape of the Visimo in Figure 2.

If you want to use the Visimo for presentations, you have to plan ahead a little more than you do with the QV 10. You cannot reorder images in the camera or upload them, but what you can do is plenty. With the Visimo you can:

- Snap the pictures you need, viewing and erasing those you don't need on the spot. The camera gives you a warning before erasing.
- Transfer pictures between the camera memory and a PC card
- Download pictures to your Mac or PC at 9600 baud through the computer's modem port. Although Visimo's literature promises faster rates, my Mac IIci only got 9600 bps.
- Edit them in Photoshop or some other graphics program
- Take the camera to your presentation site and plug it into a television for playback
- Show pictures individually or in groups of twelve.

The Visimo's strong suit is removable storage. Unlike any other product available in its price range, the Visimo has a slot for PC SRAM, or storage. With a 512k card you can hold 12 pictures. The camera itself holds seven. When you have taken your 19 pictures—more if you have a bigger PC card—you can simply change cards and keep snapping. Unlike the QV 10, you are not constrained by having to download your images to make room for more. The PCMCIA cards, unfortunately, are pricey.

The Visimo's other unexpected feature is its capacity to record video. Simply plug it into the VCR as above for the QV 10. The recorded video image displays smooth, natural movements. Visimo doesn't record sound. Again, for this you will need a mixer and microphone.

LCD & CCD

The Visimo is a 17-by-13.6-by-3.4-centimeter black slab housing a 1/3-inch CCD with an innocuous hole in the front for the lens and a 7.6-by-5.7-centimeter LCD on the back. Like the LCD on the QV 10, the Visimo's LCD is startlingly clear and bright. Snap a picture and the camera immediately asks if you want to save it to the camera's memory or to the PCMCIA card—and whether you want standard or fine resolution. After storing the picture, the display returns, and you can save the image again.

Large icons on the display allow you to navigate the camera's functions, such as Record and Play. Press Escape to take you to the highest level of choices. There you see three icons: one for taking pictures, one for viewing, and one for file management. The meaning of some icons is not always apparent. For example, it took me a while to figure out that an icon of an overflowing bucket under a spigot indicated that memory was full.

The large LCD is a pleasure to look at and makes judging the image easier than the smaller panel on the Casio. You can adjust the brightness of the LCD with a wheel on the side of the unit. Unfortunately, there are no controls for f-stops, no place to screw in a tripod, no provisions for a strap. Despite the sleek battery and AC attachments, the Visimo's shape forces you to hold the camera in your hand for pictures of anything but the ceiling or a very close close-up of a table top.

Viewing Pictures on the Camera, Television, or on a Computer

To look at the pictures you have taken with Visimo, hit the Escape button. Use the navigational button on the back of the unit to select the view icon and underline your current choice. You then choose between viewing pictures stored in the camera or on the PC card.

After you make your choice, the camera draws a 4-by-3 grid of 2-by-1.6-

centimeter thumbnail images. Screen draw is slower than on the QV 10, with more detailed “F” resolution pictures taking longer than “S” pictures. But unlike that camera, the Visimo allows you to interrupt the thumbnails and do something else. The QV 10 insists on finishing each page.

Once you find the picture you want to look at, select it with the RET button. The picture is then drawn at full LCD size. There is no zooming to features of the picture. Hit the left or right navigation buttons to move to the previous or next picture, respectively.

To download a picture to your computer, attach another two-part serial cable and open up the VisiTool for Color software. The software allows you to set which serial port—modem or printer—on your computer you want to use. You can then preview the pictures in the camera, download them all at once, rotate left or right, and invert. As with the QV

10, the software does not ask you to save when quitting. Quitting equals dumping unsaved changes.

The Visimo also allows you to display images on TV and to record them through a VCR. Moreover, if you want a quick and dirty videocam, the Visimo will do the job in a pinch. Plug it into the video port of the VCR, make all your necessary settings and go. No sound, though.

Head-to-Head, Eye-to-Eye

What do you need from a camera? For digital beginners who don't have the budget for Photoshop when it comes to editing images, try Apple's QuickTake 150. PhotoFlash, the software that comes with the camera, offers a well-rounded, basic suite of photo-editing features superior to many low-cost graphics programs.

Want to display your pictures on TV at a party? Either the Visimo or QV 10

will do the trick. Want a camera to show pictures without your having to push buttons? The QV 10's your number. Want to videotape your stills? Again, either will do. Want to videotape some of the dancers? The Visimo can double as a video camera.

Want a compact presentation machine? The QV 10 holds 96 pictures; it lets you upload pictures back into the camera after editing; and it has the most complete display features of the two cameras reviewed here.

The hardware features of both Visimo and the QV 10 far outclass those of Apple's QuickTake 150. Visimo's most notable strong points are its use of removable media and its superior resolution. But at more than twice the price of the QV 10, these features do not provide commensurably better value. All things—price, features, convenience—considered, I recommend Casio's QV 10. ✈

Fuji FV 10/FV 5

by Don J. Modesto

Fuji's FV series is a celebration of ingenuity. Designed to be so flexible it'll make your son's Transformer Robot blush, these video-tape sized cameras display 35 mm slides/negatives, snapshots, small objects, and live video on an AV computer or television.

Slides and Negatives

Stand the FV; pull out the supports. Your film, in a carrier, goes into a slot at the top. Plug the video (or S video) cable into your AV board's video-in port; open viewing software (on Macs use Apple's Video Monitor); set the Subject dial to positive or negative; and turn on the FV. The picture appears on your screen.

The carrier slot shifts up and down for centering the image; that and the lamps twist 90 degrees for portrait/landscape orientation. The FV 10 has auto focus, zoom, and eight masking styles for highlighting images. Copy to an image editing program for saving to disk.

Prints

For developed pictures, select Print, pull open the lamps, and swing the supports all the way up. Turn the unit upside down, place the picture under the unit, and *voilà!*

Movies

Fold the supports down, screw in a mount for tripod use, direct the lamps outward, select Camera, and you have live video. The FV's do not record sound and—as there are no storage disks or tapes—there is no provision for batteries.

FV 10 Versus FV 5

The two cameras are essentially the same with the FV 10 offering more bells

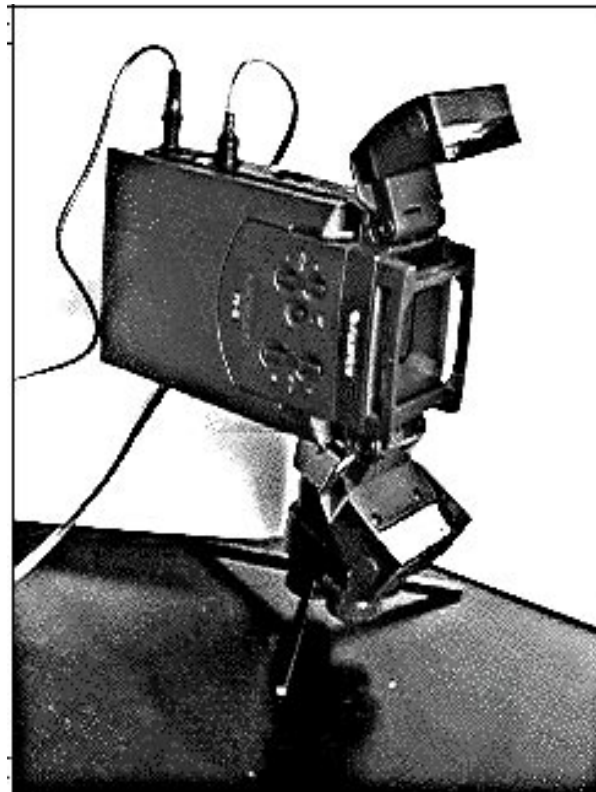


Figure 1.The FV 10 ready to take video movies.

and whistles. On the FV 10, there's stronger zooming, and there is auto focus and masking. The FV 5 does not do movies; it weighs 50 grams more, and lists at ¥21,800 less (about \$218 less).

Resolution

With its quarter-inch CCD (*charged coupling device*, the electronic version of film), the FV 10 provides 41,000 pixels of data (about 320 x 130)—adequate for on-screen graphics or low resolution output. Compare this with Nikon's LS-100, a dedicated slide scanner. It offers just under two million pixels of data for ¥238,000 (about \$2380)—far superior images at three times the price but less functionality.

Final Words

I have had no problems using the FV 10. At first, images were displayed in black and white; though, reducing my monitor's resolution from 19 inches to 16 inches provided color. One could wish that the FV supported digital output—as does Casio's QV 10 still camera, for example—but as multimedia graduates from promise to product, more computers will be video capable anyway.

For presentations, FV's are fine replacements for overhead and slide projectors. For Web pages, a QuickTime movie, or other applications using low resolution, the FV's are unbeatable. They do it all—stills, film, objects, movies—at a moderate price. ☞

Let Your Fingers Do the Pointing

A Review of Point Pad

by Shirley Jackson

The Point Pad is a pointing device, like your mouse or track ball (which is basically a mouse with its feet in the air). You use them to move the pointer in the Finder, to set the cursor in word processors, to click, double-click, drag, etc.

By any other name, it would still point. The Point Pad is a surface over which you draw your finger or stylus to move the pointer. It is similar to the Trackpad on the PowerBook 500 series of portable Macs, plus a few enhancements. On the PowerBook 500s you point with the pad and click with a button adjacent to the pad. The Point Pad is sensitive to pressure and allows you to click on the pad itself.

The Point Pad a 50-by-40-millimeter touch surface housed in a 9-by-5-centimeter frame. It sports two buttons to the left of the touch surface—the lower button clicks, the upper locks. Point Pad comes with a stylus and a 4-page manual but no macro capability.

To operate the Point Pad, simply move your finger or the stylus across the pad. The cursor on screen moves in response. To select an item on screen, either push the lower button or tap the pad. Double-clicking the pad's button invokes the same response as double-clicking a mouse button.

However, not all actions on the Point Pad follow the standard commands of pointing devices. Double-taps are the most surprising. If you double-tap and release on a folder in the Finder, for example, the folder will open. If you double tap and hold, you can drag the folder. To select text in most word processors, you click and drag through the words you want to edit. With the pad, just clicking and dragging does not work. Instead of selecting text, the pad only registers movement. You

have to double-click to register a click and then drag. This in turn means that you cannot make some selections as easily, especially the selection of one word. To highlight a word, you must double tap and release, hold down the Shift key, and click at the end of your selection.

Good Points

Why would you use a Point Pad instead of the trusty mouse? Having tried the pads in stores, I could never understand their attraction. Yet several products like the Point Pad have been released of late, and the reviews invariably mention PowerBook 500 envy. A PB 500 owner explained it this way. With an inordinately broad smile, he told me that he likes the trackpads because they never gum up—a comment that cuts to the quick for a track ball user such as myself. I have spent more time than I care to recall scraping sticky stuff off the rollers under the ball. With no moving parts, trackpads eradicate this chore.

Low maintenance is therefore one advantage of the pads over mice or track balls. Another is that they cut down on the space needed for pointing. Mice demand a fair bit of desktop real estate for roaming. Track balls need about half the space of a mouse. The Point Pad needs about a third the space of a track ball.

Bad Points

But there are disadvantages, too. I've already mentioned some nonstandard pointing actions that can be confusing. In addition, the cursor may respond in quirky ways when you use fingers to control the pointer. I find myself continually overshooting or missing my destination. The reason is that the pad doesn't move the

pointer at an even pace. If it did, you would not be able to use it on larger monitors without frequently dropping and re-selecting items for the long haul.

Moving your finger quickly across the pad causes the pointer to shoot off in the trajectory you described. Although the extra burst of speed is welcome in some circumstances, it comes at the expense of precision. Performance does improve when you use the stylus rather than your fingers.

Two other peculiarities of the Point Pad bear mentioning. There is a 5-millimeter dead space around the perimeter of the touch surface. When you hit this area with the stylus, whatever you were dragging is dropped.

Also, when you click to de-select something, there is a tiny—perhaps a half-second—hesitation that you don't find with other pointing devices. Perhaps the pause goes hand-in-hand with the way the Point Pad selects.

Final Points

For someone on the road using Painter or another graphic program that supports pressure-sensitive tablets, the Point Pad seems ideal. In addition, for the frequent flier, Point Pad can sit on the wrist rest of a PowerBook without competing for tray space with the complimentary nuts. Point Pad can bring greater sensitivity to a PowerBook.

For those just needing a way to move around their word processor, a mouse or track ball will serve better. ☞

Point Pad

Hagiwara Sys-Com Co., Ltd.
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Naka-ku, Nagoya, Aichi 460
Japan

Pointing... and pointing some more.

By Lyle H. Nishida

The mouse has been a part of the Macintosh experience from the beginning. Apple took great pains to design its first mice. These were rather large boxy units which really didn't fit your hand very well. At least they had but one button so as to make the tasks of clicking and pointing much easier.

A lot has changed since those mice. I thought I would reflect on my experience with several of the alternative pointing devices. These pointers are all ADB—Apple Desktop Bus—units so you will need Mac SE or newer system (i.e. made since 1987) to use them.

First up is the new **Apple Ergo Mouse**. It has been given a much friendlier look and feel than the older, square design. The curves of the body feel much more comfortable in my hand. I like the large single button; it takes up the entire front third of the unit. It's tail is 31 inches long. Excellent for new Mac users and kids. The body of the mouse seems to be more flexible than previous editions. Overall an improvement for Apple.

Second, we have the **Logitech Mouseman**. This unit has a three-button set up. You can program the buttons so they can

be used for various functions. Version 1.2 or higher of the driver software is needed to use it with most recent Macs (since '93).

The screen shots demonstrate the multitude of settings provided by the included driver software. I have used it with different settings for different applications. Only right-handers need apply, but I enjoy the feel of this mouse and it is much faster to use than the single-button Apple units.

Third is the **Kensington Turbo-Mouse**. This unit is actually a trackball, not a mouse. It is very popular with several graphic designers I know. It has the advantage of using less desk space than a mouse requires and of being able to navigate larger areas of screen real estate quickly.

I have never found this unit to be very usable. My hands never seem able to get comfortable rolling the ball around and the buttons always seem to be too far apart. I ended up selling mine and trying the...

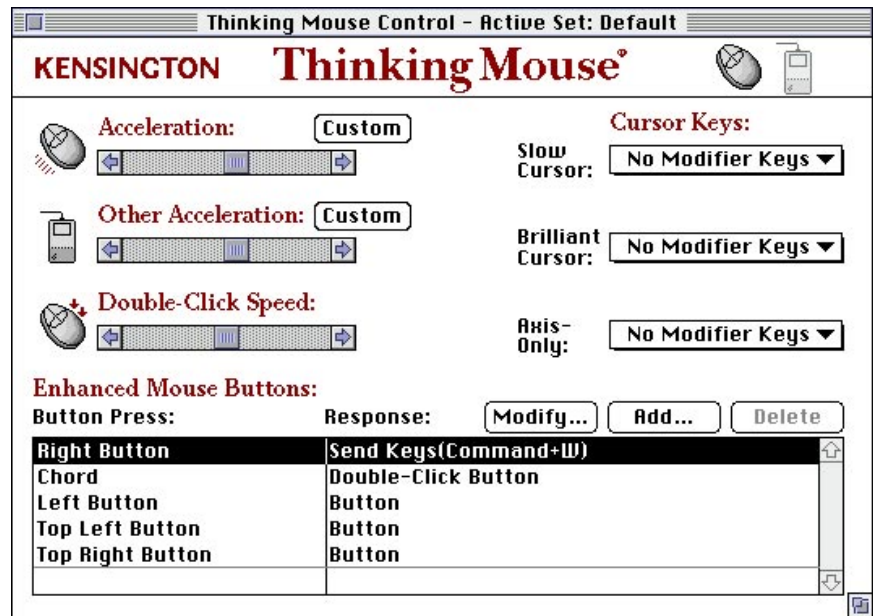
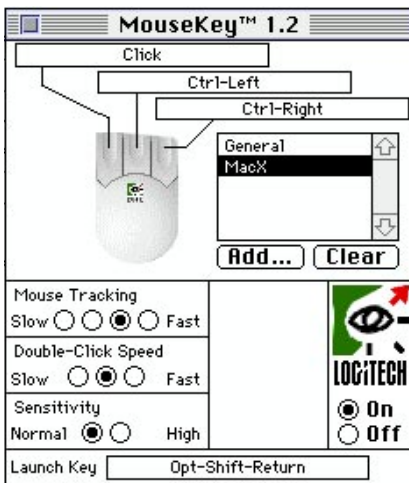
... **Kensington ThinkingMouse**. I picked up one of these little guys and it was love at first click. It seems to fit better in my hand and unlike the Microsoft Defender (Windows product... sorry) does not discriminate against left-handers.

Everything that the single-button mice lack this guy has. More importantly Kensington has not added anything that does not add to the function of the mouse. I use the left button as a regular click, the right button to type Command-W. This closes the active window — a control that I use a lot. Both buttons “chorded” together give a double click. This is faster and easier than a usual double click.

Both Kensington products let you use the software to program cursor speed, acceleration, etc. to endless variables. The screen shot shows some of many possible settings.

For me the proof is simple. The Thinking Mouse works better than the Apple standard mouse. Much better. 🚀

Lyle H. Nishida is on Planet as himself and America Online as LHNISHIDA.



Epson Stylus Pro

Pro Color On A Budget

by Scott Beamer

Epson has recently expanded their Mac beachhead—begun last year with the Epson Stylus Color—by introducing three new models. Their general-use printer, which also has outstanding color abilities, is the Color Stylus II.

The other two new models are aimed at the professional graphics person on a budget. The Stylus Pro is designed to function as an everyday printer but is distinguished by two optional features, a software RIP for level 2 PostScript (Birmy PowerRIP \$250), including the Pantone color matching system software for precise color control, and an interface card permitting AppleTalk or Ethernet connections (\$499). The primary distinguishing feature of the Stylus Pro XL is that it can print full bleed tabloid sized pages at 720 dpi color. While it can print in monochrome, it is not intended for everyday use as such, because the black ink cartridge is also the magenta cartridge, essentially doubling the cost of printing monochrome with it. The Stylus Pro XL has the same Postscript and connection options as the Stylus Pro.

Both the Stylus Pro and the Stylus Pro XL have a new engine employing what Epson calls microdot technology, using dots 25% smaller to print an image. Clearly, the outstanding feature of these three printers is the ability to print color at 720 dpi. Epson now refers to this as “photo quality.” Viewing a full page printout from one of these printers at arms length or more, most would agree. The output is outstanding, apparently identical to a photo.

However, holding the same page closer, for instance at the distance one would read a magazine, some dots become apparent. This as well as some other minor imperfections make me more com-

fortable continuing to call this output “near photo quality.”

To be more specific about the limitations I observed in the printouts, in light colored areas a scattering of dark dots was sometimes visible. In darker areas, a mesh of fine lines would sometimes be visible. Color was uniformly outstanding, and I never observed traditional printing problems of moiré patterns or banding.

A warning is in order. It may be the general user will have to put off finding out just how good this printer is until they buy a new Mac in a year or two. Photo quality color printing is not for the average Mac.

Many people in the market for a printer will be attracted to the Stylus Pro, with a street price of \$800, as it can be used as an everyday printer, yet will allow them to explore the world of (near) photo quality color printing.

While I am sympathetic to this attitude, I feel a warning is in order. It may be the general user will have to put off finding out just how good this printer is until they buy a new Mac in a year or two. Photo quality color printing is not for the average Mac.

I like to think I have a pretty skookum system, consisting of a 660 AV with 16 megs of RAM and a 600-meg hard disk. In truth, this system is a couple of years old, which in Mac years is about middle aged. While evaluating this printer, my Mac performed like it was, too.

Realize that a 600 dpi photo quality image is a file of over 100 megabytes. To work with such an image, you will need a means to acquire it. No, your modem and the Web won't help here.

Hundred megabyte files make poor candidates for downloading. Scanning means you either must also have a high quality color scanner or a means to transport the image from a service bureau to your Mac. Floppies won't work here.

Adobe Photoshop stopped trying to print such an image and demanded more hard disk space until I gave it over 200 megabytes free. Even then, printing the page took over half an hour. The software that comes with a scanner and most Mac graphics software include the ability to increase the resolution of an image from, say 72 to 300 dpi. However, this technique cannot increase the amount of detail in the image, only help hide pixelation if you enlarge the image. Pixelation is the ten-

dency for an image to appear to be made up of small squares as you enlarge it on your Mac screen or in a printout.

There are various ways to keep the file size more manageable. Working with smaller images or lower resolution often helps. Working with PostScript images is another. This won't help with photos, but it can produce outstanding printouts of PostScript drawings. To do this, you will want to acquire the optional Birmy PowerRIP (\$250). It comes with Pantone Color Matching software, as well. However, this software is rather demanding. It requires 14 megs of hard disk space for installation and another 80 megs of free space for image manipulation. Worse, if you want to use it with a printer not on a network, it does not work transparently. You must save your PostScript file into its folder, then open the PowerRIP as an application, and print from it. It will begin printing as soon as it is launched with a file in its print folder.

This means you do not go through the usual Page Setup and Print dialogs. To have access to those dialogs requires a complex set-up using the LaserWriter 8 driver. The most important thing required to get outstanding printouts from any inkjet printer is to choose the paper carefully. I have half a dozen kinds on hand at all times. For photo quality work, in my opinion the only choice is glossy paper (about a dollar a sheet). Epson has recently began offering this type of paper under their own name. I found no difference printing with their brand or any other I had. They all work well.

Epson also encloses a sample of 720 dpi coated paper (about ten cents a sheet) with the printer. This is a reasonable option for good quality output, but it lacks the brightness and photo like finish of glossy paper. I found printing monochrome text on plain paper with the Stylus Pro gave type that appeared a bit more gray than black compared to what I was used to. Using better quality, super white paper helped this some.

For most of us, owning an Epson Stylus will be like driving a Ferrari. We can drive along the freeway, enjoying the sound of the engine, smug in the knowledge that this baby can do over 170 mph. Of course, it may not be that convenient in rush hour commute traffic or going to the supermarket. Most of us will rarely or never push the Epson to its performance limits printing high quality color prints. More important is how it does at everyday printing chores.

In general, I feel the Epson Stylus Pro did OK when compared to its competition, the HP DeskWriter and Apple StyleWriter. With every new piece of software or hardware that crosses my desk, I keep a bug list. I note the last half dozen DeskWriters I have tried out have only a comment or two each. The Stylus Pro has a few pages of comments. Most of these were not serious problems, but I would have to say they are annoying. For everyday printing, I would choose a DeskWriter first.

Installation for the Stylus Pro is not difficult. The printer is designed to be used with either a Windows machine or a Mac. It can be connected to both simultaneously, as they use different ports. Both software sets are in the box. The Stylus Pro comes with neither fonts or ATM for the Mac. For Windows users, there are seven fonts built into the printer. These are bound to cause confusion for the neophyte Mac user, as the fonts are listed with LED lights on the front of the computer. There is no way for Mac users to access them. The first time I tried to use the printer, I gave it a partial page of plain text from Simple Text to print. The job appeared to go to the printer, which made some initial sounds, then nothing. After waiting a couple of minutes, I brought the Epson Monitor 2 to the front. Its progress indicator had barely begun to move in the past couple of minutes. It now proceeded at a leisurely pace and finished the job. It also printed the insertion point of the cursor on the page. A call to tech support eventually came

up with how to reset the software so it would print more normally.

Part of the reason for the speed problem is that it connects to the serial port with a regular serial cable. DeskWriters, connected to this port, can be connected with AppleTalk connectors, speeding up printing a bit. In general, the Epson Stylus Pro is the slowest printer I have tried in some time. Another serious reservation I have with the Stylus Pro is that its ink cartridges are not refillable. This will result in an expense of over \$100 per year for even a modest user of this printer, compared to those using a DeskWriter or StyleWriter and refilling cartridges.

Conclusion

This review makes several significant criticisms of this printer. In fact, I found the printer more usable than this might indicate. Yes, I would recommend most users take a hard look at a similar DeskWriter before buying the Stylus Pro. DeskWriters and StyleWriters are more housebroken products, easier to use and more adapted to the Mac market. However, the key feature of the Epson Stylus Pro is high-quality color output.

I confess, I was not able to do the controlled comparison of the output of this printer with other choices. I would love to print the same file from the same Mac and software on the same paper on the Apple Color LaserWriter, a HP 855C, a StyleWriter, and perhaps the Fargo Primera Pro dye sublimation printer, and then compare the results. I suspect they would all be pleasing. Perhaps I will have come up with some approximation of that test by the next newsletter. 🚫

Epson Stylus Color II \$649/\$449

Epson Stylus Pro \$999/\$800

Epson Stylus Pro XL \$2125

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CIS: GO EPSON

A Printer of Many Colors

A Review of the Hewlett-Packard DeskWriter 660C Printer

by Tristan Li Tom

When I decided that I needed and wanted to be able to print in color, I looked no further than to inkjet technology. For those of us who don't have thousands of dollars to spend, color inkjets are the way to go. They offer astounding results for the money—believe me. My inkjet printer also prints black text such that I can't tell the difference between its output and that of a laser printer!

The color inkjet printer I chose for my Macintosh is the Hewlett-Packard DeskWriter 660C (about \$389, street price as of this writing). This model is virtually identical to the DeskJet 660C, except that the DeskJet is made for use with an IBM-type computer whereas the DeskWriter is for Macs.

Printing in any color on this printer is always a simple, no-fuss operation. The DeskWriter 660C has what Hewlett-Packard refers to as "built-in color." It uses two ink cartridges that always sit in the printer, side by side. One is a high-capacity black ink cartridge and the other, a color ink cartridge.

You don't have to change cartridges when you want to switch from color to black-and-white printing. All you have to do is just print your document. A color document will print in color. A black-and-white document will come out in black and white. Of course, you can still choose to print a color document in black and white.

Make Your Own Postcard

In addition to printing perfectly well on regular plain paper, the DeskWriter 660C can print onto transparencies and special inkjet paper for an even better quality output. But wait, there's more! This printer can also print onto cards such as index cards and postcards, envelopes, labels, and even nonstandard paper!

One thing I really like about this printer is the convenience of being able to print out a single envelope without having to remove the stack of paper from the paper tray.

One Size Doesn't Fit All

Hewlett-Packard did a strange thing that I feel is worth mentioning. It changed the ink cartridges in such a way that the newer DeskWriters cannot use cartridges designed for older models.

For example, the black high-capacity cartridge (HP ink cartridge #51626A) for the DeskWriter 500 series printers looks nearly identical to the one (#51629A) that works with the 660C. But try to put the old cartridge into the 660C, and you'll find that it won't fit. So, if you have some extra, older black cartridges lying around, don't count on being able to use them with a new DeskWriter 660C printer!

Colorful Advice

With the DeskWriter 660C, Hewlett-Packard includes a helpful booklet about color printing entitled, *Creating Colorful Documents*. This booklet features some basic, but nevertheless useful, information on when and where to use color, choosing the right color(s), and jazzing up your documents. The user's guide is comprehensive and easy to understand.

The DeskWriter 660C comes equipped with a power cable, black and color ink cartridges, printer driver, and manual booklets. It works with any software written for Macintosh System 7.0 or higher. It's QuickDraw and QuickDraw GX compatible (and comes with these drivers). Color printing is not available on the Mac Plus, SE, and Classic Macs. The Hewlett-Packard DeskWriter 660C is EPA *Energy Star*-compliant and comes with a 3-year warranty. For instant fax-back information and specifications on this printer via your fax machine or modem, call (800) 231-9300. ✈

Tristan Li Tom is an Authorized Apple Product Representative. He also currently works with the Sound Department at Berkeley Repertory Theatre in Berkeley, California. He someday hopes to own his own consulting business. Mr. Tom is fascinated with Internet culture and can be reached at tristan_li_tom@bmgug.org or at tristtom@aol.com

Telecom

The Brain Bone's Connected to the MBONE

by Kevin M. Savetz

In its short history, the Internet has seen more than its share of revolutions. First came the revolution in global communications with email and Usenet. After that there was the revolution in information sharing with FTP and Gopher. In the past few years, the World Wide Web has revolutionized the presentation of information. Governments, magazines, television networks, businesses, and any number of other organizations are turning to the Web as a new means of getting to their audience.

But the most significant revolution of all might well be the one merely around the corner. With the development of something called the MBONE, the Internet suddenly becomes a hotbed of real-time multimedia communications.

In essence, it becomes a brand of interactive boardroom, classroom, television, cinema, videogame, and edutainment—of the kind only dreamed of in the hype about the information superhighway. The MBONE will make it possible, eventually, for all of us to start our own Internet-based TV show, if we wish, without so much as an FCC license or a transmitter. Or to teach in an online classroom with students from ten different states. Or to participate in an important videoconference with researchers from around the globe.

On the Internet, and typically in real life, new technologies are first available to a core group of inventors and experimenters. If it's good enough or interesting enough or worthwhile enough, word gets out. Other folks begin to hear the wonders of the new technology; they want to try it out; they find out what they need; then they spend whatever time and money is necessary to join in. Slowly, the tech-

MBONE will make it possible, eventually, for all of us to start our own Internet-based TV show, if we wish, without so much as an FCC license or a transmitter.

nology gains wider and broader acceptance, with more and more people taking part, until at last it becomes so common that it's practically a household word. Take, for example, electronic mail, or the World Wide Web, or the waffle iron.

Over the past few years, the MBONE has been making its way onto the Internet slowly and experimentally. But its speed of adoption may be about to increase exponentially, because even those of us who today rely on home computers and mere modems will soon have access to the technologies necessary to bring it into our homes.

Today, we "regular Internet users" are at the cusp of a new multimedia revo-

lution. Those of us pushing the limits of a 14.4k bps connection can already use of some cool new multimedia tools (see my last article on radio on the Net) In the coming months, true multimedia will become more commonplace for "regular users" as our bandwidth limitations decrease and as hackers continue to improve compression methods for stuffing more information down that thin 14.4k bps link.

What is the MBONE?

The Internet has traditionally been built to send information to one person (or computer) at a time. The information being transmitted has a specific destination in mind, such as an email message that tries to reach a specific (single) colleague. A request for a Web page is transmitted to a single host, and the host sends back the requested information to the single recipient. Although computers can handle hundreds (or thousands, or millions) of these requests every second, the information being moved around is still one-to-one. One computer is sending the information, and only one is receiving it.

This seems like a perfectly fine arrangement, until you consider what happens when you want to send information simultaneously to more than one person. Let's use an email message as an example, one to which you've attached a graphics file. If you send that message to your friend in England, you'll chew up a certain amount of bandwidth. Now, as any seasoned Internaut knows, you can address an email message to two, three, or twenty people at the same time. If you send this file to all twenty, you create twenty times as much Internet traffic. So if a band like R.E.M. wanted to transmit a live concert across the Internet to 150,000 of its clos-

est friends, well, you can easily imagine how quickly the Net would clog up.

The next generation of groundbreaking tools on the Internet will be "IP multicast" or "MBONE" programs. These tools change the rules of the road: they allow packets of information to be "broadcast" to anyone who is "listening" rather than to a single, specific individual or computer. These packets aren't sent individually to each recipient; instead, only one stream gets sent, but it ends up at all the specified destinations at (more or less) the same time—this is called "multicasting".

You can think of multicasting as the Internet's version of broadcasting. A site that multicasts information is similar in many ways to a television station that broadcasts its signal. The signal originates from one source but can reach everyone in the station's signal area. The signal takes up some of the finite available bandwidth, and anyone with the right equipment can tune in. For those who don't want to catch the signal, or don't have the right equipment, the information passes on by.

Why is this interesting? Because IP multicasting lends itself to a whole new way to publish information on the Internet. Instead of the electronic equivalent of a one-on-one chat, you can have a megaphone, broadcasting to everyone who cares to listen. And the people who do the listening can send something right back, not just to you but to everyone else as well.

The MBONE—which stands for "multimedia backbone"—is today's implementation of IP multicasting. As the MBONE gathers steam, it promises a thorough and irrevocable shift in how the world communicates. It promises, in other words, a revolution of its very own.

MBONE is for Power Users

Although the MBONE is free to use for anyone who has the right equipment, the hardware and connectivity requirements are much greater than those of the common home Internet user. A PC or Macintosh system coupled with a standard modem doesn't have enough computing power or bandwidth to send or receive MBONE transmissions.

You need a good deal of power to handle multicast IP. Today, multicasting software—the behind-the-scenes tools for moving, encoding, decompressing and manipulating multicast packets—is only available for high-end UNIX workstations, such as those from Sun, DEC, HP, IBM, and Silicon Graphics.

This is changing, however. Multicasting tools are becoming available for Linux—a free UNIX-like operating system that runs on (relatively) cheap IBM PC-compatible computers. Since MBONE tools can work on a Linux-based PC, it's not too much to imagine that soon, MBONE tools will be available for home computers like PCs running Microsoft Windows and the Macintosh. It will prob-

ably take the most powerful home computers (with Pentium and PowerPC chips), but it seems to be a likely eventuality. The software tools are being built. PC/TCP v2.3 from FTP Software, Inc. supports multicasting for PCs, as does Windows 95, and it is rumored that the next version of MacTCP will support multicasting.

Even for those who have the hardware to do multicasting today, there's another huge hurdle preventing the MBONE from taking over the Internet.

That hurdle is bandwidth. Most of us just don't have enough of it. A multicast video stream of 1 to 4 frames per second eats about 128k bps of bandwidth, about 9 times the speed of a 14.4k bps modem. Audio multicasts, partly because of their lesser bandwidth requirements, are more common on the MBONE than on video. Multicast audio typically uses 56 to 64k bps of bandwidth.

Today, there are about 1,700 networks (in about 20 countries) on the MBONE, meaning the MBONE is available on approximately 3 percent of the Internet.

The MBONE needs to come a long way—overcoming today's limitations in bandwidth and computing power—before it becomes a household word.

However it's very likely that within the next few years—given the growing popularity of ISDN and the advent of improved data compression techniques—the MBONE will become the next "killer app" of the Internet. ☞

With the MBONE, you can

- collaborate with colleagues in real time using a shared virtual "whiteboard"
 - hear and see live lectures from famous professors or scientists, and even ask them questions
 - listen to radio stations "broadcasting" on the Internet
 - if you are so inclined, start your own radio show
 - see live pictures of spacebound NASA astronauts working on the Space Shuttle
 - attend a virtual poetry reading, hearing the speech in the author's own voice
 - see and hear rehearsals of Silicon Valley garage bands
 - attend an Internet Engineering Task Force meeting without leaving your office
- ... And although the following things haven't happened yet, in the future the

MBONE may allow you to

- watch a customized version of CNN right from your computer's desktop
- engage 5,000 other people in a huge intercontinental computer game
- see reruns of Gilligan's Island, and share your snide comments in real time with far away friends
- put your own garage band's rehearsals online for all to see (and hear)
- automatically download and install authorized upgrades and bug-fixes to your computer software, without your intervention
- "chat" in real time with 20 others—like with the current Internet Relay Chat, except using your voice instead of your overworked fingers
- do plenty of other things that haven't been thought of yet.

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The Internet with ISDN

by Kevin Savetz

Sooner or later, we all succumb to The Feeling. We try to be calm, we take deep breaths and count to ten. Patience is a virtue, we tell ourselves. Good things come to those who wait.

But these rationalizations do little good. Eventually, we all give in, screaming at our intrepid modem, "Hurry up, you obsolete bit-pushing paperweight!"

Our modems are too slow. You don't have to be a multimedia maven to be a victim of this sentiment—regular people, not just the gurus uploading 40-meg QuickTime movies—are stricken with The Feeling.

Everyone feels it. While cruising those pretty, graphics-laden Web sites. While downloading software. While playing Bolo. But the modem—that piece of hardware that uses analog signals to connect you to the Internet—can only take you so far.

Sure, you can upgrade, as I did, to a 28.8k bps, v.everything modem. But The Feeling will return, and soon that screamer will become, in your eyes, as fast as molasses during a freeze.

You've gone as far as analog will take you—is it time to switch over to ISDN? ISDN—Integrated Services Digital Network—is a service that will let you connect to the Internet (or any other service that supports it) at up to 128k bps, about nine times faster than a 14.4k bps modem.

ISDN certainly isn't as fast as the ultra-high-speed Internet connections sported by many large businesses and universities, but for a small office, or even a single power user, it moves data around the Net at a very respectable clip.

Crossing the Limit

My home office is wired for ISDN. Now that everything is set up, configured and tested, I couldn't be happier. Getting everything set up, configured, and tested, however, was another story. I've heard some real horror stories about getting ISDN Internet service to work. In my experience, it wasn't that bad. But the process does require patience and money. One of the major benefits of ISDN is that you can connect an entire local area network, rather than a single PC, as with an analog modem. This involves putting all your computers on an Ethernet, then linking the ISDN modem—er, router—to the Ethernet.

My burgeoning home office sports a trusty Mac, a grudging Pentium, and a laptop. The laptop included built-in Ethernet. The PC and the Mac did not—I slapped a couple of Ethernet cards into the machines and configured them. An Ethernet hub (about \$120) rounds out the mess of new cabling showering my desk.

I spent about about \$100 each on Ethernet cards for my Mac and PC. You can get them cheaper, but I can't bring myself to trust a \$20 computer board.

At the business end of my little Ethernet network is an ISDN router. When I try to access the Internet from any of the connected computers, the router wakes up, logs me in to my Internet Service Provider (ISP) in about three seconds, and I'm on the Internet. It feels like a permanent Internet connection—when I need it, it's there. When I stop using it for a certain amount of time, it silently disconnects.

Choices

Now, there are other ways to go about this. If you only want to hook one PC to the network via ISDN, you can get an external serial port device or an internal ISDN adapter card. The former acts like a conventional modem—you dial out (using MacPPP, or Internet Chameleon, for instance), connect to the Internet, and cruise.

The downside of this is that your serial port can be a bottleneck—on most computers, serial ports don't crunch happily above about 57,000 bits per second. If you have a 128k bps connection to the Internet, you won't feel the magic; your serial port just can't go that fast. On the upside, serial port ISDN hardware is relatively cheap—around \$500.

The other way to connect, via an ISDN adapter card, offers the best of both worlds. It's a card that you plug into your computer—it does the business of routing your packets around via ISDN, but since it usurps your PC's serial port, there's no pesky 57k bps speed limit. Remember, though, that this method is only good for connecting a single computer. Adapter cards cost between \$800 and \$1000.

The method I chose, an external ISDN router, was the most expensive (I spent around \$1,300 for the unit and the Ethernet equipment I needed), but it's the only way to connect multiple computers. If I had three arms, I could cruise the Web from all three machines at once, sharing the bandwidth between them.

Configuring the router wasn't nearly as easy as plugging in a modem and typing "ATDT". (Remember the first time you configured your PC to talk with SLIP or PPP? It's much worse than that.) If you've never configured a router before, expect it to take a few hours, and hope for a patient tech support person at your ISP.

Other Parts of the Puzzle

It takes more than hardware to get on the Internet with ISDN. Your phone company provides the actual ISDN service. ISDN works over the regular telephone wires already in your home or office. Much like a standard phone line, your telephone company needs to come to your home, install a jack, and test it.

Unlike adding regular phone line, you may (as I did) have to wait several weeks before an ISDN-savvy installer ar-

rives at your door. Once he arrives, expect to spend some quality time with the telephone man. My installer was here for over three hours before he was convinced that everything was working properly.

The cost for ISDN service depends on your telephone company—as they say, your mileage may vary. Pacific Bell charges a modest setup fee, plus a reasonable monthly rate of less than \$30 per month. With Pac Bell, ISDN is a "measured rate" service; you pay for every minute you're online, even if you are making a local call. At a penny a minute, though, the price is fair.

Finally, you'll need a place to connect to—an Internet Service Provider that provides ISDN access. The cost of this varies considerably from ISP to ISP. My Service Provider, Santa Cruz, California-based Scruz-Net, charges a reasonable price—a "part-time connection" costs \$175 per month for unlimited connect time at 128k bps. A "full-time connection" (for businesses or people running a server, who need a constant connection) runs \$310 per month, plus a \$570 setup charge.

(By the way, Scruz-Net provides first-rate service. The staff is helpful, and

the connection is unparalleled. I'm not just telling you this because they provide me with a gratis account.)

Just the Beginning

ISDN can do much more than connect you to the Internet. Armed with the right equipment, you can use it to make standard voice phone calls, send faxes, or even call your favorite BBS. ISDN can even do two things at once. You can send a fax to one place and receive a fax from another, or utilize a 56k bps Internet connection, while taking a voice call. If you actually want to do these tricks, it will cost you more.

Getting Internet access via ISDN is moderately expensive, a little frustrating, and takes longer than you'd expect to get it working the first time. However, if you need a fast Internet connection, it's absolutely worth it. 🚀

Kevin Savetz

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CGI Basics

from a lecture given by Dan Meriwether

WARNING!

The topic of this article has been known to cause headaches and a mild spinning sensation in laboratory technicians.

CGI, Common Gateway Interface

Lecture outline:

- What is it and what can it do for me?
- Two Interactive Models
- How CGIs are written and designed
- Uploading and Debugging your CGI
- The System Administrator's concerns
- The Future

What is this ZG-eye thing?

CGI - Common Gateway Interface

AKA: FooWare, MiddleWare, Middle-end, a Common Gateway Interface is an overly complex term for a piece of software that facilitates communication and information transfer between a World Wide Web Browser, commonly called the front end, and some sort of process, commonly called the back-end.

Examples:

- Initiates an email response: A user sends information through an HTML forms page. The CGI formats the text and sends the information on to a mailing process. Once the mailing process is finished, the CGI sends a job receipt back to the browser. This is the type of CGI that we will be examining in this article.

- Queries a database: A user enters a query either through a forms based HTML interface, or through an ISINDEX query. The CGI formats the query into a form that the database understands and passes the query on to it. Upon receiving the result, the CGI formats the returned information and passes it on to the browser complete with linkage to each of the results.
- Sends out a graphic: Upon loading a page, a CGI is signaled to create or load a graphic that relates to some time or event based criterion.
- Builds a customized HTML page: Based upon information available from the user's browser application, or based upon choices the user has made, the CGI is prompt-

ed to dynamically create a full page. An example would be a CGI that measures the display capabilities of your browser and builds a page that the browser is capable of viewing, for example, no graphics for a LYNX browser, etc.

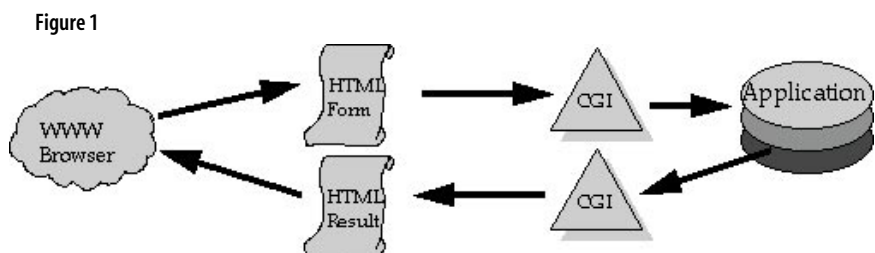
- Bills a Credit Card: Acts as either a direct interface to a credit system, or, more commonly, a recorder of customer orders.

Two Methods of Design

There are two possible functions or roles that a CGI can fulfill, that of the information conduit and that of the processor itself.

Facilitates Information Transfer

This is CGI's most common role, acting as a facilitator, for example, a 'mail-back form processor' (Figure 1)



Acts directly Upon the Data

A CGI can act directly on the data, for example, a counter script or WAISPERL, a PERL 5 extension that is capable of creating a Wide Area Info System query without the aid of a WAIS Server. (Figure 2)

CGI tools and design

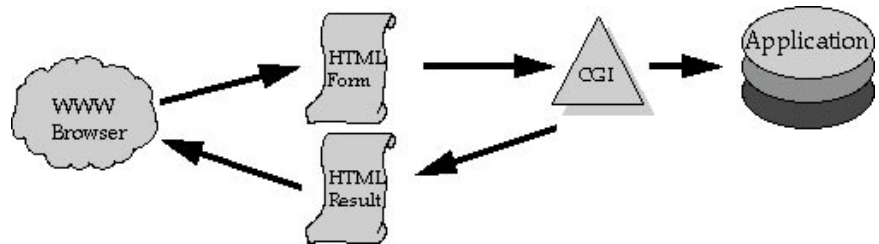
Programming Languages

CGIs can be built in any language that can be either executed, compiled or interpreted within the same system that the Web site is on. Languages commonly used to create CGIs include: C/C++, Shell, AWK, PERL, TCL, AppleScript, Frontier, etc.

Benefits/disadvantages of the various languages:

- Speed: Generally non-compiled languages are slower. CGIs on sites that get tens of thousands of hits per hour require a compiled language like C or C++. CGIs based on executable languages, like Shell batch files, are almost always slower than compiled CGIs. Interpreted languages such as PERL and AppleScript, are, for the most part, faster than Shell CGIs, but slightly to considerably slower than compiled CGIs.
- Security: Improperly written scripts can easily create an open door for wily users. Shell scripts and Shell calls within other types of scripts must be carefully written to prevent a user from causing crashes, obtaining secure information, gaining access to a prompt, etc.
- Ease of development: Generally, the benefit of the non-compiled languages (shell, PERL, AppleScript) are that they are easier to write and develop. Compiling CGIs requires addressing issues that are specific to each platform whereas PERL scripts, for example, are generally portable.

Figure 2



CGI Authoring Tools

The best tool to help in writing a CGI is the source code of someone else's CGI that does a similar function. Libraries, as we will discuss later on in the article, are a half-way between finding a pre-built CGI that meets your needs and writing your own from scratch. There are now several books out that address CGI authoring that include functional examples.

CGI development automation

Any time there is a great deal of public interest in a process that is fairly complicated, such as writing a CGI that interfaces with an SQL (Standard Query Language) database, eventually someone comes up with a manner to automate the process, or at least make it easier. CGI writing is no exception. There are a growing number of tools for building CGIs for databases and other back-end processes. A few searches on Internet index sites, such as Lycos or Yahoo will come up with numerous resources.

Design Priorities

HTML makes the sale; it's the visual hook, so it controls the initial design and investment decisions. The CGI is built around the HTML first, and the back-end process second. HTML pages that are designed around the CGI tend to show it. If the user sees a completely uninspiring form in front of them, the likelihood of that person filling it out drops dramatically.

Next, consider the back-end. How does the information need to be presented to the back-end process? For example, a database dictates the use of the query format.

The CGI is subordinate to both factors; but this does not mean that the CGI doesn't need to be elegantly designed and built. Much behind-the-scene processing can go on in the CGI. The CGI can check to see that the user filled out the form correctly, supplied the correct (or near correct) information, and many other nifty things. For example, I know of someone working on a server-based fuzzy logic URL locator. Instead of the user getting back, 'error 404, file not found' the user will find a page that says, "you typed in 'buffelo.htm', did you actually want, 'Buffalo.html?'"

Figure 3

```
<FORM METHOD=POST ACTION="http/cgi-bin/mailback.pl">
```

Writing HTML Forms

Design:

Natural incorporation: forms should be created as integral to the entire page, not an overlying kludge. The most successful pages are those whose elements work together seamlessly.

Adjusting for spacing and font size:

Consider different browsers and platforms when designing any on-line documents, especially when the page is built on-the-fly or contains server-side includes. Each browser has a different definition of 'normal' fonts, leading, and spacing. A common error is to design a form that looks perfect on your screen, and not check the same form on another machine or browser.

Construction

The first step in building an HTML form is the FORM declaration. This is done with the FORM tag which looks like Figure 3 (above).

METHOD: POST vs. GET

There are two (so far, with 'PUT' not too far in the future) methods of sending information to the CGI from the HTML form;

- POST: where the user-input information is placed in the 'body' of the message and

- GET: where the user-input information is appended to the URL that the information is sent to.

With POST, the form can accept a great deal of user-supplied information whereas with GET, because all the information is being appended to an already long URL, the amount of transferable information is limited. For most purposes, it is best to design your forms to send a POST. If there are very few possible fields, such as a database query, GET would be suitable.

ACTION: or, for most CGIs, 'where to send the info'

The ACTION parameter of the HTML form declaration tells the server where to send the information, or, more correctly, where the server is to look for a process that can deal with the information it has received. It is in the form of a standard HTML path. The path is usually something like 'usr/bin/cgi-bin/yourCGI.pl'

CGI could be in the same directory as the HTML page. The service providers Best, Portal and Zoom allow CGIs in the home 'public_html' directories on their users directory. Having immediate access to your CGIs is useful, especially for debugging; it's faster than submitting to a Systems Admin. and waiting for approval.

Form Elements

There are three categories of elements in HTML 2.0, those that send text, those that send a selection, and those that initiate the processing. We will only touch on these as they are beyond the scope of this document and well documented elsewhere.

Sending text is primarily taken care of by the INPUT tags, which allows two types of modifiers, `text`, and `password`, in which the text the user types in is hidden. Also covered in the send text category is the TEXTAREA tag which allows multiple line entries.

It is sometimes important to know what to expect from the product of the HTML form. For the text input part, the output is the text that was typed in, with spaces changed to '+'s and other illegal characters changed to something that can be sent over the net. See examples in Figure 4 (below).

Figure 4:

```
<INPUT TYPE="text" NAME="test-text" VALUE="default" SIZE="20"
MAXLENGTH="20">
```

```
<INPUT TYPE="password" NAME="test-password-text"
VALUE="default" SIZE="20">
```

```
<TEXTAREA NAME="test-text-area" ROWS=4 COLS=40></TEXTAREA>
```

Figure 5

```
<INPUT TYPE="checkbox" NAME="test-checkbox" VALUE="test-value">
<INPUT TYPE="radio" NAME="test-radio" VALUE="value" CHECKED>
```

Choice selection, where the reader selects an item from a list or from a set of selections, is taken care of by a variety of methods: checkbox, radio, or select.

1. Checkbox and radio allow the user to select either multiple or one-of-many concurrently visible choices respectively. See examples in Figure 5 (above).
2. Select allows the user to choose items from some sort of menu. The style of the menu is dependent on several factors: If the size is defined as 1, then the browser will display a pop-up menu, otherwise, or if multiple items can be selected, the browser will display a scrollable menu. See examples in Figure 6 (below).
3. The final category of elements are submit and reset buttons. The submit button pressed when the user has completed the form and wants to send it off to the CGI. See examples in Figure 7 (below).

Writing CGIs

What follows is a very simple, no-frills, PERL CGI for reading information from an HTML form and sending it to the address specified in the "open(MAILER)" line. Let's proceed through each line, discussing the meaning and importance of it.

The variable names (or keys) that this script expects are:

1. which_form	the form (name) that the information is submitted from, usually in a <input="hidden"> tag
2. persons_name	the submitter's name
3. email_addr	the submitter's email address
4. the_comments	any comments that were entered, usually in a <TEXTAREA> tag

Side note: there are considerably more tags than are presented here, and the list is growing daily. For example, there is the HIDDEN tag which, for example, will let you know which page generated the Email if you are using the same CGI for multiple pages.

Figure 6

```
<SELECT NAME="selection" SIZE="1">
<OPTION SELECTED>selection 1
<OPTION>selection 2
<OPTION>selection 3
</SELECT>
```

Figure 7

```
<INPUT TYPE="submit" VALUE="send">
```

```

#!/usr/local/bin/PERL
# Original by Peter Shipley (Shipley@dis.org)
# Modifications by D. R. Meriwether (DRM@dis.org)

require "cgi-lib.cgi";

%in;
    &ReadParse;
    &SendNote;
    &SentReceipt;
    exit 0;

sub SendNote {
    open(MAILER, "|/usr/sbin/SENDMAIL foo@barr.com") || &Print_error_and_die;
    print MAILER "Content-type: text/plain\n";
    print MAILER "To: foo@barr.com\n";
    print MAILER "From:$in{email_addr}\n\n";
    print MAILER "Subject: AutoWWW response from $in{which_form}\n\n";
print MAILER <<"EOF"
    Person\'s name: $in{persons_name}\n\n
    Person\'s email: $in{email_addr}\n\n
    Person\'s comments : \n\n $in{the_comments}\n\n
EOF
;
    close(MAILER);
}

sub SentReceipt {
    print "Location: http://www.barr.com/~foo/thankyou.html\n\n";
    return;
}

sub Print_error_and_die {
    print "Location: http://www.barr.com/~foo/error.html\n\n";
    exit(0);
}

```

Declaring to the language

The first line of the above CGI is a declaration that the following script is to be interpreted by PERL. It also gives the

location of the PERL executable (application in Mac-speak.) The words and slashes before the word, 'PERL' are the

path, starting at the root of the system, that the querying process must traverse in order to find PERL.

Annotating your script

It is very desirable, and just good programming, to make as many observations and comments about the script as possible. Comments should be made about the portion or stage that the script is in, the variables that are expected, used, or generated, and what other processes are needed to execute the script (SENDMAIL, WAISPERL etc.) Commenting out is achieved in UNIX scripts via the # (hash) mark. One can comment out at any point in a line. The comment, in other words, where you have signaled the interpreter to ignore the text, continues from the first instance of the hash mark to a new line (carriage return.) The above script does not contain very many comments because of this commentary.

Using libraries

Libraries are chunks of code that perform specific tasks. For example, cgi-lib by Steven E. Brenner, is a PERL library that is fed the information from the HTML form, reads it (removes all the "escaping" i.e. '+' and '%70' s) and returns an associative list consisting of keywords and their values (parse.) There are ways to do this within the script itself, but, since this is code that you will use repeatedly, it is easier and more efficient to use it as a separate library.

Libraries are included into a script with a "require" command. Once the required script is found by the interpreter, the entire script is inserted into your script. On the down side, including increases execution time.

The main script

The next five lines, starting with '%in' are the entire script. We will go into each line individually, but, in brief: The second line runs a subroutine that reads and parses the information from the HTML form. The third line, '&SendNote;' sends a note, containing all the information, to the owner of the HTML form; you can see the sub-routine, 'SendNote' just below the main script. The fourth line sends a receipt to the person that submitted the form, like a 'thank you'; you can see that sub-routine below the SendNote sub routine. And the last line exits the script.

The ReadParse sub-routine:

You may have noticed that you could not find the sub-routine called, "ReadParse." That is because that sub routine is defined within the cgi-lib. You'll remember that by requiring cgi-lib, we effectively included the entire text of it. Within cgi-lib, is a sub-routine called ReadParse whose functions we discussed under the heading, 'Using libraries.'

The SendNote sub-routine:

This is the first sub-routine that you, the reader can see. It is first declared by the command, 'sub' then the name of the sub-routine. After the declaration, 'curly' brackets encompass the extent of the sub-routine. The next line is a compound statement. Without getting into too many details, it defines a variable, 'MAILER' as the application (process) SENDMAIL, tells SENDMAIL who to address the message to, then opens a port or channel to SENDMAIL.

The two bars at the end of the parentheses are, in PERL, a logical "or" operator. If for some reason the script has trouble executing any of the steps in that line, the script then moves to the sub-routine, appropriately named, "Print_error_and_die" which is defined at the end of the script.

The next line uses the command, 'print', which is a throwback to the old days of computers, when things were 'printed' to the screen, or another process etc. The script 'prints' whatever is in the quotes to the variable MAILER, that, you recall, is the open port to the application SENDMAIL. What it prints is an interesting thing to point out. The terms following the Content type tell the SENDMAIL application that the information it is about to receive is an email message, which of course, is always plain text. After that, each field is printed to the SENDMAIL channel one line at time, until the '<<"EOF"' command. '<<"EOF"' means, "print until you find a line with a solo left justified 'EOF' as its only con-

tent." After the EOF is the last command which closes the port to the SENDMAIL application, effectively sending the email message.

SentRecipt:

The sub-routine, SentRecipt, simply prints a URL to the browser that submitted the form.

Throughout the parts that are printed, you may have noticed a lot of backslashes in front of certain characters like single quote and '@.' These are called escaping characters. To PERL, a straight up @ means something, namely declare an associative variable, called "barr.com." These special characters must be escaped. A '\n' means 'New line' to PERL and UNIX.

Improving the script

Though it should work, this script is primarily designed for demonstration. As any experienced PERL author will tell you, there is vast room for improvement within this script. Important parts of any mature script are elements like contingency planning, Failsofting and creating universal or non-system dependent scripts.

Uploading and Debugging

Uploading

IMHO (In My Humble Opinion), for the Macintosh, the best utility for uploading anything to a unit server is Dartmouth's Fetch. The current version is capable of uploading through drag-and-drop, while at the same time, setting the permissions of the uploaded files. CGIs require "world" executable permission to run. There are, however two modifications to Fetch's default behavior that I recommend:

- By default, Fetch applies a 'dot' extension to the upload. While this is great for beginners, it is troublesome for experienced users. HTML documents need to have the extension of either htm or html,

Fetch's default places a .txt, .hqx, at the end of the filename.

- GIFs are an interchange format and are therefore ready to be uploaded as 'raw' data. Fetch's default is to encode the binary into a transfer encoding scheme. If the GIF is uploaded encoded, the browser will not be able to read it.

HTML vs. CGI uploading

There is an difference between uploading HTML documents and CGIs. HTML generally ignores line feeds, new lines and carriage returns in favor of the marked tags like <P> and
. End of line characters in CGIs, on the other hand, need to be understandable by the operating system that they will ultimately run on. There are numerous utilities available for the Mac that allow this translation, my favorite of which is BBEdit Lite.

Placement of CGIs

Placement of the CGI script depends on the type and configuration of the HTTP Server. Most servers include the ability to allow users to run CGIs from the user's home directory. Most administrators consider this an unacceptable security risk and turn off the option. If the system allows local CGIs, all that is required to make a CGI work is for it to have world-executable permission and that it has the extension, '.cgi.' On systems where the administrator does not allow home directory CGIs, the process is a little more time consuming. You proceed through as much debugging as possible and then send a note to the system administrator asking if they would please (and remember to say please, buy them lunch or something) upload your CGI to the cgi-bin. When sending CGIs to the system administrator, it is very much in your best interest to try and make sure that the CGI is elegantly written and most of all, functional and secure without modification. If the CGI does not work, the system administrator will not

be all that happy to fix it. If each of your CGIs are well done, the Administrator will begin respecting your work and you will realize a faster turn-around. Before you bother the System Administrator, be sure that he or she has not created a generic CGI that will sufficiently accommodate your needs.

Debugging (PERL)

- Syntax errors

Syntax errors, small mistakes in the order, phrasing, or position of commands, are the first, and often easiest, errors that are to be found in the development stage of a script. Mac PERL does a good job in locating syntax errors.

Note: It would be nice if MacPERL showed the line numbers in the script window, as that is how it reports the position of the error, but hopefully that will come in a future version. In the mean time, BBEdit displays line numbers.

The command line (in UNIX) for running a script through to check for errors and report them is:

```
PERL -c -w {filename}.
```

- Escaping

Putting a backslash in front of a reserved character to cause it to be read as a literal, is possibly the most common type of syntax error. Often the PERL interpreter will report an error in escaping as an undefined variable or run-on line.

- Failsorting

At suspect areas of the script, you can write code that reports information about the status of the script. At execution time, the script gives this information, such as the value of a variable, to make it easier to follow the thread of the process.

System Administrators Concerns

Security

Aside from where-in-the-world-they-are-going-to-get-time-to-do-any-of-the-ten-million-things-that-they-need-to-do-by-yesterday, security is the

System Administrator's primary concern. Things that will catch the Administrator's eye will be lines that pass expressions or make calls to the shell. Some of the people who fill out the HTML forms could be malicious hackers. If the CGI passes unevaluated expressions to the shell it could open up a considerable security hole in the system.

Stability

Next to time and security, System Administrators are concerned about whether your script will bring down or destabilize any of their systems. Bad programming such as illegal constructs or infinite loops tend to do just that.

Use of resources

There are three issues that fall under the flag of resource abuse:

1. Excessive bandwidth - scripts that search, such as robot cataloguers, tend to engulf large parts of the ISPs line very rapidly with their report-backs.
2. CPU time - if your script does some outrageous calculations or something, since it is running 24 hours a day, it can annoy a System Administrator with an overloaded system.
3. Disk space - having your script replicate itself or a large file at each hit tends to eat disk space pretty quickly too.

The Future

Libraries and extensions

Just as we saw in our sample script, libraries have become an increasingly important resource for CGI authors.

Following the recent (or not-so-recent depending on your perspective) trend towards object oriented programming languages, Larry Wall, the author of PERL has introduced PERL 5 which allows extensions. Extensions are somewhat familiar to Mac users. One extension we've already discussed is WAISPERL, which allows direct queries using PERL as the WAIS interpreter. This addition is something like two orders of magnitude faster than using a standard WAIS server.

Generic CGI

Generic CGIs are scripts that accept information from any user of the system, processes it and return it to the location specified in some manner by the sender. These are now generally built by individual System Administrators to save time, but will be eventually replaced with standardized Generic CGIs.

Kitchen Sink CGIs

What I call CGI that have a multitude of functions built into them. One CGI can do most anything, therefore there are fewer CGIs to support.

Simplified CGI development

High level interpreters for high level languages, ad infinitum.

As previously mentioned, there are already several tools for developing query CGIs using a very graphical interface. The trend is that there will be such tools for developing most any CGI, if the market demands such tools.

Vender supplied/supported CGIs:

Many companies are building pre-built CGIs to make their applications easier to incorporate into a Web server, such as Oracle's SQL database and {rumors of} Adobe's Fetch (an application for cataloging, storage and retrieval of images, not the Internet utility.) Some are going so far as to add a Web server as part of the application. ☞

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John Wiley & Sons, NY 1995*

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transcription.*

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on Basic CGI authoring at the BMUG InternetSIG 9/
1/95 and the Bay Area Internet Users Group (BAIUG)
9/6/95.*

Getting Online with BMUG Boston

A Guide to Connecting to BMUG's Boston BBS, via the Internet

by Roz Ault, BMUG Boston co-administrator

To connect to BMUG Boston via the Internet, you need two pieces of software:

1. **FirstClass Client** (version 2.7 is recommended; nothing earlier than 2.6 will work).
2. The **BMUG Boston settings** file. Make sure you have the file whose splash screen shows Botticelli's Venus with the tag line "a virtual harbor in cyberspace." (You can copy and modify another settings file, but it will be easier to start with the correct one.)

Double-click on the settings file to open it, and follow these steps:

1. **Login screen.** Don't type anything on this screen. Click on the **Setup** button (Figure 1).
2. **Setup screen:** Select **TCP-IP.FCP** from the "Connect via" popup list. (Note: If you are dialing in directly, you would select **Modem.FCP** here. You can switch back and forth between modem and TCP settings if you wish, simply by changing this popup selection.)

Type your User ID and password in the appropriate boxes.

Make sure the IP number is entered as shown. Or, in place of the number, you could enter the server name: **bmugbos.org**

Click the **Save** button. Then, click on the **Setup** button at the top of the screen (Figure 2).



Figure 1. BMUG Boston login screen.

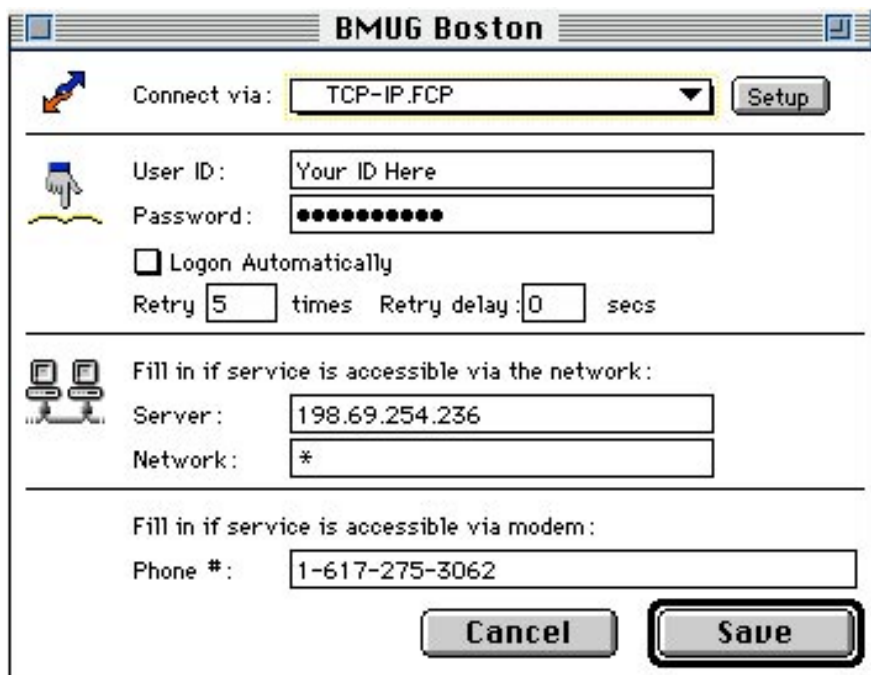


Figure 2. Connection setup screen.

3. **TCP-IP.FCP setup:** Click on **Advanced Settings**, and be sure the TCP Port is set to **3004**. Then click the **Save** button (see Figure 3).

THIS IS VERY IMPORTANT: If you do not save port **3004** in your settings, the BBS server will not allow you to connect!

4. Initiate your local Internet connection (e.g., connect via PPP).

5. Once connected to the Internet, press the **Login** button on the FirstClass **Login** screen (Figure 1). You will be connected to BMUG Boston, if there are ports available. The performance you experience will depend on the bandwidth of your Internet connection, and network traffic conditions.

6. If you are a new user on BMUG Boston, you must fill out the registration screen with your complete name and address as they appear in the BMUG records.

7. Once at the FirstClass Desktop, you must open the NewUser folder and respond to the message: **“New Callers: Read and Reply.”** If you do not respond to this message, you will not be validated, even if you are a BMUG member in good standing. Note, too, that your BMUG membership entitles you to a membership on **one** BMUG BBS. If you already have a membership on Planet BMUG, you may sign up for a BBS-only membership on Boston if you wish to maintain accounts on both systems.

Connection Notes:

You must have a PPP, SLIP, or better connection to the Internet. “Internet access” offered by online services such as America Online will not work.

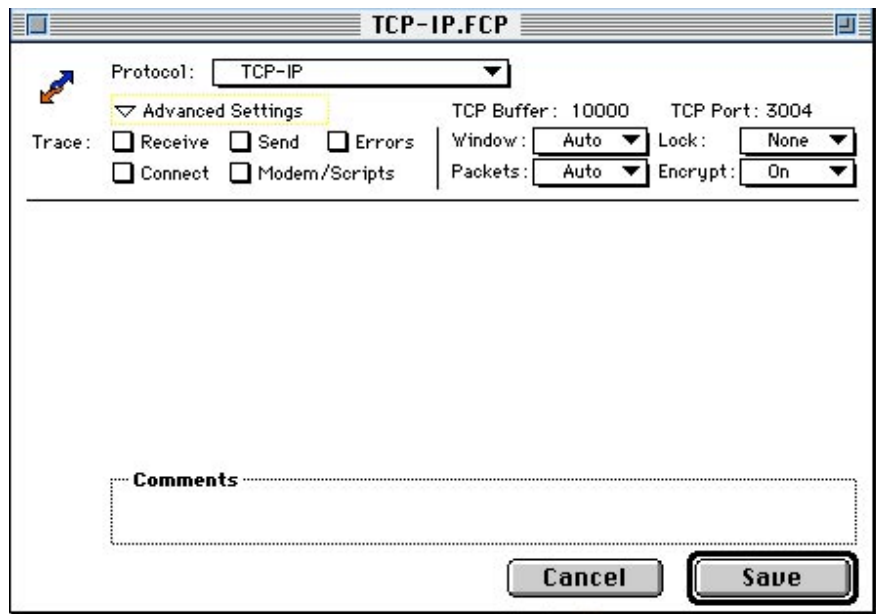


Figure 3. Advanced Settings screen.



Figure 4. New User desktop on BMUG Boston.

BMUG Boston has six direct dial-up lines, accessible via modem. We hope to have all our modems running at 28.8 kbps by the time you read this. As of Fall 1995, the configuration is as follows:

617-275-3062, 3063, 3064 - 14.4 kbps
 617-275-3065, 3066, 3067 - 28.8 kbps

BMUG members in New England who do not yet have direct Internet

access may want to look into the BMUG discount offered by The Internet Access Company of Bedford, Mass. (where the BMUG Boston server is currently located). TIAC maintains local numbers throughout New England, and in New York City. More information is available on the BMUG Boston BBS. ☞

How to Get Online with BMUG

An Updated Guide to Connecting to BMUG's BBSes via the Internet

by Jeffrey Rotblatt, et al

Planet BMUG and BMUG Boston and are BMUG's electronic Bulletin Board Systems (BBSes). Each uses FirstClass software from SoftArc.

This article will introduce new members to this software, and tell how to get online with BMUG.

What's Available in this Article

We'll tell you about the software used to run and access the BBSes, how to get started, and how to decide which BBS you'd like to call home.

We'll show you how to configure your settings to work with your modem and how to set your UserID and password.

Also provided is a section on how to troubleshoot the most common telecom problems.

What's Different About Each BMUG BBS?

Planet BMUG is located in Berkeley, California and BMUG Boston in Bedford, Massachusetts. BMUG Boston has a smaller population than Planet BMUG with 11 phone lines and about 1,800 registered users. Planet BMUG currently has 17 phone lines and about 4,500 registered users.

Most of the conferences on the BMUG BBSes are gatewayed, or mirrored, to both sites, so each member should choose which BBS to use based on their location and which will cost less to call on a regular basis.

For Those Who Don't Read Manuals

Here are the abbreviated instructions for connecting to Planet BMUG, or the BMUG Boston BBS for the first time. Don't forget you can read the rest of this article for more details.

0. Turn on your Mac and modem.
1. Launch on the FirstClass Client application. When it asks you to choose a settings file, select BMUG Boston or Planet BMUG BBS file. (If you're not sure which one to use, see *What's the Difference?* below).
2. Customize your settings.
 - Adjust for your brand/make of modem (see *Adjusting Your Settings*).
 - Enter your UserID and password (see *Passwords & UserIDs*).
 - Make sure the phone number is correct and that you have included the area code (and a 1 for long distance) only if required.
 - Save your changes.
3. Connect by pressing the Login button.
4. Fill out the Auto-Registration form that greets all new users (see *Connecting for the First Time*).
5. Request validation (this is an important step, Please see *Validation* in the main article below). The validation process involves having a Validation Volunteer check your request against BMUG's membership database. Please allow approximately one week for this procedure.
6. Please be patient—BMUG BBSes can be very busy. Oh, and have fun!

FirstClass Software Unveiled

When you first joined BMUG, you received a disk labeled FirstClass *Client*. This disk contains the software you need to log on to our BBSes. If you did

not receive this disk, call BMUG and request one.

We couldn't fit everything we needed on a single disk without compressing the data, so we've provided it as a self-

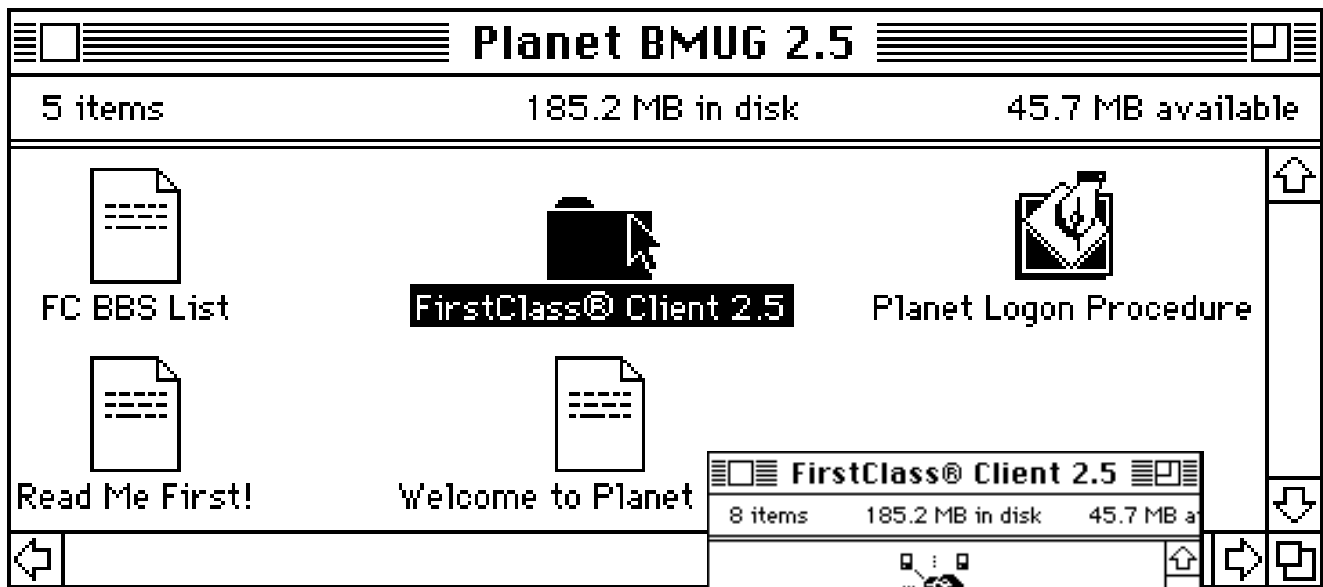


Figure 1. The FirstClass folder (above) and its contents (right).

extracting archive (.sea). Double-click the icon named "FirstClass.sea," and a dialog box will appear requesting a location to which the file should be decompressed. When finished with this operation you will have a folder similar to Figure 1.

FirstClass Client is graphical user interface (GUI) software that is required to connect to any Bulletin Board System running the FirstClass host software.

The Settings folder is where you should store settings files. New settings files must be configured for each First-Class BBS that you call. Downloads will automatically be placed in the Download folder, unless you specify another location when saving them. For now, ignore the Modems and FCP folders, as more attention will be paid to them when appropriate.

Each settings file contains information tailored for specific BBSes, such as special icons created for Planet BMUG and BMUG Boston, sounds, etc. They also store the BBS phone number, your password, UserID, modem settings, and so on.

These settings will need to be configured before connecting the first time.

Configuring Your Settings and Connecting for the First Time

Step I. Starting FirstClass

Launch the FirstClass Client application by double-clicking on its icon.

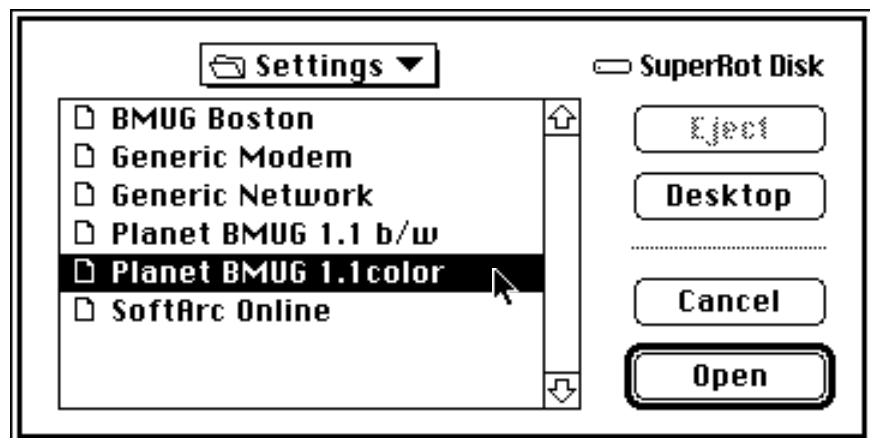
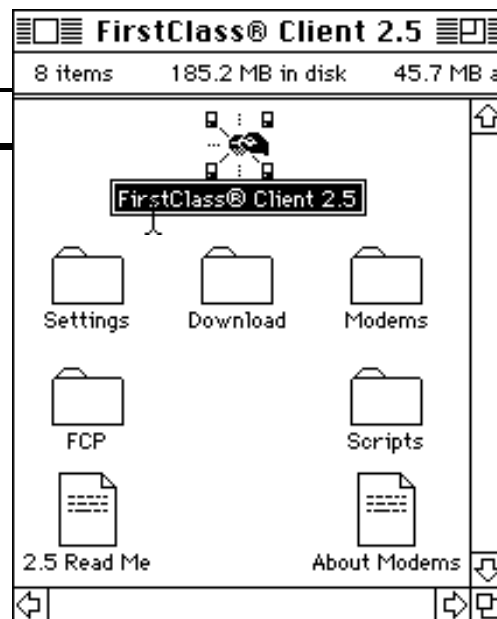


Figure 2. The Settings open dialog box. This is where you choose whether to connect to Planet BMUG or BMUG Boston, in color or black & white.



Figure 3: The Splash Screens.

When you see the Settings open dialog box (Figure 2), choose the BBS you want to connect to. You might want to use the black and white BBS settings file if you want to save hard drive space or have a Macintosh capable of black and white only.

Step II. Splash Screens and the Login Window

The Splash Screen (Figure 3) and the Login window welcome you to BMUG's BBSes and let you know which BBS you will connect to (Figure 4).

The Login window also lets you know how many times your modem has dialed the number. We'll leave the fields for your UserID and password for later.

For now, click on the Setup button.

Step III. The Connection Setup Window

After you click the Setup button you'll get to the "second page" of the settings file (Figure 5).

BMUG does not supply you with a UserID and password; you create these when you first connect to the Planet.

UserIDs & Passwords

Unlike some BBSes, rather than using "handles," users here go by their real names—which you'll enter on the system when you login. The UserID and password here are only used to identify

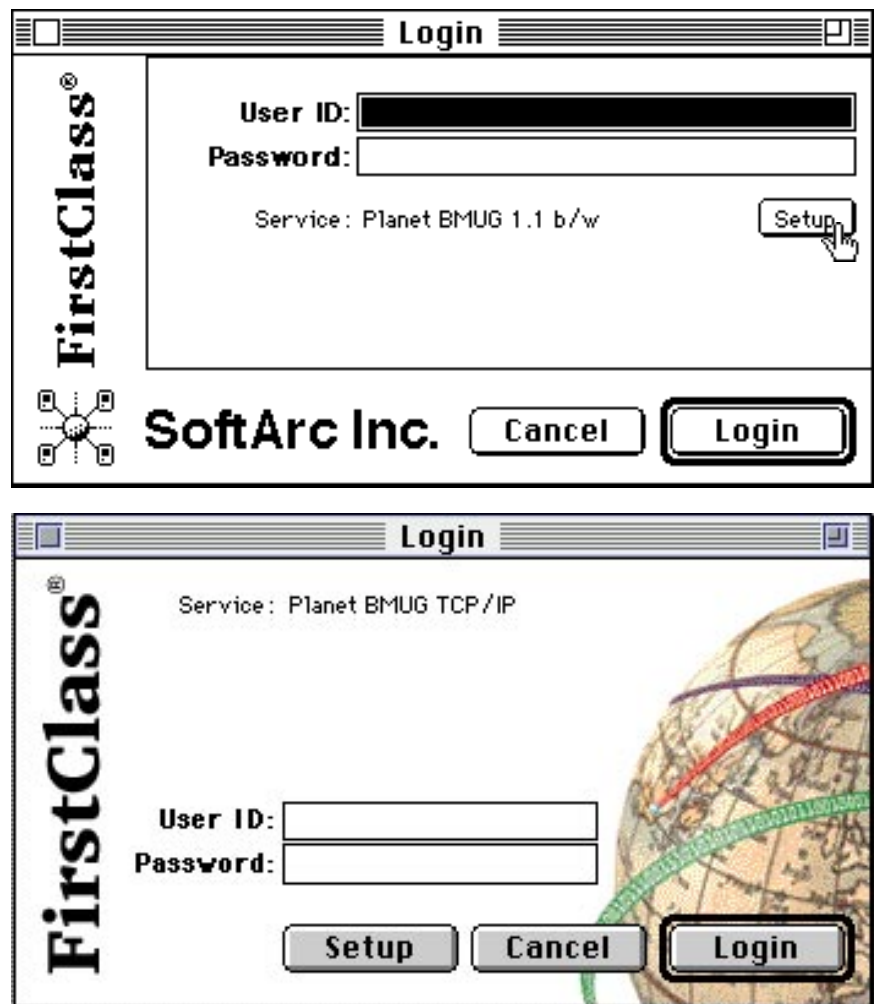


Figure 4: The infamous Login window. You'll get to know this window well!

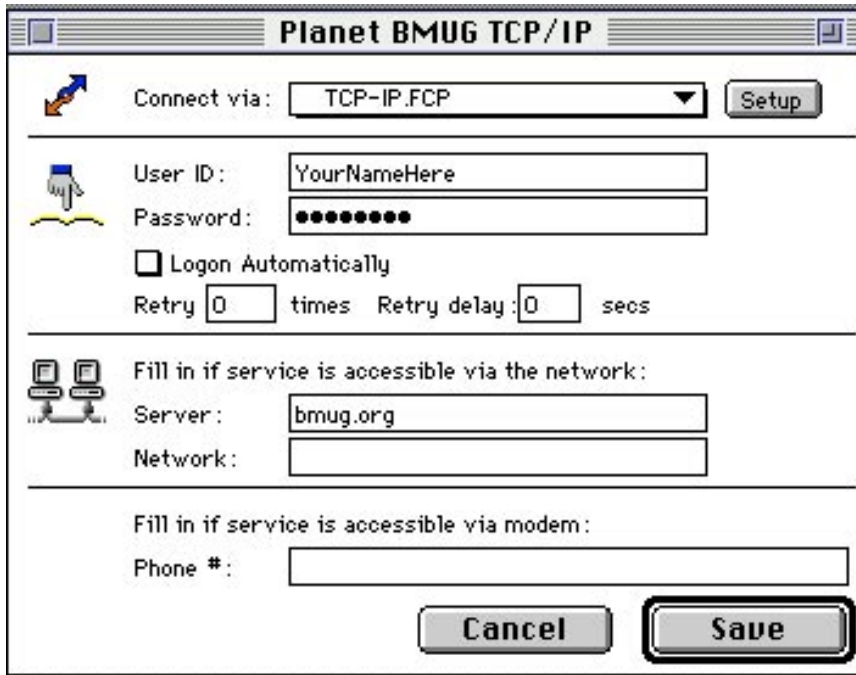
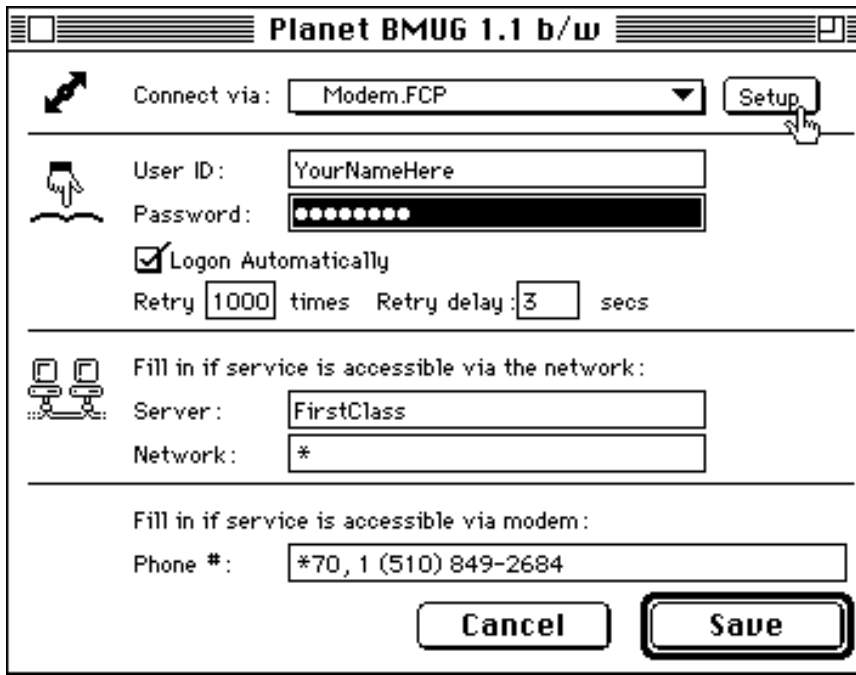


Figure 5: Configuring your settings file.

you to the system. BMUG does not supply you with a UserID and password; you may create any UserID and password you wish, with the following restrictions:

- Once you connect and actually create your account, you are stuck with that UserID. You can, however, change your password whenever you like (and you should, about once a month, for security purposes).
- UserIDs must be 15 characters or less.
- UserIDs can not include special characters (i.e. *, &, %, :, etc.); you must use standard numbers and letters only.
- UserIDs must be unique; only one person can use a specific UserID. If you connect with a UserID that has already been taken you will get a message indicating there is no such user.

Password Security

BMUG's BBSes are reasonably secure, but here are some ways to make your password harder to guess and your account more secure:

- Choose a password of at least 6 characters.
- Choose a password that can't be found in a dictionary; no real words, mix numbers and letters.
- Choose a password that someone cannot guess. Don't use names, initials, dates, or phone numbers.
- Be sure to memorize your password as well as keep it secret. Write your password and UserID on a piece of paper and store it in a secure location, not with your computer.

If you type and save the UserID and password in the "second page" of the settings file the software will store this information when you close the window. Keep a back-up copy of this file on a floppy disk (in a secure location) in case you lose the data on your hard drive.

Phone Numbers

Enter the phone number of the BBS you wish to connect to in the Phone #: field.

Check to see that your modem will dial exactly as you would. Inserting a comma will make your modem pause.

BBS Phone Numbers

If inside the 510 area code:
849-2684

If outside the 510 area code:
1 (510) 849-2684

To turn off Call Waiting for the duration of the call:
*70, 1 (510) 849-2684

If you need to dial a number for an outside line:
dial-out #, 1 (510) 849-2684

BMUG Boston:
1 (617) 275-3062

Because the BMUG BBSes are so busy you may wish to set your modem to retry 100 times before it gives up. This, hopefully, will enable your modem to get onto a line which another user has just left before someone else gets it.

Step IV. Modem/Network Window

Click the setup button (Figure 5) to configure the settings to address your modem (Figure 6).

Make sure protocol is set to serial, the port is set to whichever port your modem is connected (if you have an internal modem it is connected to the Modem port), and set dialing to whatever your phone company supports; most modern systems use Tone dialing.

Set the baud rate to the highest rate your modem supports (the maximum speed of the BMUG BBSes is 14.4 Kbps as of this writing), and turn H/W Handshake on if you have a 9600 baud or faster modem.

The Pop-up Modem Selection Menu

If your modem is not listed in the pop-up Modem selection menu (Figure 7) pick a generic modem such as Basic AT.mdm or Standard 2400. These generic settings may work to get you connected at which point you can ask for help from BMUG members online. Press the Save button when finished or your changes will not be saved.

Step V. Saving Your Changes

Press the Save button to return to the “second page” of your settings file. Click Save and you’ll be returned to the Splash Screen. You should now be looking at the Login window (Figure 4). If all is well you will see your UserID and, for security purposes, a bullet for each character of your password.

Make sure your modem is turned on, and click the Login button. Your settings file will now initialize your modem and attempt to connect with a BMUG

```

hceek.MDM
AE DataLink.MDM
Apple Data 2400.MDM
Apple Express.MDM
Apple GeoPort.MDM
Apple PB Internal.MDM
Apple Personal 1200.MDM
AT&T DataPort.MDM
ATI etc\e.MDM
• Basic AT.MDM
BestData 1442FH.MDM
Bocamodem 144.MDM
Cardinal 144e.MDM
Digicom MacScoutPlus II.32.MDM
Digicom ScoutPlus II.32.MDM
Digicom ScoutPlusTurbo.MDM

```

Figure 7: Modem selection menu.

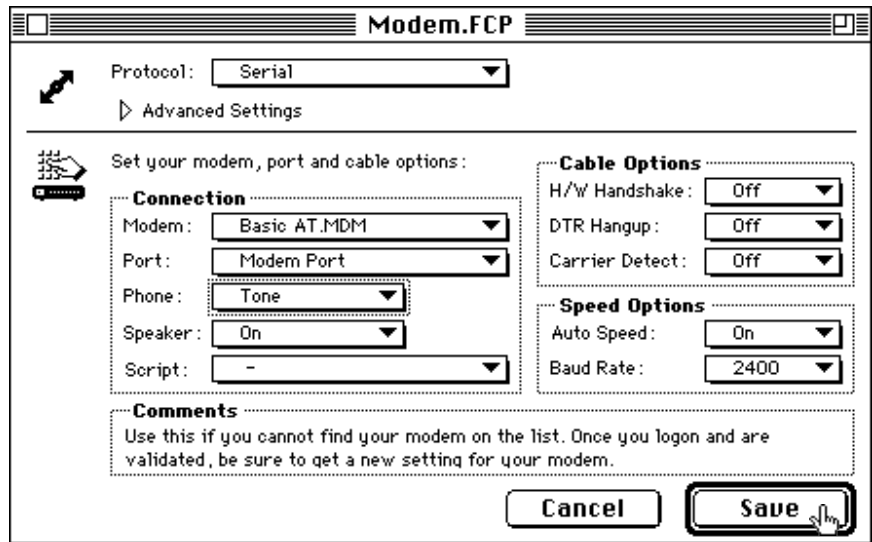


Figure 6: Make sure to select the correct modem, turn H/W Handshaking on if appropriate, and select tone dialing if you have that service.

BBS. Be prepared to wait while it tries to connect many times, redialing each time it hears a busy signal, until it finally connects.

Configuring Your Settings and Connecting to Planet BMUG via the Internet

Planet BMUG is accessible either via the Internet, or by direct modem dial-in. These instructions explain how to initiate an Internet connection. See the note at the end for dial-up connections.

1. Make certain you are using First-Class Client 2.6 or higher. Version 2.7 is recommended.
2. Make certain your connection to the Internet is a PPP, SLIP or better connection from a service provider with full-time Internet access. “Internet access” offered by online services such as America Online will not work.
3. Use the Planet BMUG TCP/IP First-Class settings file.

If you can’t get this settings file, you can make copy of another FirstClass settings file, and set it up as follows:

- From the first (Login) screen (Figure 1), click on the Setup button
- On the setup window (Figure 2), choose TCP-IP.FCP as your connection method from the popup list at the top of the screen.

- Type your User ID and password in the appropriate fields.
- Make sure the Planet BMUG’s IP address is in the Server field of the connection setup window. You may use either the IP number—206.80.36.91—or the domain name: bmutg.org.
- Click on the Save button.

(Please note that clicking the setup button next to “Connect via : TCP/IP.FCP” will take you to the TCP-IP.FCP setup screen. **You should not change any of the Advanced Settings. This is very important!!** If you change the port from 3004 to any other number, the server will not allow you to log on!)

4. Initiate your local Internet connection (e.g., connect via PPP).
5. Once connected to the net, press the Login button on the FirstClass Login screen. You will be connected to Planet BMUG if there are ports available. The performance you experience will depend on the bandwidth of your Internet connection, and network traffic conditions.
6. If you are a new user on Planet BMUG, you must fill out the registration screen with your complete name and address as they appear in the BMUG records.

Connecting for the First Time Auto-Registration

Look over the Auto-Registration form in Figure 8 carefully. FirstClass allows only a few minutes to fill out this information, so be prepared when connecting for the first time. The name you enter here will be the name other users will see on the BBS, and is not associated with your UserID. BMUG does not allow the use of "handles" or pseudonyms, so be sure you enter your real name.

You may wish to omit your middle initial, as it can make things less convenient. For instance, with it your Internet address on the BMUG BBSes would be: `firstname_middleinitial_lastname@bmug.org`. This makes it a bit of a pain for others to address Internet mail being sent to you, and seems overly formal on the BMUG BBSes.

You may also want to use your common name, in place of your legal first name. For example, some prefer to be called Bob, rather than Robert. If you choose to eschew your legal first name, you *must* make a note in your Validation Request message.

Once you've filled out the Auto-Registration screen, click the Register button. If everything is kosher, you'll get a "Registration Confirmed" message (Figure 9). If not, retry the steps. If it still won't work for you, you may want to call the BMUG Helpline, at (510) 540-1742.

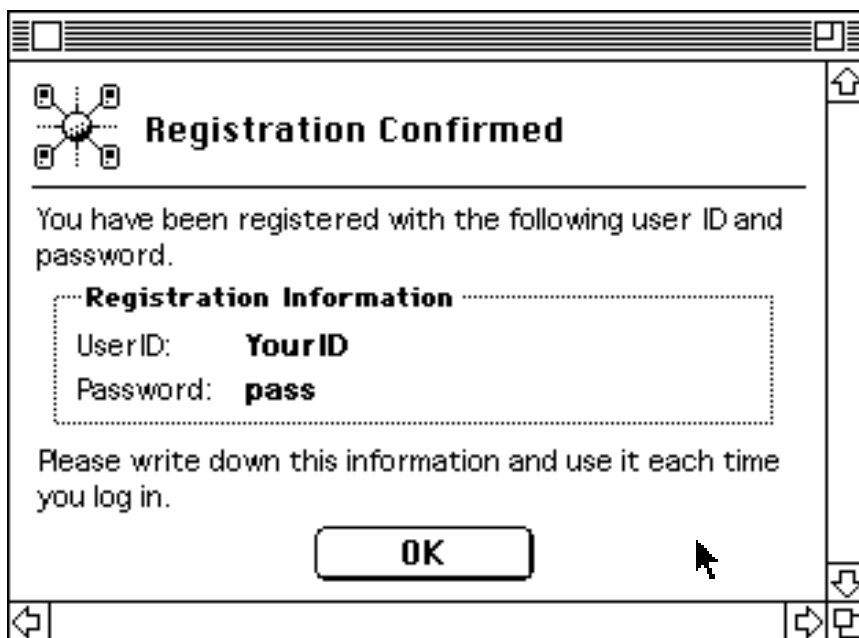


Figure 9: You made it!

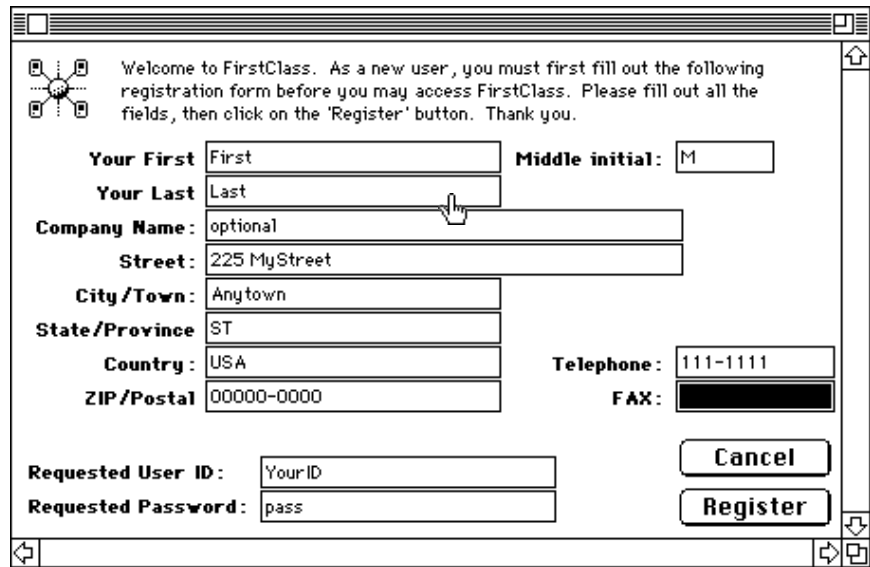


Figure 8: The Auto-Registration window. Take a few minutes to look it over, as there isn't much time to fill it in once you are online.

Once you get online (Figure 10) go to the New User folder and read the BMUG Read-Me-First file (Figure 11). It's informative as well as required.

To Request Validation

On Planet BMUG, open the New User folder, and follow the instructions therein. Open the Request Validation folder (Figure 12) in the New User Info folder and create a new message by typing Command-N, or using the Message Menu (Figure 13).

Type "Requesting validation" in the subject field and please include your membership expiration date, daytime phone number(s), and "Please validate me" in the body of the message (Figure 14). You can send the message by typing Command-E, or selecting Send from the Message menu.

On BMUG Boston, open the New User folder, read the document named *To New Callers*, and follow the instructions therein.

Please allow at least 5 working days for the Validation Volunteers to process your validation request. (We always encourage members to volunteer at the office and help move things along!)

Until your account has been validated, you will not be able to send

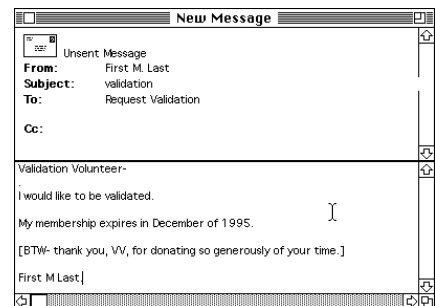


Figure 14: Requesting validation is this easy! 'VV' refers to our fantastic Validation Volunteers; they work many hours to keep up with the hundreds of validations requested each week.



Figure 10: The FirstClass "Desktop" This is where you find yourself when you connect to the Berkeley-based Planet BMUG. As long as the New User Info folder appears in the lower right corner, you are not yet validated.

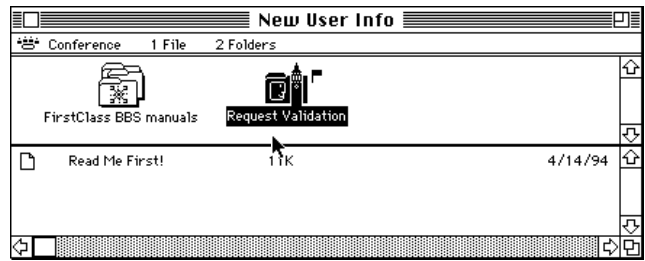


Figure 12: Validation must be requested from within this conference only.

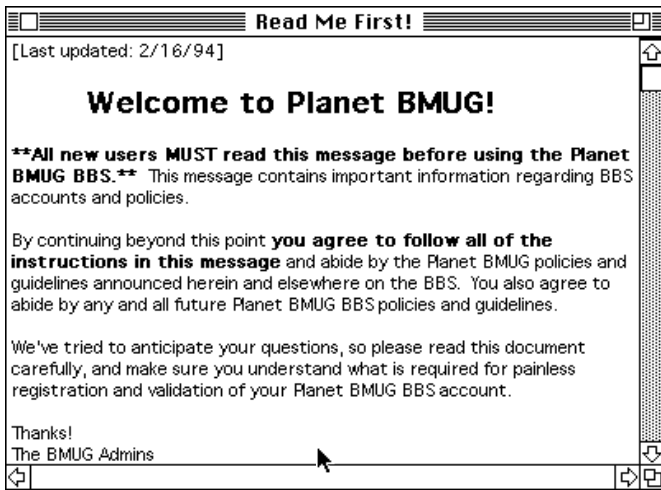


Figure 11: Please read this! Aside from the required legal mumbo-jumbo, you'll find many worthwhile tips.

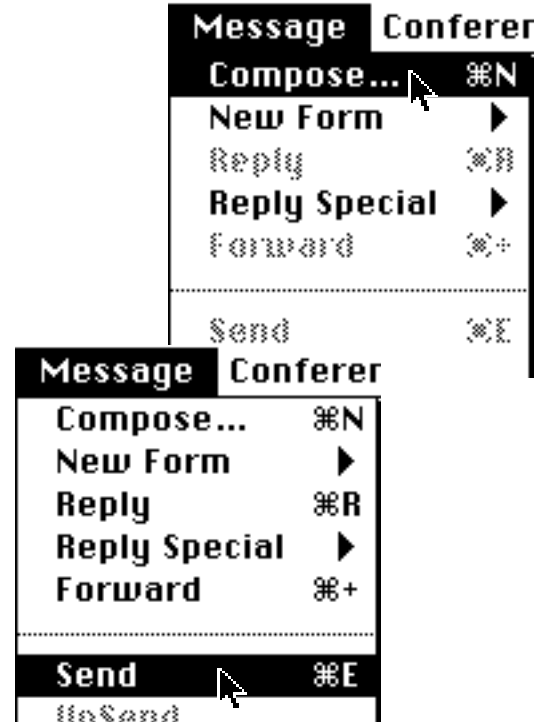


Figure 13: You can select New from the Message menus. Choose Send to get your message to where it's going. With version 2.5 you can even unsend a message!

messages to individuals, upload files, or download the majority of our Shareware collection.

The easiest way to tell if you have been validated is to select Résumé from the Edit menu. If you are able to enter information about yourself for the benefit of other BMUG members then you have been validated.

Trouble Connecting? Busy Signals?

Planet BMUG currently has about 4,500 validated users, and BMUG Boston another 1,800. Everybody shares the same 17 and 11 phone lines 24 hours a day, so busy signals are commonplace.

On Planet BMUG the phone company tells us that the estimated average delay between first connect attempt until actually achieving the connection is 10 minutes during non-peak hours, and as much as an hour during heavy traffic.

The busiest hours are from 5 pm until midnight Pacific time, with morning (7 am-10 am Pacific), and lunch hours (11 am-1 pm Pacific) being almost as busy. Creative patience is recommended.

No Such Registered User?

If you have picked a UserID already chosen by another member a dialog box will appear alerting you to this fact. (Figure 15). In this case go back and choose a new UserID and connect again. If you

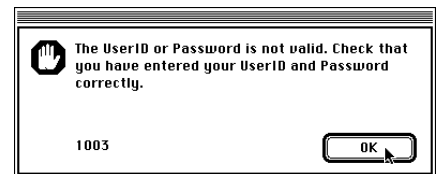


Figure 15: If you see this message, make sure you are using the right UserID and Password. If you are connecting for the first time it means you need to choose a different UserID.

are quick enough, you may remain connected during this time and will not have to re-dial.

When It Just Rings

If the line just rings over a weekend, then it is likely that the BBS is simply down

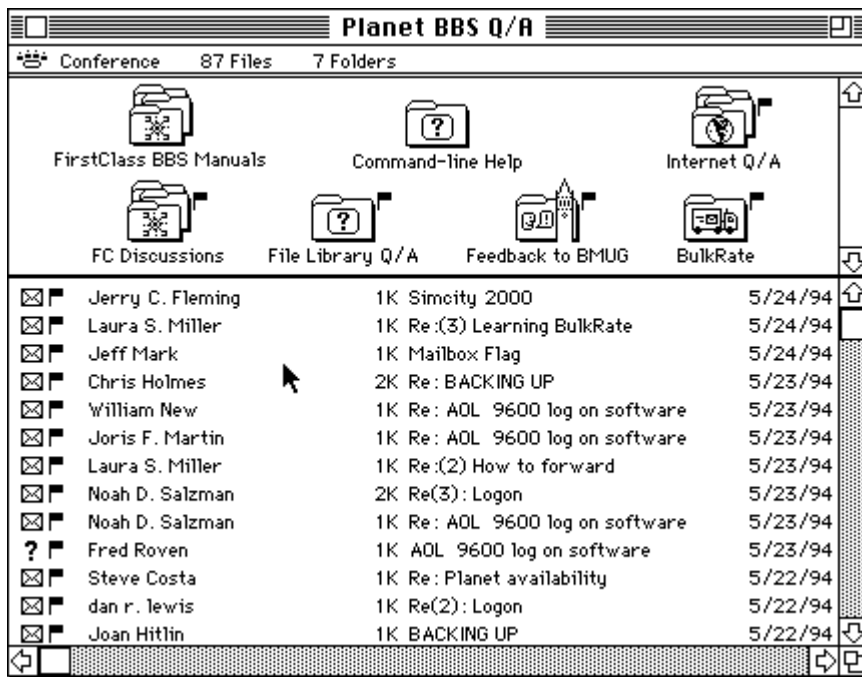
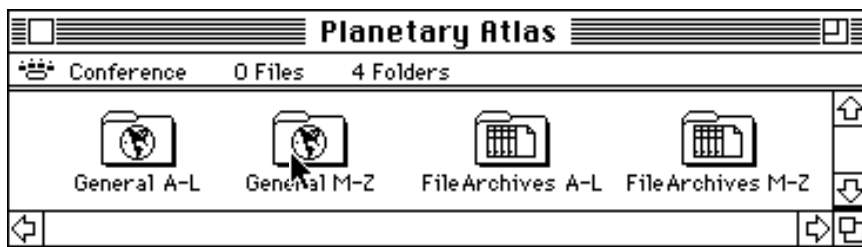


Figure 17: The Planet BBS Q/A conference



The Planetary Atlas and File Archive Atlas.

for maintenance. At other times it may be that the BBS has crashed. Call back in a few hours if you would like, though you may wish to simply call back the next day.

Downtime Hours

All our BBSes are down for maintenance for approximately six to eight hours each weekend (sometimes Saturday, sometimes Sunday). They are also unavailable from 3 am-4 am (Pacific time for Planet, Eastern time for BMUG Boston) every day for mail exchange with the Internet, each other, and other services.

Common Problems and Solutions

How do I find out my UserID and password?

You chose your own UserID and password when you created your BBS account, and it's up to you to remember them. The UserID may still be stored in the "second page"

of FirstClass' setup windows. Hopefully, you wrote down that information somewhere. If you can't find it, contact the Helpline at (510) 540-1742 and let us know. It may take a few days to remedy the situation, so please be patient.

I've entered my UserID and password, but I must re-enter it each time I connect...

Make sure you've entered your UserID and password in the second window of the Planet BMUG (or BMUG Boston) settings file Setup window, and then press save. Any codes entered in the opening Login window will not be remembered when you quit the application.

My modem is not in the pop-up list. What should I do?

Select Basic AT.mdm. This should work for all modems. When you

become validated, send a message to the Planet BBS Q/A conference or the Modems conference asking for help.

My modem isn't dialing. What did I do wrong?

First, make sure that your modem is alive and well, by turning the modem's power off and then back on. If nothing happens when you click the Login button, double-check to see if you have plugged your modem into the modem port on your Mac, and that the modem is securely connected to a phone line, and the phone line is plugged in to a wall jack.

Make sure your modem settings are correct, paying particular attention to which port you have chosen. Make sure to set dial to Pulse if you do not have Tone service on your phone from your local phone service provider.

If you have tried all of the above and are still floundering you may want to call the BMUG Helpline.

I get cut off when I try to fill out the registration form.

FirstClass allows only two minutes to fill out the Auto-Registration card. If you ran out of time, call again and try to fill out the form within that time limit.

I connected successfully, but can't tell if I'm validated.

Select Résumé from the Edit menu. If you are able to type in a description of yourself (which you should do) then you have been validated!

I sent my validation request, but have yet to be validated.

Our Validation Volunteers take approximately a week to process each request. If it has been more than a week, and you are getting impatient, you may send a second validation request with the subject "Second request," politeness helps. If, after another week, you still have yet to be validated, there may have been a problem and you should call the BMUG Helpline at (510) 540-1742. Things that may hold up your validation include expired member-

ships, not using your real name when you logged in, or accidentally creating multiple accounts with similar, but different UserIDs.

Help! I'm Sooooo Confused!

You've read the instructions a thousand times, your software is configured correctly, your modem is plugged in and turned on, all cables are connected securely to the modem port and phone lines, and you're *still* having trouble.

When all else fails, the BMUG Volunteers are available to help you. The BMUG Helpline, at (510) 540-1742, is staffed by volunteers, and only at certain times during the week, so there are times when no one is available to take your call. When leaving a message, please leave a detailed explanation of your problem, and we will try to return your call as soon as we can. Your calls *are* important to us, so please do leave us both a day and evening phone number. Please say the numbers slowly and clearly.

A Brief Tour of Planet BMUG

Explore BMUG Boston and Planet BMUG at your leisure. Here's a couple of tips to help:

Conferences on BMUG Boston and Planet BMUG are just like folders on the Macintosh. You can open them by double-clicking. If you find a message that looks interesting, you can double-click on the message to read it. The messages with red flags are unread by you. Once you open a message the flag will disappear.

You can create a new message by typing Command-N, and you can easily reply to a message by typing Command-R.

To send a message to someone on the same BBS, type the first few letters of their name while the cursor is in the To: field, and press Enter, Return, or Tab. FirstClass will attempt to figure out the rest of the name. If it cannot narrow it down to a single name, you will be presented with a list of possible choices; simply double-click the correct name and it will be placed in the To: field for you.

One way to check the status of your validation is to select Résumé from the Edit menu. If you are able to enter a few lines about yourself (for the benefit of

your fellow BMUGers), then you've been validated.

Friendly Landmarks

Planet BBS Q/A:

This conference is the best place to ask questions about logging on, modem troubles, other BBSes, Planet BMUG, BMUG Boston, or the FirstClass software (Figure 17).

Planetary Atlas

This is a great place to look for that conference (or folder) that you know is somewhere on the BBS, but can't seem to find. The entire BBS is listed in alphabetical order. There's also a list of all the various folders that contain the mountains of Freeware and Shareware that's available for downloading from the BMUG BBSes.

DeskTop

This is your home base. You can get to BMUG Central, Planet Q/A and all the other fun areas from here. If you see the New User Info conference, you have not been validated yet.

Additional Resources

Online:

The Planet BBS Q/A Conference

FirstClass BBS Manuals,
(located within Planet BBS Q/A)
This includes help from SoftArc about the FirstClass software.

Planet FAQs

(located within File Libraries)

BMUG Online Reference

(located within File Libraries)

Command-line Help

(located within Planet BBS Q/A)
This contains helpful information on connecting to a First Class system from a command line system.

BMUG Helpline Clinics:

You can call the BMUG Helpline for tips on connecting or to ask a question about your modem or software at (510) 540-1742. Clinics are Mondays 6 pm - 9 pm, Wednesdays, Thursdays, and Saturdays from 1 pm - 5 pm Pacific time at the BMUG office: 2055 Center Street (half a block west of the Berkeley BART station, between Shattuck & Milvia). ☞

BMUG Resources

BMUG Choice Products

Spring 1996 Awards



Each year BMUG looks into the world of computer products to find new and better products from new and better companies. In this section we list the products and companies we feel stand out from the rest.

A Choice Product might not always be the very fastest and most feature filled in its field—rather we look at the company that makes it, the materials it’s made of, the support that goes with it, and what we call its “general coolness.”

The prices listed are in the format *Street Price/Retail Price*. When buying a product, always assume you can get it cheaper somewhere else, because you usually can. If alternatives exist we don’t list products with copy-protection.

These products are reviewed by people who have actually used them. We take into account opinions and comments from BMUG members in the field (that’s you). If you have something to say about a product, let us know. If you don’t tell us we may miss it completely. On the other hand, if you disagree, we want to know that too. If you’ve had a bad experience with some of the companies or products listed here please tell us about it. Send any comments to any of the addresses at the beginning of this newsletter, Attn: Choice Products, or leave a message in the Choice Products folder in the Newsletter conference on BMUG BBSes.

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COMPUTERS

DESKTOP



Performa 5200 CD AV, Performa 5215 CD Power Mac 5200/75 LC

\$2200

To see how far the Mac has come, check out these models. Like the original, these are one-piece units. No cable clutter. Easy to move from room to room. Yet these new models sport PowerPC 603 processors and a wealth of excellent features including 8 megs of RAM, a 1-gig hard drive, an internal 14.4 modem and a quad speed Apple 600i Plus CD-ROM drive. The built-in monitor is an Apple AudioVision 14-inch color display complete with a pair of speakers. To top it off, Performas come packed with quality software and room to grow, all at a very reasonable price. This Mac is perfect for the dorm or the family room.

Apple Computer Inc., 1 Infinite Loop, Cupertino, CA, 95014

(408) 996-1010, (800) 767-2775 Product Info, (800) 538-9696 Dealer Locations



Performa 6116 CD

\$1700

If you are looking for a modular PowerMac at a bargain price, look no further. The 6116CD has a 60MHz PowerPC 601 processor, 8 megs of RAM and a 700-meg hard drive. The double speed Apple 300i Plus CD-ROM and external 14.4 modem are good quality, if not state-of-the-art. Although expansion is limited and the 14-inch color monitor could be better, this is a solid package. With its impressive bundle of software and CD-ROMs, you have the most affordable PowerPC on the market.

Apple Computer Inc., 1 Infinite Loop, Cupertino, CA, 95014

(408) 996-1010, (800) 767-2775 Product Info, (800) 538-9696 Dealer Locations



Performa 640 CD-DOS

\$2100

If your Mac needs to do double duty as DOS machine, and you don't need the speed of a PowerPC or Pentium, consider this Performa. It boasts a 68LC040 processor on the motherboard and a 486DX2 chip on a DOS card, all in one box. It comes with 12 megs of RAM, 8 megs on the motherboard for Mac applications, and 4 megs on the DOS board for the other stuff. While MS-DOS 6.22 and Windows 3.1 are included, you will probably have to add RAM to run Windows at a bearable pace. Likewise the 500-meg hard drive may start to feel a bit small after a bit of use. Also included are a double speed Apple 300i Plus CD-ROM drive and an external Global Village 14.4 modem. The Apple 15-inch Multiple Scan Display, with switchable resolutions and a package of Mac software are also included in this package. If you need to use DOS at home, school or a small office, and you have no plans to upgrade the machine to a PowerPC (no upgrade path is currently available), then this model is well worth considering. But you might also want to scour the stores for a discontinued Performa 6100 CD-DOS; a PowerPC with a DOS chip on a card.

Apple Computer Inc., 1 Infinite Loop, Cupertino, CA, 95014

(408) 996-1010, (800) 767-2775 Product Info, (800) 538-9696 Dealer Locations

Power Macintosh 7200/75

\$1700

Power Macintosh 7200/90

\$1900

Beautifully designed and expandable with 3 PCI slots, this 601 chip-based PowerMac has a low base price that makes it a great choice as a basic business machine, small business workhorse or a personal machine for demanding users. With 8 megs of RAM (dual in-line memory modules, DIMMs, not the familiar SIMMs), a 500-meg hard drive, a quad speed Apple 600i Plus CD-ROM drive and AAUI and 10BaseT Ethernet ports, this model packs a lot of punch for a base model. One meg of Video RAM upgradeable to 4 megs is standard. And at 4 megs, the video possibilities are dazzling, up to one million colors on a 21-inch monitor for instance. Also included are GeoPort telephony/fax software and Cypress MegaPhone software. Be sure to add 256k of cache memory for optimum performance.

Apple Computer Inc., 1 Infinite Loop, Cupertino, CA, 95014

(408) 996-1010, (800) 767-2775 Product Info, (800) 538-9696 Dealer Locations



Power Macintosh 7500/100

\$2700 to \$3000

Sharing the elegant case design of the 7200, this model offers the business user all the speed and power needed for any standard business application as well as networking and video conferencing. Like the 7200, the new 7500 uses DIMMs, not the SIMMs used by older Macs and is configured with 16 megs of RAM as well as 2 megs of VRAM. The processor is a fast 100-MHz 601 PowerPC chip while resides on a daughterboard making future upgrades a snap. Features include internal Fast SCSI, support for NTSC and PAL monitors, 24-bit video input (no output) all combining to provide excellent video capture rates, plus stereo line-audio input and output ports, Apple media conferencing software and a PlainTalk microphone. Standard equipment includes a 500-meg or 1-gig hard drive, a quad speed Apple 600i Plus CD-ROM drive and AAUI and 10BaseT Ethernet ports. As with the 7200, be sure to add 256k of cache memory for optimum performance.

*Apple Computer Inc., 1 Infinite Loop, Cupertino, CA, 95014
(408) 996-1010, (800) 767-2775 Product Info, (800) 538-9696 Dealer Locations*

Performa 6205

\$2100

Performa 6220 CD

\$2200

For better multimedia capabilities, consider these Performas. Each offers a number of enhancements over a base Performa model. They come with 8 megs of RAM, a 1-gig hard drive, a quad-speed Apple 600i Plus CD-ROM drive and stereo 16-bit sound to get the most from CDs, a 28.8 external fax/modem, built-in speakers and an Apple 15-inch Multiple Scan Monitor, plus the usual impressive selection of software and CD-ROM titles. The 6220 CD does not include a monitor. Instead a TV/Video input card allows you to record video directly into your Mac. You can also purchase this card separately and add it to a Performa 6205. Each offers expansion possibilities via a PDS slot.

*Apple Computer Inc., 1 Infinite Loop, Cupertino, CA, 95014
(408) 996-1010, (800) 767-2775 Product Info, (800) 538-9696 Dealer Locations*



Power Macintosh 8500/120

\$3900 to \$4700

For corporate multimedia managers, graphics professionals and engineers, the 8500 with its host of AV features is a superb tool. From full motion video capture to near-broadcast quality 24-bit color, this is one powerful Mac. With the latest 604 processor mounted on a daughterboard, it is also very fast, almost too fast. You might want to consider an accelerated video display adapter to avoid a motherboard bottleneck. In addition to the 7500's features, the 8500 has 24-bit video output and comes equipped with 256K of cache memory. The 8500 is configured with either 16 megs of RAM (DIMMs) as well as 2 megs of VRAM, a 1- or 2-gig hard drive, a quad speed Apple 600i Plus CD-ROM drive and AAUI and 10BaseT Ethernet ports. Three PCI slots are available for expansion.

*Apple Computer Inc., 1 Infinite Loop, Cupertino, CA, 95014
(408) 996-1010, (800) 767-2775 Product Info, (800) 538-9696 Dealer Locations*



Power Macintosh 9500/120

\$4600

Power Macintosh 9500/132

\$5300

If you are a broadcast video professional, or have custom configuration needs in a high end machine, the PowerMac 9500 is for you. Six PCI slots give you the option on tossing virtually anything into this fast 604-based Mac. The selection of PCI cards, while currently meager, is sure to grow as Apple converts to the PCI-bus. The 9500 comes standard with 16 megs of memory (DIMMs), a 1- or 2-gig hard drive, a quad speed Apple 600i Plus CD-ROM drive and AAUI and 10BaseT Ethernet ports. The internal SCSI bus supports SCSI-2 Fast. Video on the 9500/132 comes from an accelerated 24-bit video card with 2 megs of VRAM standard, upgradeable to 4 megs or 24-bit color at 1,152 x 870 pixels. Speed with room to grow. A minor quibble, installing memory is a hassle that requires you to remove just about gut the 9500.

*Apple Computer Inc., 1 Infinite Loop, Cupertino, CA, 95014
(408) 996-1010, (800) 767-2775 Product Info, (800) 538-9696 Dealer Locations*

PORTABLE



PowerBook 5300

\$2100

The first PowerPC PowerBook is also, in its 9.5 inch passive-matrix greyscale version, an excellent choice as an entry-level portable Macintosh. It uses a low power 603e processor chip running at 100 MHz. While not as fast as a desktop Power Macintosh running a 601 chip, it is nonetheless significantly speedier than any 680x0 PowerBook. New features include full support for PC Cards, removable floppy drives to lighten the load, new, longer lasting batteries, infrared transceivers, and much more. It can even serve well as a presentation tool with 832 x 624 pixel, 8-bit video output and 16-bit stereo sound output. With expansion options galore, and 8 megs of memory and a 500-meg hard drive built in, this PowerBook has much more to offer than the slightly less expensive 190 models.

*Apple Computer Inc., 1 Infinite Loop, Cupertino, CA, 9501
408-996-1010, 800-767-2775 Product Info, 800-538-9696 Dealer Locations*



PowerBook 5300ce

\$6500

Graphics professionals will appreciate the extra speed (a 117 MHz 603e chip) and superior resolution of the 5300ce's active-matrix color display. The 10.4-inch screen supports thousands of colors at Super-VGA resolution (600 x 800 pixels). This model comes packed with 32 megs of RAM and a 1-gig hard drive. It also shares the other design features common to the 5300 series.

*Apple Computer Inc., 1 Infinite Loop, Cupertino, CA, 9501
408-996-1010, 800-767-2775 Product Info, 800-538-9696 Dealer Locations*



**PowerBook 5300cs
PowerBook 5300c**

**\$2800 to \$3500
\$3700 to \$4500**

These new 6.2 pound PowerBooks boast a 100 MHz 603e PowerPC processor and 10.4-inch, up to 16-bit color screens. The "cs" model's screen is dual scan passive-matrix, the "c" model has a crisp active-matrix display. Both come with between 8 and 16 megs of RAM and a 500- or 750-meg hard drive, and share the same design features of the base model 5300. Their flexibility, longer battery life (around 4 hours) and infrared transceivers make them an excellent choice for most businesses and Mac enthusiasts. The only reason to wait is the track pad. Early production models of all 5300 series PowerBooks, like earlier PowerBooks, do not allow you to double-click by tapping your finger on the pad. The 190 and Duo 2300c models have new "double-click" pads. Later models of the 5300 series may feature this pad as well. Ask before you buy.

*Apple Computer Inc., 1 Infinite Loop, Cupertino, CA, 9501
408-996-1010, 800-767-2775 Product Info, 800-538-9696 Dealer Locations*



PowerBook Duo 2300c

\$3500 to \$4500

The newest (and only) Duo from Apple features the 603e PowerPC processor chip running at 100 MHz. It is still a lightweight at 4.8 pounds, and still sports a 9.5-inch active-matrix color display, and now has a trackpad instead of a trackball. Otherwise it's the same as the now-discontinued 280c. It does not get an upgrade to a longer-life Lilon battery like the new 5300-series PowerBooks. It comes with either 8 megs of RAM and a 750-meg hard drive, or with 20 megs of RAM and a whopping 1-gig hard drive and a less-than-impressive Apple Express Modem II. If a Duo fits your needs, this is an excellent, albeit pricey, choice.

*Apple Computer Inc., 1 Infinite Loop, Cupertino, CA, 9501
408-996-1010, 800-767-2775 Product Info, 800-538-9696 Dealer Locations*

PERFORMANCE ENHANCERS

Alacrity Acceleration Kits

\$70

If you are adventurous and like poking around inside your Mac, and your PowerPC or newer Quadra is feeling just a bit pokey, consider a clock chip accelerator. KS Labs has a number of them available to boost your processor speed by up to 33%. Although using the kit violates the Apple warranty, it can be deinstalled easily without anyone knowing it was ever there. There is a kit for the Power Macintosh 6100, 7100 and 8100 models, Quadra 605, 650, 660AV, and 800 and similar Centris' and Performas.

*KS Labs, Route 10 Box 41a, Marietta, OH, 45750
614-374-5665, 614-373-0353, 800-450-0353*



Brainstorm Accelerator for Mac SE Brainstorm Accelerator for Mac Plus

\$170
\$149

If you are dedicated to your SE or Plus, and want to put a bit more money into them to improve performance, Brainstorm accelerators are still the best way to go. Installation of the Plus accelerator requires soldering on the motherboard and is best left to Brainstorm; the good news is that it costs only \$50 to have them do it for you! The SE accelerator can be installed by anyone confident enough to open up his/her Mac and will give you about 80% of the performance of an SE/30. Brainstorm also sells toolkits to help you do the job, if you choose to. Yet, as Macintosh prices continue to drop and the power of the new Macs dwarfs even fast Quadras, you might want to think twice before making this upgrade.

Brainstorm Products, 1145 Terra Bella Ave., Mountain View, CA, 94043
415-988-2900, 415-964-2131, 415-988-2906



DayStar PowerCard 601

\$640

Users of fast 040 Macs can achieve PowerPC performance with the PowerCard 601. It works with the Performa/Quadra 470 series, 570 series, 605, and 630 series and allows the computer to run at twice its normal clock speed. It is more limited than the PowerPro 601, using only system memory and the existing 32-bit wide data bus, but is affordable. Sadly it won't provide much of a boost for 25-MHz Quadras such as the 610, 650, 700 and 900. Be sure to check the prices of new Power Macs before making the investment.

DayStar Digital, 5556 Atlanta Hwy., Flowery Branch, GA, 30542
404-967-2077, 404-967-3018, 800-962-2077



Power Macintosh 256k Cache Card

\$150 to \$200

An absolute must for every Power Mac. Any brand of 256k cache card will work, and provide about a 15 to 20% speed boost depending on the application. But don't waste extra money on a 1-meg cache card. The extra boost it provides is minimal.

Apple Computer Inc., 1 Infinite Loop, Cupertino, CA, 9501
408-996-1010, 800-767-2775 Product Info, 800-538-9696 Dealer Locations



PowerBook F/33

\$149 to \$329

Owners of older PowerBooks (100 and 500 series) and Duos (the 210) can get a processor speed boost or add a FPU with a daughterboard exchange or CPU switch from DL Engineering, all for a very reasonable price considering the performance boost. Ask them about other PowerBook upgrade options, and specials for BMUG members.

DL Engineering, 18419 Nubian Way, Nevada City, CA, 95959
510 450-1740, 800 788-7146

REPAIRING YOUR MAC



CJS Systems

After several years of repairing Macs, CJS is still one of the best Mac repair places in the Bay Area. They are very friendly and will try to really fix things rather than just swap out parts. When we can't fix our machines ourselves, we send them to CJS. In case you haven't been there in a while, they moved up the street in 1994.

CJS Systems, 2750 Adeline St., Berkeley, CA, 94703
510-849-3730, 510-548-2353

HARDWARE

INPUT DEVICES



WACOM Art-Z II Tablet WACOM ArtPad II

\$330
\$149

For many years these affordable pads have been the best pressure-sensitive devices for the Mac. The latest pads come with a new "Ultra Erasing Pen" that has a second sensor tip that looks and acts just like an eraser on a pencil. This is one cool feature! These new pads also have the ability to sense the tilt of the pen to create even more realistic and detailed pen strokes. The pads connect via the ADB port and are a must for painting programs like Painter or Dabbler. They add a worthwhile dimension to any painting or graphics activity and are also great mouse replacements. Most graphics programs support the tablets, but it's wise to check first. While the ArtZ II and ArtPad are big enough for most users, WACOM makes also tablets as large as 12x18 inches. All WACOM tablets are worth considering. They're as close as you'll get to using a paintbrush on your Mac, and are great for playing Shanghai, too.

WACOM, Inc., 501 SE Columbia Shores Blvd., Ste. #300, Vancouver, WA, 98661
(206) 750-8882, (800) 922-6613, Fax (206) 750-8924



Kensington Turbo Mouse 4.0

\$100

We have tried various types of trackballs, but the ease with which you can move the Kensington, the smooth feel and light pressure it takes to click the buttons, and the location of the locking button make it the easiest and most comfortable trackball. You just don't have to work as hard with the Kensington. It even fits snugly up against the old Apple keyboard and takes up very little desk space. As a bonus, the TurboMouse software allows you to program the buttons, adjust the rate of cursor acceleration, and even make the cursor jump to a predefined spot on your monitor. Well done. The TurboMouse also has an excellent warranty and superb product support.

Kensington Microware Ltd., 2855 Campus Dr., San Mateo, CA, 94403
(415) 572-2700, (800) 535-4242, Fax (415) 572-9675



Apple Desktop Bus Mouse II

\$80

Apple's "new" ergonomically designed mouse is what mice are all about. But there's more to this "ergo" mouse than just the shape of the plastics. The mouse ball sits at the front, meaning your wrist doesn't do circle twists to get the cursor in the right spot. Well-made.

Apple Computer Inc., 1 Infinite Loop, Cupertino, CA, 95014
(408) 996-1010, (800) 767-2775 Product Info, (800) 538-9696 Dealer Locations



Apple Extended Keyboard II

\$170

Apple's full keyboard, with FKeys, number pad, Power On key, and a few keys you'll probably never need! Once you've used one of these puppies, you'll never go back. It is well constructed with an excellent feel. Try it. The only drawback is the larger footprint. Apple no longer produces this keyboard, but you can still find it in some places; you'll just have to look for it.

Apple Computer Inc., 1 Infinite Loop, Cupertino, CA, 95014
(408) 996-1010, (800) 767-2775 Product Info, (800) 538-9696 Dealer Locations



Mac GamePad

\$30

Admit it. You like to play games on your Mac. But a mouse just doesn't cut it as a joy-stick. Get something designed for games. The Mac GamePad from Advanced Gravis does double duty. It combines a joy-stick, a Nintendo-style controller for multi-directional operation, and 4 programmable buttons. It is suitable for either right or left-handers. You can even get it bundled with the new version of Doom.

Advanced Gravis
(604) 431-5020, (800) 663-8558, Fax (604) 431-5155

SCSI DRIVES

DRIVES



Apple CD600i Plus **\$315**
Apple CD600e Plus **\$340**

Fast, PhotoCD-capable, and the most reliable new quad-speed CD-ROM drive out there (the “i” is the internal; the “e” is the external). It can even put sound from an audio CD into QuickTime movies. This upgrade to the Apple CD300 seems to be just what we’ve all been wanting—it’s faster. The drive uses a tray so no caddy is required. The software is excellent and is updated frequently. No third party drivers are needed. If you purchase the internal version, don’t forget to order the appropriate mounting kit and front panel for your particular Mac.

*Apple Computer Inc., 1 Infinite Loop, Cupertino, CA, 95014
 408-996-1010, 800-767-2775 Product Info, 800-538-9696 Dealer Locations,*



APS 230 MO **\$600**

Price, reliability, and the dependability of magneto-optical drives make them a good choice for archiving. Although no magneto-optical drive is really fast, the APS drive provides reasonable performance. Unlike DAT drives, MO drives can also double as removable disk drive.

*APS Technologies, 6131 Deramus, PO Box 4987, Kansas City, MO, 64120-0087
 816-483-1600, 816-483-3077, 800-926-0390*



APS DAT2 **\$750 int / \$800 ext**
APS HyperDAT **\$950 int / \$1000 ext**

If your business needs to backup a lot of material reliably, consider a DAT drive. The tape media is inexpensive, and the newer DAT drives are fast. The DAT2 can backup up to 4 gigs of data with a 120-meg tape cartridge, and the HyperDat can handle up to 8 GB on a single 120-meg tape and support transfer rates of up to 28 megs per minute. With Retrospect backup software, backups can be easy.

*APS Technologies, 6131 Deramus, PO Box 4987, Kansas City, MO, 64120-0087
 816-483-1600, 816-483-3077, 800-926-0390*



FWB Hammer CD-R 2x Pro **\$1800**

This high-quality CD-ROM writing package includes a Sony mechanism and the great CD writing software Toast Pro for all your CD creation needs. With support and guidance from FWB you can’t go wrong. If you produce CD-ROMs or want to, this is a great tool to start with.

*FWB, 2040 Polk St., #215, San Francisco, CA, 94109
 415-474-8055, 415-775-2125*



Hard Drives **Prices vary**

The prices of hard drives have been dropping like a stone over the past year. This is great news for computer users. A 1-gig drive can now be found for less than \$400!! While most smaller drives Mac users are familiar with are made by companies like Quantum and Maxtor, the larger drives might come from manufacturers like Seagate, IBM and Micropolis. With all these changes, it’s hard to pick a reseller that stands out from the crowd. Shop around for a good price, and be sure to ask about warranties, shipping times and charges, who pays for what if something goes wrong, how long it will take to get a replacement and how easy it is to reach technical support and get accurate help. Be sure to pay with a credit card if possible.



Zip100 Drive **\$199**
100-meg cartridge **\$15 to \$20**

This amazing new floppy drive from Iomega, the masters of the floppy media, is cheap, easy to use, fast, and very cool. If you need quick and easy removable media storage for archiving or transportation, we highly recommend this new product.

*Iomega, 1812 W. 4000 South, Roy, UT, 84067
 801-778-1000, 801-778-3450, 800-777-6654*

SCSI RECOVERY



DriveSavers

These guys get data out of flaky hard drives that disk recovery software like MacTools Pro and Norton Utilities can't touch. They'll also do PC, Novell, and UNIX recoveries. They aren't cheap, but if you really need your data back, nothing is too expensive.

*DriveSavers, 400 Bel Marin Keys, Novato, CA, 94949
415-883-4232, 415-883-0780, 800-440-1904*

SCSI ACCESSORIES



Berkeley Data Access

\$28 and up

If you've just spent thousands of dollars for a hard drive bigger than the Grand Canyon, you don't want just any old cable to bus your data. SCSI cables are usually the weakest link in the chain. Steve at B.D.A. can talk SCSI cables all day, and his are the best! This is a small, wholesale kind of operation, so you have to order a couple of cables at a time; four at a time will get you the best price break. These cables are top quality, but cost little more than generic cheapos.

*Berkeley Data Access, 2560 Bancroft Way #3, Berkeley, CA, 94704
510-644-9999, 510-644-2396, 510-649-9542*



FWB SCSI JackHammer (PCI)

\$375

FWB SCSI JackHammer (NuBus)

\$500

The JackHammer can make it seem like you have a brand new hard drive. These RISC-based boards bypass the Mac's slow SCSI chip and can accelerate transfer rates to 20 megas per second. Much of the speed comes from a sophisticated built-in 128k buffer. It even works on the Mac IIx and with tape drives.

*FWB, Inc., 2040 Polk St., #215, San Francisco, CA, 94109
415-474-8055, 415-775-2125*



NuBus Expansion Boxes

\$800 to \$1800

Are you a high-end desktop publisher and need a few more NuBus slots? This is the way to go. Second Wave has 4-slot and 8-slot expansion boxes. The box uses one NuBus slot to connect to your Mac.

*Second Wave Inc., 2525 Wallingwood Dr., Bldg. 13, Austin, TX, 78746-6932
512-329-9283, 512-329-9299*



SCSI DOC

\$30

Have you ever tried to connect your PowerBook with its square SCSI socket to a standard SCSI cable? You can't do it, unless you have SCSI DOC. It's a heavily shielded SCSI connector with a male HDI-30 at one end and a female DB-25 SCSI connector at the other. Includes a switch for putting dockable PowerBooks into docking mode and saves you the trouble of carrying around a PowerBook-specific SCSI cable.

*APS Technologies, 6131 Deramus, PO Box 4987, Kansas City, MO, 64120-0087
816-483-1600, 816-483-3077, 800-926-0390*



SCSIProbe 3.5

Freeware

SCSIProbe displays a list of the SCSI devices connected to your Mac. For each device, it lists the SCSI ID, type of device, manufacturer, product number, and version of the driver. It can reset the SCSI bus and mount unmounted devices. It even works with the multiple SCSI busses on the newer Macs. Available on our BBS and BMUG's Utilities D1 disk (for \$4).

Robert Polic

SCANNERS



HP ScanJet 4c

\$1100

The latest HP color scanner quickly handles black & white, grayscale, and one-pass 30-bit color scanning at 600 dpi (software dithered to 2400 dpi). It's among the fastest and most accurate scanners for the Mac and is able to detect details even in deeply shadowed areas. Yet it's easy to use and fairly bulletproof. The scanning area is 8.5" by 14", so it takes up a lot of desk space. It doesn't use Photoshop plug-ins but is TWAIN compliant. It is bundled with Caere OCR software and Photoshop 2.5 (called "LE"), and it can be used to make color and black-and-white copies with its DeskScan software. But perhaps the biggest change in this new model is the Visioneer PaperPort software that allows this scanner to annotate, organize and link documents. It is a very versatile package. Transparency and sheet feed options are available.

*Hewlett-Packard Co., 19310 Pruneridge Ave., Cupertino, CA, 95014
800-752-0900*



HP ScanJet 4s

\$400

Hewlett-Packard's new 200-dpi optical, 400 dpi enhanced PaperPort look-alike, scans anything from a business card to a 8.5-inch by 30-inch poster and hooks into you Mac's serial port. The 4s can link to your email and fax applications as well. It comes with OCR, Visioneer 3.0 and Auto-Launch software.

*Hewlett-Packard Co., 19310 Pruneridge Ave., Cupertino, CA, 95014
800-752-0900*



**Visioneer PaperPort Vx
Visioneer PaperPort for the Mac 2.0**

\$380

\$280

This little 12.5-inch wide beauty has revolutionized scanning. Its convenient size means you can keep it next to your Mac at all times. Just insert the document you want to copy from business card to ledger size and larger and the PaperPort automatically turns on. When its done, it turn off. Meanwhile the OCR software and SharpPage technology allow you to manipulate text and make use of it as you wish. The Vx includes Corex CardScan, OmniPage LITE OCR and PictureWorks Copier software.

Visioneer, 317-361-3705, 800-680-3907

MONITORS



Apple Multiple Scan 17" Display

\$1000

This top-of-the-line Trinitron monitor supports multiple resolutions from 640 x 480 to 1600 x 1200 in three viewing modes. Images are bright and crisp, and adjustments can be made by simple digital controls. You can connect ADB devices as well as a microphone to the built-in tilt/swivel base. Resolution switching software allows resolution changes without restarting. It's also Energy Star compliant.

*Apple Computer Inc., 1 Infinite Loop, Cupertino, CA, 95014
408-996-1010, 800-767-2775 Product Info, 800-538-9696 Dealer Locations*



Apple Multiple Scan 20" Display

\$1985

Apple's new 20" color monitor is a sharp, clear Trinitron, supporting resolutions from 640 x 480 to 1600 x 1200. Resolution switching software allows resolution changes without restarting. It has full digital controls and even includes an adapter if you ever want to connect it to a PC. The monitor is Energy Star compliant.

*Apple Computer Inc., 1 Infinite Loop, Cupertino, CA, 95014
408-996-1010, 800-767-2775 Product Info, 800-538-9696 Dealer Locations*



AppleVision 1710 Display

\$1079

This top-of-the-line Trinitron monitor with excellent built-in multimedia speakers is a great all-in-one option. Special software allows you to adjust sound, picture and color balance. Resolution can be varied from 640 x 480 to 1280 x 1024. There is even a voice-recognition mike. It also works with a PC using Windows. A nice package.

*Apple Computer Inc., 1 Infinite Loop, Cupertino, CA, 95014
408-996-1010, 800-767-2775 Product Info, 800-538-9696 Dealer Locations*



Sony Multiscan 15sf

\$480

The best small monitor on the market is the new Sony. This multiscan monitor can display multiple resolutions and sports a series of digital controls for complete image adjustment flexibility. The monitor is inexpensive, meets MRP II standards and is Energy Star compliant. A great choice for home or small business.

*Sony Electronics, Inc., Computer Peripheral Products Co., 3300 Zanker Rd., San Jose, CA, 95134
800-352-7669*

ACCESSORIES



**Klear Screen
Klear Kloth**

price varies

An environmentally-friendly computer cleaning spray and polishing cloth. A small bottle contains enough fluid to clean a two-page display 300 times; it's also great for your glasses. You shouldn't use ammonia- or alcohol-based cleaners on screens, since they may react with the plastics. As an added bonus, it is the only screen-cleaning product endorsed by Apple Computer for use with its displays.

*Meridrew Enterprises, P.O. Box 113, Danville, CA, 94526-0113
510-838-8774, 510-838-8773, 800-505-5327*

SPEAKERS



**Yamaha YST-M10 Powered Monitor Speakers
Yamaha YST-SS1010 Powered Speaker Bundle**

**\$79
\$220**

Today's CD-ROMs offer superb sound capabilities. Unfortunately, a single speaker in you Mac is unlikely to do it justice, whether you are listening to an audio CD or playing Marathon. A solution is a set of external stereo speakers. The Yamaha YST-M10 pair offer clean, accurate and relatively distortion sound, even at higher volumes. A set of controls on the right speaker allow you to adjust the volume and higher frequencies, or just turn the speakers on and off. Set up is easy and they look good next to your Mac. For fuller sound and deeper bass, consider the YST-SS1010 bundle. It adds to the M10's a large subwoofer module that you can place anywhere in you computer room. The only hassle is that it has a second set of controls that must be adjusted separately. With or without the subwoofer, the system will sound fantastic and you can't beat the low price.

*Yamaha Corporation of America, CA, 714-522-9240
800-492-6242*

PRINTERS



Apple Color LaserWriter 12/600PS

\$6500

Considering a color laser printer? As prices drop and the technology improves, such printers are becoming a viable choice for high-end business use. With the Color LaserWriter 12/600PS, Apple is leading the way. It is fast and remarkably easy to set up and use. It is rated at 12 ppm for monochrome, and 3 ppm for two or more colors. Resolution is limited to an excellent 600 x 600 dpi with Apple's Color PhotoGrade resolution providing the equivalent of a 200-lpi halftone screen and 122 possible gray levels for each color. The printer comes with 12 megs of RAM upgradeable to 40 megs using 72-pin SIMMs. The printer can be hooked into LocalTalk, parallel or Ethernet lines with support for a wide variety of protocols.

*Apple Computer Inc., 1 Infinite Loop, Cupertino, CA, 95014
408-996-1010, 800-767-2775 Product Info, 800-538-9696 Dealer Locations*



Apple LaserWriter 4/600 PS

\$900

For home, school, or small business, you can't beat the LaserWriter 4/600 PS. Text quality is very good with FinePrint-enhanced 600-dpi output and Adobe PostScript Level 2 support. It has adequate speed at 4-ppm, and with a RAM upgrade (a good idea in any event) it can support Apple's excellent PhotoGrade image enhancement technology. The 4/600 PS is Energy Star compliant. It can also be hooked up to a LocalTalk, EtherNet and Token Ring networks.

*Apple Computer Inc., 1 Infinite Loop, Cupertino, CA, 95014
408-996-1010, 800-767-2775 Product Info, 800-538-9696 Dealer Locations*



Apple LaserWriter Select 360

\$1300

This PostScript Level 2, 600-dpi printer from Apple is an excellent value. It produces superb text and grayscale, has a rated speed of 10 ppm, and comes with a hefty 7 megs of RAM—yet it costs only a few dollars more than HP’s 4-ppm LaserJet 4MP. It can even send, receive, and print plain-paper faxes at 600 dpi with the optional internal fax card (\$500). But be warned, the fax software needs improvement. The LaserWriter Select 360 is Energy Star compliant, switches emulations automatically, and can be used with Windows machines as well. An Excellent value.

Apple Computer Inc., 1 Infinite Loop, Cupertino, CA, 95014
 408-996-1010, 800-767-2775 Product Info, 800-538-9696 Dealer Locations



Hewlett-Packard LaserJet 4MV

\$3550

If you need to do a lot of high quality printing on a network, the new HP LaserJet 4MV is an outstanding choice. This 16-ppm, true 600-dpi printer offers the best looking text you can find thanks to HP’s Resolution Enhancement technology. It comes with Adobe PostScript Level 2 and 12 megs of memory, expandable to 44 megs. HP’s JetDirect card automatically switches among network protocols so this printer can serve many networks at one time. But that’s not all! It can print on anything from envelopes and transparencies to 11 x 17 ledger size paper. To save toner, there is an EconoMode for drafts, and the printer is Energy Star compliant. It is expensive, but this elegantly designed printer is well worth it.

Hewlett-Packard Co., 19310 Pruneridge Ave., Cupertino, CA, 95014
 800-752-0900

INKJET PRINTERS



Apple Color StyleWriter 2200

\$400

Need to take a color inkjet on the road? This is the printer to take. At only 3 pounds inside a 12-inch wide black case, the 2200 can run off a standard circuit or from an optional battery pack. It produces great text and well saturated colors at the same 720 x 360 dpi (text) or 360 x 360 dpi (color) resolution as its desktop cousin, the Color StyleWriter 2400. It even matches the 2400’s speed. The only drawback is that its single ink cartridge (which includes black) must be tossed once one of the ink colors you want is used up. Nevertheless, it makes a great partner to a PowerBook or Duo.

Apple Computer Inc., 1 Infinite Loop, Cupertino, CA, 95014
 408-996-1010, 800-767-2775 Product Info, 800-538-9696 Dealer Locations



Apple StyleWriter 1200

\$270

The StyleWriter has come a long way since it was first introduced. It now offers good speed, excellent print quality at 720 x 360 dpi resolution and impressive greyscale at 360 x 360 dpi. Its compact design, ability to function well on a network and ability to print on a wide variety of media make this the choice in non-color inkjets.

Apple Computer Inc., 1 Infinite Loop, Cupertino, CA, 95014
 408-996-1010, 800-767-2775 Product Info, 800-538-9696 Dealer Locations



Color StyleWriter 2400

\$350

Sharing the same mechanism as the Canon 360-dpi inkjets, the Stylewriter 2400 produces superb blacks for text printing at up to 5 pages per minute, and excellent color. The printer uses two cartridges, a black ink cartridge and a three color CYM cartridge. Run out of one of the colored inks? Just buy a tricolor ink tank that snaps into the cartridge. If you are printing black text only, you can pull both the cartridges and use a high performance black cartridge. It can even be used on a network, although as a QuickDraw printer (QuickDraw-GX compatible) this can slow down printing. An optional LocalTalk interface is available.

Apple Computer Inc., 1 Infinite Loop, Cupertino, CA, 95014
 408-996-1010, 800-767-2775 Product Info, 800-538-9696 Dealer Locations

ACCESSORIES



American Ink Products

Price varies

These guys have been making printer ink products for a decade. They offer do-it-yourself refill kits, colored inks, etc., and are our local source for inkjet refills.

*American Ink Products Company, 630 E. 10th St., Oakland, CA, 94606
510-268-0825, 510-268-9853, 800-414-6546*



Cables To Go

10 to \$

The Cables To Go catalog is an amazing collection of printer cables, modular cables, bulk cables, high-resolution video cables, optical cables, switch boxes, and general computer accessories. They're reasonably priced, bordering on downright cheap. The only drawback is a \$6 surcharge for orders under \$50, but if you've got the catalog in hand, this won't be an issue—you'll easily find \$50 worth of cables you always needed but could never find.

*Cables To Go, 1501 Webster St., Dayton, OH, 45404
800-331-2841, 800-826-7904*



Jet Paper Products

call for prices

These people have an absolute passion for paper. They offer many different high-quality papers especially suited for inkjet and laser printers, including 100 percent recycled and rag flavors. They offer a sample pack for only \$4.95, including postage.

*Jet Paper Company, PO Box 860, Everett, MA, 02149-0860
800-235-4538, 617-394-0823*



Jet-Master—Refill for DeskWriter cartridges

\$15-\$25

Computer Friends sells refill kits for all inkjet printers. What sets them apart from most of the competition is that they also sell ink by the bottle—as much as a gallon! Most other companies who sell ink only offer throw-away refill kits—definitely not sensitive to the environment. You can easily refill your DeskWriter cartridges with a syringe (included in the kits) for an economical price.

*Computer Friends, Inc., 14250 NW Science Park Dr., Portland, OR, 97229
503-626-2291, 503-643-5379*



Paper Direct

call for prices

This company has many unusual papers and paper products. If you want prefabricated graduated color brochures for your laser printer, or stock with “engraved” certificate borders, check out Paper Direct's catalog. Impressive and practical.

*Paper Direct, 100 Plaza Dr., Secaucus, NJ, 07094
800-272-7377, 201-507-0817*



TonerTuner 1.0.5

\$20

If you ever wanted to save on toner and be able to print in “draft” mode on a laser printer, TonerTuner is for you. An extension, it adds a control to the standard Print dialog of Mac applications that lets you set how dark to make your output. Why use more toner than you need?

*Working Software, Inc., PO Box 1844, Santa Cruz, CA
95061-1844, 408-423-5696, 408-423-5699, 800-229-9675*

MODEMS



Global Village Teleport Gold II / Teleport Platinum Global Village PowerPort Gold / PowerPort Platinum

\$110 to \$200
\$180 to \$500

Global Village makes a complete line of fax/modems for desktop Macs and PowerBooks. The Gold models connect at up to 14.4, and Platinum models at up to 28.8. PowerBook modems are also available as PC Cards with a top of the line model specially designed for the 5300 series PowerBooks and featuring simultaneous 10Base-T Ethernet (the Platinum Pro). The PowerBook models are the best you can buy. The desktop models are average in terms of hardware quality. What sets all Global Village modems apart is the software. Its fax software is the easiest and most solid out there. Unfortunately software upgrades are not free and customer support could use some improvement.

Global Village Communications, Inc., 685 E Middlefield Rd. Mountain View, CA, 94043
415-390-8200, BBS: 415-390-8334, 415-390-8282, 800 736-4821



USR Courier Dual Standard v.34

\$400 to 450

This is the modem that BMUG prefers for use on its BBSes. We've used USRs 24 hours a day for years, and buy as many as we can afford. It may be overkill for the home buyer, but they are great for heavy-duty use. What's more, US Robotics has special prices for sysops.

U.S. Robotics, Inc., 8100 N. McCormick Blvd., Skokie, IL, 60076
708-982-5001, 708-982-5235, 800-342-5877

ACCESSORIES



Celestin High-Speed Modem Cables

\$14

Although the cable that comes with your new modem will probably work fine, a funky cable can cripple your telecommunications. If you're having problems or need a replacement cable, get a Celestin cable. They work well with any speed modem, and that's unique.

Celestin Co., 1152 Hastings Ave., Port Townsend, WA, 98368
206-385-3767, 206-385-3586, 800-835-5514



Konexx Konnector 111

\$130

Have you ever wanted to use your modem only to find that your phone line is digital, not analog? Many hotels and office phone systems are digital these days making the standard computer modem useless. There is one way around this problem: the Konexx Konnector 112. Plug in the Konexx Konnector between the handset and base unit of a digital phone and you'll be able to use your regular or PowerBook modem. Works off an external adapter or internal batteries.

APS Technologies, 6131 Deramus, PO Box 4987, Kansas City, MO, 64120-0087
816-483-1600, 816-483-3077, 800-926-0390



TeleAdaptor

Price varies

These folks can get you phone line adapters for just about every country in the world. They also offer mini-kits for specific areas, a connector that will let you hook up to a digital phone system, as well as software utilities. They also have special "Road Warrior" packs, complete with an acoustic coupler.

TeleAdapt, 51 East Campbell Av., Campbell, CA, 95008
408-370-5105, 408-370-5110

DATA ACQUISITION



MacAdios II
MacAdios II Jr

\$800
\$550

MacAdios and MacAdios II Jr are NuBus data acquisition boards. Plug 'em in, and you can connect your Mac to the real world of laboratory testing and measurements. Check out Cliff Stoll's "Speed Bumps, Radar, and Your Mac" article in the Fall '94 BMUG Newsletter for ideas on how to use cards like these. The "Jr" lacks the control board features of the MacAdios II.

GW Instruments, 35 Medford St., Somerville, MA, 02143
(617) 625-4096, Fax (617) 625-1322

RAM



TechWorks

Price varies

With all the new memory intensive applications out there, an average Mac user needs 8 megs or more of RAM. TechWorks has memory for all current Apple products, plus a long line of specialty and 72-pin SIMMs and DIMMs. You get clear instructions on how to install your RAM, along with tools for opening your Mac or PowerBook—not usually included when you order from other companies. A lifetime warranty, 30-day money-back guarantee, and toll-free support all make TechWorks a Mac peripherals company to emulate. The people on the phone taking orders are among the nicest people that BMUG has dealt with. Be sure to tell them that you're a BMUG member, and ask for the BMUG discount. For older machines, consider checking Planet BMUG for used SIMMs at bargain prices.

Technology Works, 4030 Braker Ln. W, #350, Austin, TX, 78759
512-794-8533, 512-794-8520, 800-688-7466

POWERBOOK ACCESSORIES



Lind Electronic Design, Inc

Price varies

In addition to a range of batteries (from the regular internal ones to several external models), they also make a device that conditions a battery while it is still inside the PowerBook. It drains the battery down to the 1-volt-per-cell level, and then lets it recharge normally—makes lots of sense for those of us with only one battery and no external conditioner! Lind offers extraordinary customer support. If you have a problem with one of its products, it will bend over backwards to make it right.

Lind Electronic Design, Inc., 6414 Cambridge St., Minneapolis, MN, 55426
612-927-7740, 800-659-5956



The Madson Line PowerBook Bags

\$65 to \$250

Madson put a lot of care and work into its high-quality PowerBook bags. Its cases are very sturdy and don't weigh you down or make you look like a computer-toting geek. They come in Cordura, leather, and various colors.

The Madson Line, PO Box 338, Corte Madera, CA, 94976-0338
415-927-3600, 415-927-4661, 800-851-1551

SOFTWARE

SYSTEM SOFTWARE



LaserWriter 8.3

Appleware (Free)

This latest version of Apple's PostScript printer driver adds QuickDraw GX's Desktop Printer function allowing you to select and organize or background printing in the Finder. All without the overhead of QuickDraw GX! If you print to a PostScript printer, you'll want this cool driver. PPD selection makes sure of compatibilities with custom features of any printer.

*Apple Computer Inc., 1 Infinite Loop, Cupertino, CA, 95014
408-996-1010, 800-767-2775 Product Info, 800-538-9696 Dealer Locations*



Macintosh System 7.5.1

\$35

System 7.5 is more than just a maintenance release of the Macintosh OS. It improves the previous system in many invisible ways and adds some very visible and integrated new features, like an improved Find command, more cleanly-organized control panels, and AppleGuide, the best online help system available on any personal computer. For the power user, Apple has added QuickDraw GX and PowerTalk. With a number of bug fixes and many useful applications and control panels, we can recommend this upgrade to anyone whose Mac can handle System 7.

*Apple Computer Inc., 1 Infinite Loop, Cupertino, CA, 95014
408-996-1010, 800-767-2775 Product Info, 800-538-9696 Dealer Locations*



SimpleText 1.3

Appleware (Free)

SimpleText replaces Apple's venerable, but basic text program, TeachText. Its features are limited; there are no formatting options and no Undo function, but you can select fonts and add styling to your text. It supports drag-and-drop and Speech Manager making it pretty impressive for such a compact and versatile program. But our favorite enhancement is that you can have two text files open at one time, something TeachText never allowed. This alone makes it worth upgrading. SimpleText works fine with earlier versions of System 7. Version 1.3 supports PICT file, QuickTime movie, QuickDraw GX PDDs, and QuickDraw 3-D model viewing.

*Apple Computer Inc., 1 Infinite Loop, Cupertino, CA, 95014
408-996-1010, 800-767-2775 Product Info, 800-538-9696 Dealer Locations*

WORD PROCESSORS



ClarisWorks 4.0

\$129

This latest version adds a major new capability putting it in league with the big guys—paragraph styles. Incorporating the outline function into the paragraph styles you can now create very large and complex documents easily and powerfully. Though an integrated package, it boasts a very impressive word processing module. It has the additional advantage of being very compact, making it ideal for PowerBooks. For a more complete description, see "Integrated Packages." It is a wonder that MacWrite Pro came from the same company.

*Claris Corp., 5201 Patrick Henry Dr., PO Box 58168, Santa Clara, CA, 95052-8168
408-727-8227 (customer relations), 800-544-8554 (U.S. upgrades), 408-987-7440, 800-334-3535 (U.S. dealers)*



Nisus Writer 4.0

\$395

After a period of invisibility in the Mac world, Nisus has surfaced with an excellent upgrade to its powerful Nisus Writer word processor. It sports an incredible number of features, including multiple clipboards; support for multiple languages within the same document; windows that can be tiled or stacked and split horizontally and vertically; synchronized scrolling; line numbers; and invisible characters. Search and Replace includes a pattern-matching facility that allows users to specify a literal or more general search pattern. Text will wrap around graphics, and graphics can be pasted into text as characters. It has a steeper learning curve than many other programs, but its power and speed make it worth the effort. Some versions require hardware copy protection.

*Nisus Software, Inc., PO Box 1300, Solana Beach, CA, 92075
619-481-1477, 619-481-6154, 800-922-2993*



WordPerfect 3.5

\$100

No other word processing program developer has shown greater commitment to the latest developments in the Mac OS as WordPerfect. WordPerfect was the first high-end word processing program to produce a PowerPC native version, the first to support System 7.5, and the first to support QuickTime. It supports Apple Events, AppleScript, and WorldScript. WordPerfect remains committed to AOCE. This wouldn't mean much if WordPerfect was a lame program. It's not. Version 3.5 is impressively quick and customizable. A series of 8 button bars are available to use or hide as you choose. You can create your own button bars if you wish make access to your favorite commands quick and easy. Create columns and tables with a click or use the powerful drawing program integrated into WordPerfect. It also fully supports drag and drop (and has for some time). This excellent program has its shortcomings, of course (like limited character styles), but overall it is a very impressive and full-featured Macintosh program. The latest update adds basic HTML capabilities and corrects a number of glitches with the prior version.

*Novell Corp., 1555 N. Technology Way, Orem, UT, 84057
801-225-5000, 801-228-5377, 800-451-5151*

TEST EDITORS



BBEdit 3.1
BBEdit Lite

\$79
Freeware

BBEdit was originally a Freeware text editor, but by "popular demand" it has gone commercial. Currently, versions include BBEdit 3.0 Lite (Freeware version) and BBEdit 3.1 (commercial). Anyone looking for a great text editor for programming, or anything else, should get BBEdit. It supports project files of the THINK languages and CodeWarrior; works with ToolServer; and has a built-in browser, Balloon Help, and lots of other neat things.

*Bare Bones Software, P.O. Box 108, Bedford, MA, 01730-0108
bbsw@netcom.com, 73051.3255@compuserve.com*

WORD PROCESSING ACCESSORIES



American Heritage Talking Dictionary 3.6 (CD-ROM)

\$40

The American Heritage Dictionary is fast, has 200,000 referenced words (including usage notes, geographical names, and famous people), a thesaurus with over 500,000 words, and a Dictionary of Cultural Literacy with tens of thousands of listings. The definitions are word-for-word identical to the paper edition, minus the illustrations. It has great search capabilities, including anagrams, alternate spellings (chiefly British), wild cards, and WordHunter, which can do Boolean searches. Avoid the smaller Standard Edition, which contains only 100,000 words and takes up 5 megs but leaves out all the people and places, and words with more than about four syllables.

SoftKey International, 800-582-8000, 800-843-2204



EndNote Plus 2.1
EndLink 2.0

\$179
\$59

Keeping track of your references is always a problem, whether you are preparing a book, professional article, or term paper for school. EndNote Plus, a powerful database that knows all about bibliographic references and styles, almost makes writing term papers fun. It automatically generates a correctly formatted bibliography and footnotes for your paper. There is a slick plug-in module that works in Word, and a new Japanese localized version. EndLink enables you to transfer bibliographic references from online and academic services directly into your personal bibliographic database. A major time-saver for online researchers.

*Niles and Associates, 800 Jones St., Berkeley, CA, 94710
510-559-8592, 510-559-8683*

**Retrieve It! 1.1****\$29**

A powerful, affordable utility that searches for any specified text string by single word or entire phrase. It will even check file servers and CD-ROMs, and you don't have to open the application used to create the file. Great for when you've forgotten what the heck you named that file six months ago!

Claris Corp., 5201 Patrick Henry Dr., PO Box 58168, Santa Clara, CA, 95052-8168

408-727-8227 (customer relations), 800-544-8554 (U.S. upgrades), 408-987-7440, 800-334-3535 (U.S. dealers)

**Working Watermarker v 1.0****\$36**

This extension lets you place a "watermark" on any document you print. Design your own pattern or watermark. Add "Draft," "For Your Eyes Only," a logo, "Do Not Copy," or whatever you please. Control the process from your normal Print dialog box, where you can control which pages get watermarked, what message to print (you paste in a graphic), and how dark to print the watermark. Simple, yet impressive.

Working Software, Inc., PO Box 1844, Santa Cruz, CA, 95061-1844

408-423-5696, 408-423-5699, 800-229-9675

ENVELOPE PRINTING**Bar Code Pro 2.0****\$200**

A clean and simple-to-use bar code creation tool that kicks out PICT or EPS graphics files. UPCE, Postnet/FIM, Code 39 (a personal favorite!), Pharmacode, etc. The images can be placed directly into page layout programs like QuarkXPress and PageMaker or your Word Processor. Over 40 symbologies and variations are included.

Synex, 692 10th St., Brooklyn, NY, 11215

(718) 499-6293, (800) 447-9639, Fax (718) 768-3997

**MacEnvelopes Pro****\$179****MacEnvelopes 5.2****\$60**

Printing envelopes is usually an awful chore. MacEnvelopes 5.2 makes it much easier. It works with any printer, massive amounts of records, and any customized layout a user wants; it will even print graphics and postal bar codes. If you want to integrate professional list management, envelope and label graphic design, and printing in one fast package, check out MacEnvelopes Pro.

Synex, 692 10th St., Brooklyn, NY, 11215

718-499-6293, 718-768-3997, 800-447-9639

NUMBER CRUNCHING**ClarisWorks 4.0****\$129**

For those with modest spreadsheet needs, or limited memory and disk space, ClarisWorks is an excellent choice. Though an integrated package, its spreadsheet module is robust, yet compact. For more information see "Integrated Packages."

Claris Corp., 5201 Patrick Henry Dr., PO Box 58168, Santa Clara, CA, 95052-8168

(408) 727-8227 (customer relations), (800) 544-8554 (U.S. upgrades), (800) 334-3535 (U.S. dealers), Fax (408) 987-7440

**DeltaGraph Pro 3.5.2****\$135**

As statistical packages become more versatile and business presentations by computer more common, the demand for sophisticated graphing programs is stronger than ever. Spreadsheets like Microsoft Excel have impressive graphing modules, but no program offers a wider range of charts than DeltaGraph Pro. It has dozens of chart types (some unique), PostScript, import/export, slide show effects, warm links with Excel, and free tech support. It's the best value for presentation and general charting. This latest version sports a revamped interface, over 60 chart types, 200 chart styles, and support for AppleScript. It is System 7.5-savvy, and Power Mac native. Save by checking competitive upgrade pricing before you buy.

DeltaPoint Inc., 2 Harris Ct., Ste. B-1, Monterey, CA, 93940

(408) 648-4000, (800) 446-6955, Fax (408) 648-4020



Microsoft Excel 5.0

\$295

Excel is universally acknowledged as the best spreadsheet for the Mac and/or Windows. Both versions share a single manual, but that's less of a bother than it would seem. This product is easier to learn and use, and more feature-packed for the power user than the competition. But watch out, Excel is a major resource hog, requiring tons of RAM and loads of hard drive space. If you are not a power spreadsheet user, take a look at ClarisWorks. If you already own an earlier version of Excel, you may also want to forego the upgrade to 5.0.

*Microsoft Corp., One Microsoft Way, Redmond, WA, 98052-6399
(206) 882-8080, Fax (206) 936-7329*

DATABASE



4th Dimension 3.5

\$680

4th Dimension Server Version 1.5 (2 users)

\$990

4th Dimension is the premier database package for the Macintosh when you are dealing with massive numbers of records. Its interface is relatively easy to use, considering its power. This fully relational database is the program BMUG uses to keep track of members and purchases. 4D Server has sped things up 3 to 4 times, and the recently-released PowerPC version and compiler increase performance 3 to 5 times over that. No other database system offers this elegance and power to create applications or manipulate data. It includes support for multiple active windows, background processes, and the ability to make developmental changes on the fly. The pared-down version, 4D First, is not that much simpler, but is less powerful and is not multi-user capable.

*ACI US, 20883 Stevens Creek Blvd., Sunnyvale, CA, 95014
(408) 252-4444, (800) 384-0010, Fax (408) 252-0831*



FileMaker Pro 2.1v4

\$99

FileMaker Pro Server

\$990

When someone comes into the BMUG office and asks about database programs, 90% are referred to FileMaker. This program offers the best features for the price, and is simple enough for even basic Mac users. It lacks true relational features (that will change in the near future), but if you don't know what this means, this program could be the right one for you. It does labels and lists automatically (with full customization) and is loaded with powerful Apple Events and scripting features. We even keep these Choice Products listings in a FM Pro database! The new Server version speeds things up considerably on a network.

*Claris Corp., 5201 Patrick Henry Dr., PO Box 58168, Santa Clara, CA, 95052-8168
(408) 727-8227 (customer relations), (800) 544-8554 (U.S. upgrades), (800) 334-3535 (U.S. dealers), Fax (408) 987-7440*

FORMS



Informed Manager

\$99

Shana has recently upgraded and integrated its programs that allow you to design "intelligent" forms that are ready to be filled out on screen. Tab delimited fields and popup choices make completing the forms easy. It will even do the math for you. The forms can be emailed to others via ccMail, Eudora, PowerTalk, MSMail, and QuickMail. Various add-ons are ready when you want to grow onto a network. The Informed Designer CD-ROM is included. (This CD-ROM has been distributed free over the past year and is a great introduction to this product.

*Shana Corp., 9650 20th Ave. #105, Edmonton, Alberta, Canada, T6N 1G1
(403) 463-3330, Fax (403) 463-3343*

INTEGRATED PACKAGES



ClarisWorks 4.0

\$120

Version 4.0 of this great "works" program adds a bunch and puts it even further in front of the rest of the pack. While most integrated software packages have many separate modules interacting at minimal levels, ClarisWorks allows you to have a fully functional spreadsheet in your graphics document or word processor, or whatever. The word processing and

spreadsheet modules are great for everyday use and will easily meet the needs of the basic and intermediate user. Amazingly, with all this power, ClarisWorks works just fine with less than 1 meg of RAM, making it perfect for PowerBooks. With the (included) Claris translators, you can also access documents made by most of the popular applications on the market.

Claris Corp., 5201 Patrick Henry Dr., PO Box 58168, Santa Clara, CA, 95052-8168

(408) 727-8227 (customer relations), (800) 544-8554 (U.S. upgrades), (800) 334-3535 (U.S. dealers), Fax (408) 987-7440

PRESENTATION



Persuasion 3.0

\$100

Persuasion is the product of choice for slide and screen business and educational presentations. A new set of palettes was added with version 3, permitting improved control over text and color. Its impressive library of templates and chart styles was also enhanced. Persuasion supports importing of data from a variety of other programs. The interface is much friendlier, yet the program is more powerful—a nice combination.

Adobe Systems, Inc. 1, PO Box 6458, Salinas, CA, 93912

206-343-3360, 800-628-2320

IMAGE PROCESSING



Adobe Photoshop 3.0.4

\$560

Photoshop 3.0—a complete rewrite of the best image manipulation software on the market—is faster, more powerful, and more expandable than ever. Supports hardware add-ons, and its plug-in modules allow many scanners and compression packages to be directly accessed from within the application. There are new palettes for channel control, path creation, and on-the-fly color selection. New features layering, new color correction tools and a few dozen new filters. It's RAM-hungry but the only serious tool for image tweekers. Upgrade from prior versions for only \$179.

Adobe Systems, Inc. 2, PO Box 6458, Salinas, CA, 93912

(800) 685-3526, Fax (408) 644-2004



DeBabelizer Toolbox 1.6.5

\$260

DeBabelizer Lite 1.1

\$70

The Toolbox offers image processing and translation for dozens of graphic and animation formats and platforms. Images can be automatically processed using internal scripting. In addition to editing and manipulation palettes the Toolbox supports a variety of plug-ins. The Lite version offers robust translation for bit-mapped, scanned and paint files but without the scripting, palette manipulation and image processing features. Both versions handle 24-bit and 8-bit color reduction.

Equilibrium Technologies, 475 Gate Five Road, Suite 225, Sausalito, CA, 94965

(415) 332-4343



GraphicConverter 2.2

\$35 (Shareware)

GraphicConverter is a Shareware application that can open and read most common Mac, ATARI, Amiga and IBM formats to Mac formats and convert them from one format and back again as desired. It supports printing on almost any Macintosh printer. You can use GraphicConverter to convert files you find online for use in other programs, to view files, or to print them out. A versatile utility for viewing graphics from almost any source.

Lemke Software, Insterburger Str. 6, 31228, Peine, Germany



JPEGView 3.3

Postcardware

A useful and stable program with a good interface, JPEG View serves primarily as an image viewer for JPEG-compressed images. The most recent version, 3.3, comes as a Fat binary and works on regular Macintoshes equipped with System 7 and on Power Macintoshes.

Aaron Giles, 182 E. 95th Street 11E, New York, NY, 10128

GRAPHICS AND DRAWING



Adobe Illustrator 6.0

\$390

This version of Adobe's PostScript illustration package makes the competition pale. For features, ease of use, and clean output, Illustrator goes beyond the scope of other Mac software. It gives you the ability to edit and create objects "in-preview," organize objects into layers, and change paint attributes modelessly. Illustrator has always been precise at generating clean PostScript but in the past has had the least automated features, requiring users to create blends of objects to add simple gradient fills. With Version 6, Illustrator has added seamless integration with Photoshop and PageMaker, built-in color separation, path patterns for borders, frames, and other unique shapes, plus a rasterizing feature that converts any Illustrator image into pixel-based artwork which can be resized at any resolution.

*Adobe Systems, Inc. 2, PO Box 6458, Salinas, CA, 93912
(800) 685-3526, Fax (408) 644-2004*



ClarisDraw 1.0

\$199

ClarisDraw is the next generation of the MacDraw Pro drawing standard, incorporating more than 75 new features. New tools include regular color fills, gradients, beziers and shadows, full 24-bit color painting, image editing effects, presentation special effects, QuickTime video support and enhanced text handling with linked frames, text wrap and style, and built-in intelligence. SmartSymbol libraries and 3,400 pieces of clip art provide new drag-and-drop graphics creation and editing capabilities. Compatible with MacDraw II and MacDraw Pro files and data, as well as other industry-standard file formats (EPSF, TIFF, PICT, PICT2, CGM, MacPaint, and QuickTime). Seamless cross-platform (Mac and Windows) transparency across applications and platforms. Targeted for the business environment.

*Claris Corp., 5201 Patrick Henry Dr., PO Box 58168, Santa Clara, CA, 95052-8168
(408) 727-8227 (customer relations), (800) 544-8554 (U.S. upgrades), (800) 334-3535 (U.S. dealers), Fax (408) 987-7440*

PLUG-INS, EXTENSIONS, AND ADDITIONS



Kai's Power Tools 3.0

\$119/\$199

A set of over 30 powerful generators and filter plug-ins for Adobe Photoshop, Fractal Design Painter, and other programs that use plug-in technology. The interface alone makes this program an essential part of any self-respecting artist's software toolbox. New features include KPT Lens F/X for exploring filter enhancements in real time, a spheroid designer, and an Interform to mix textures precisely. HSC Software, 6303 Carpenteria Av, Carpenteria, CA, 93013

(805) 566-6200, (800) 472-9025, Fax (805) 566-6385



KPT Vector Effects

\$120 (street)

KPT Vector Effects is a powerful set of plug-in extensions for Adobe Illustrator and Macromedia FreeHand that enable you to create special effects like distortion, warping, 3D extrusion, bevel embossing, perspective distortion and shadowing that manually would have taken hours to create or simply would not have been possible. Similar to Kai's Photoshop filters, Vector Effects' interface is intuitive and easy to use. HSC Software, 6303 Carpenteria Av, Carpenteria, CA, 93013

(805) 566-6200, (800) 472-9025, Fax (805) 566-6385

PAINTING



Dabblers 2.0

\$50

This inexpensive product from the programming masters that brought us Painter and Sketcher has exceptional features. Designed for basic Mac users, it offers ease of use and compatibility with many types of Macs. Users can have fun creating natural-looking art—from finger painting to impressionistic oil painting in 16-bit color. The "tracing paper" option helps assure accurate animation. For best results, use a pressure-sensitive tablet like the WACOM; do not use a mouse.

*Fractal Design Corp., 335 Spreckels Dr., Ste. F, Aptos, CA, 95003
(408) 688-8800, (800) 647-7443, Fax (408) 688-8836*



Painter 4

\$380

The best textural painting software there is for the Mac. This powerful program handles multiple floating selections, a gradient composer to create color ramps and gradients, a wealth of painting tools and effects, and multimedia tools. A new mosaic feature allows cloning or painting with tiles. You can even apply Painter's tools to QuickTime movies frame by frame. If you've got a pressure-sensitive tablet, this is the way to go, hands down (or is that pens down?).

*Fractal Design Corp., 335 Spreckels Dr., Ste. F, Aptos, CA, 95003
(408) 688-8800, (800) 647-7443, Fax (408) 688-8836*

DIGITAL VIDEO



Adobe Premiere 4.2

\$490

Powerful digital video software with intuitive user interface displays. Tracks in "filmstrip" style, allowing users to see all the details in clips. Animated icons simplify selection of digital effects including wipes, fades, dissolves, zooms, and page turns. Adobe Photoshop-compatible filters can be applied across video segments to achieve special effects and image control. You can superimpose titles, graphics, and even other video images to create dramatic effects. Comes standard with a CD-ROM containing tutorials, clip media, and documentation.

*Adobe Systems, Inc. 3, 1585 Charleston Rd., Mountain View, CA, 94039
(415) 961-4400, (800) 833-6687, Fax (415) 961-3769*



After Effects 3.0

\$650

Superb digital post-production tool for multimedia, even broadcast video. You can engage in precise motion control, time remapping and batch rendering, plus multiple effects per layer. The result is smooth motion graphics, eye-catching special effects and superior composites. As an Adobe product it works well with Photoshop, Premier and Illustrator. Very powerful.

*Adobe Systems, Inc. 3, 1585 Charleston Rd., Mountain View, CA, 94039
(415) 961-4400, (800) 833-6687, Fax (415) 961-3769*



QuickTime 2.1

\$Appleware (Free)

This amazing version of QuickTime has set the standard for digital video across the Mac-Windows barrier. Capable of playing back movies, doubled to fill a 13-inch screen at 30 frames per second, this technology has gone from amazing to astounding. With the addition of the optional "Instruments" file, QuickTime 2.1 also supports MIDI, allowing a mere 10k file to play for minutes with incredible quality. Lastly, the "Power Plug" optional file adds Power Mac support, creating even more incredible performance.

*Apple Computer Inc., 1 Infinite Loop, Cupertino, CA, 95014
(408) 996-1010, (800) 767-2775 Product Info, (800) 538-9696 Dealer Locations*



Peter's Player 1.1

\$20 (Shareware)

A replacement for Apple's Simple Player, this program does a number of tricks to make playing QuickTime movies as fast and smooth as possible. It automatically sets the pixel depth to the best setting, hides the scroll bar on the bottom, and does other nifty things. Optimized for either the 680x0 Macs or the PowerPC, this is a major improvement over most other players, especially on the older Macs.

Peter Lee, 39 Canton Ave., Amherst, MA, 01002-1803

MULTIMEDIA AUTHORING



Adobe Fetch 1.2

\$99

The ultimate in multimedia clip-storage. Lets you organize sounds, pictures, and QuickTime movies for easy retrieval and display. Automatically imports all compatible files available on multiple storage devices.

*Adobe Systems, Inc. 1, PO Box 6458, Salinas, CA, 93912
(800) 628-2320, Fax (206) 343-3360*



HyperCard 2.3.1

\$100

The basic engine behind most current CD-ROMs. The newer version 2.3 adds Power Mac native code and enhanced color support and scripting commands. While not exactly high-level, it does many jobs that other development engines just can't compare with as far as simplicity and accessibility. Offers stand-alone application capability and inexpensive distribution.

*Apple Computer Inc., 1 Infinite Loop, Cupertino, CA, 95014
(408) 996-1010, (800) 767-2775 Product Info, (800) 538-9696 Dealer Locations*



Macromedia Director 4.0

\$800

A powerful animation and authoring tool for creating high-quality multimedia presentations, animations, and interactive applications. Its interface makes use of Lingo commands..

*Macromedia, 600 Townsend St., San Francisco, CA, 94103
(415) 252-2000, Fax (415) 626-0554*

RENDERING AND 3-D



Adobe Dimensions 2.0

\$128

The easy way to take your PostScript drawings from 2-D to 3-D. Lets you revolve paths around an axis, extrude, map 2-D or 3-D objects onto any curved surface, and combine shapes to make more complex objects. Another excellent Adobe product.

*Adobe Systems, Inc. 3, 1585 Charleston Rd., Mountain View, CA, 94039
(415) 961-4400, (800) 833-6687, Fax (415) 961-3769*



Alias Sketch! 2.0

\$560

A free-form 3-D illustration and design application that provides all the benefits of working in 3-D: shape creation and manipulation; the ability to view objects from any perspective; and automatic calculation of real-world lighting, shadows, reflections, and textures. Very cool.

*Alias Research, Inc., 110 Richmond St. E, Toronto, Ontario, M5C 1P1, Canada
(416) 362-9181, (800) 447-2542, Fax (416) 362-4696*



MacRenderMan

A great rendering engine. Not the fastest in the world, but definitely the highest-quality output. RenderMan is capable of creating the most realistic textures, depth-of-field, and motion blur with its object-oriented description language. It used to be available separately but is now available only in Pixar bundles (Showplace, Typestry, etc.) from mail order companies.

*Pixar, 1001 W. Cutting Blvd., Richmond, CA, 94804
(510) 236-4000, (800) 888-9856, Fax (510) 236-0388*



KPT Bryce 1.0

\$120

The landscape rendering program used to create the Fall '94 Newsletter cover. Spectacular landscapes, dozens of preset skies, grounds, and terrains which can be combined in countless ways. It took forever to render (until we got the Power Mac native version!), but the results were worth it. Another incredible package from Kai and HSC.

*HSC Software, 6303 Carpenteria Av, Carpenteria, CA, 93013
(805) 566-6200, (800) 472-9025, Fax (805) 566-6385*



StudioPro Blitz 1.75

\$960

While the ranks of three-dimensional players have swelled since Strata Vision 3D first come on the scene, Strata is still one of the few to offer a complete modeling, rendering, and animation environment. A new intuitive interface expands the

studio-quality Animation System with extensions that include Shatter, Atomize, and Explode. Native Power Mac acceleration speeds up the photo-realistic rendering algorithms. A PowerMac is required and QuickDraw 3D is supported.

*Strata Inc., 2 W. Saint George Blvd., Ste 2100, St. George, UT, 84770
(801) 628-5218, (800) 869-6855, Fax (801) 628-9756*



Poser 1.0

\$100

This amazing and inexpensive new product renders human figures making it easy to incorporate photo quality models in infinite variety. The figures are easy to manipulate into realistic positions and to render using custom color and bump maps. Check out the cover of this Newsletter to get an idea of what we mean.

*Fractal Design, 335 Spreckels Dr., Ste. F, Aptos, CA, 95003
(408) 688-8800, (800) 647-7443, Fax (408) 688-8836*



Typestry 2.1

\$185

This product is designed exclusively for the placing and rendering of type in a 3-D scene. Utilizing the MacRenderMan engine, it produces astoundingly real results. The relatively simple interface lets just about anyone explore the realm of 3-D graphics without all the difficult modeling procedures. Capable of animating type, it has been used to create titles for many fabulously produced TV specials like the Motion Picture Academy Awards.

*Pixar, 1001 W. Cutting Blvd., Richmond, CA, 94804
(510) 236-4000, (800) 888-9856, Fax (510) 236-0388*

PUBLISHING



Adobe PageMaker 6.0

\$550

Our choice for the premier page-layout application. Many would argue for QuarkXPress, but Quark's tech support, interface quirks, corporate policies, and code-stability leave too much to be desired. PageMaker has long been the follower in the feature race, but Aldus/Adobe's implementation far exceeds the rest of the market in ease of use, technical support, and customer service. Version 6.0 is a fairly quick Adobe style revision and is well worth the update. PM 6.0 now supports multiple master pages, fast object grouping, masking, Photoshop plug-ins, auto-trapping, auto Acrobat PDF file creation, and complete HTML exporting. While these are major advancements we are still looking forward to a complete Adobe-style "Quark-killer" next year in PageMaker 7.0. Just about everything BMUG produces goes through PageMaker, including this Newsletter. We have found it much easier to get novice DTP volunteers up and running with our PM layouts than to get them to easily use XPress. Overall PageMaker makes it easier to manage such a large publication. The Power Mac native version of it no longer costs extra; the whole thing ships on either floppies or a CD-ROM .

*Adobe Systems, Inc. 1, PO Box 6458, Salinas, CA, 93912
(800) 628-2320, Fax (206) 343-3360*



Acrobat 2.1

\$140

Acrobat Pro 2.1

\$420

The vision of Adobe to produce an electronic document-exchange file format, free of platform and font limitations, while carrying all the detail and complexities of PostScript sounded too grand to become real—and with version 1.0 of Acrobat it certainly was bleak. Now comes the truly amazing version 2.0—smaller, faster, and completely seamless. The Acrobat Portable Document Format (PDF) lets you transport documents to and from any Mac, DOS, Windows, or UNIX application—and environment! The Acrobat Reader 2.1, which comes with Acrobat 2.1, is freely distributable and fits on one HD disk (and now includes a complete and Power Mac version of ATM!). Electronic documents are easy to produce and edit with any program that outputs PostScript. The Acrobat Distiller that comes in the Acrobat Pro package can take raw PostScript code and compile Acrobat PDF files, embedding fonts and EPS graphics for perfect translation to any screen. Fully Power Mac native.

*Adobe Systems, Inc. 3, 1585 Charleston Rd., Mountain View, CA, 94039
(415) 961-4400, (800) 833-6687, Fax (415) 961-3769*

FONTS



Adobe Typeface Library

\$Prices vary

From the creators of PostScript, Adobe's fonts are the most professionally hinted and exact to the designer's specifications. Whether your output is created on a StyleWriter using ATM or on a high-end Linotronic, Adobe fonts will always look their best. Adobe's MultipleMaster font technology with flexible weights and widths is the wave of the future, and used throughout all BMUG publications.

*Adobe Systems, Inc. 2, PO Box 6458, Salinas, CA, 93912
(800) 685-3526, Fax (408) 644-2004*



The BMUG Font Collection & Desktop Publisher's Toolkit

\$25

BMUG has collected over 1,700 PostScript and TrueType fonts all in one place. This collection includes the contents of the entire BMUG Font Library! Many are as good as the fonts from Adobe. This CD-ROM also includes tons of Shareware publishing tools every Mac user shouldn't be without. There is no better product for exploring font options on a Mac while keeping your pocketbook intact.

*BMUG, Inc., 1442A Walnut St., #62, Berkeley, CA, 94709-1496
(510) 549-2684, (800) 776-2684, Fax (510) 849-9026*



Foreign Language Laser Fonts

\$Prices vary

The best foreign-language LaserWriter fonts around. They have PostScript Type 1 and TrueType fonts for most alphabets, including the hard ones like Hebrew and those from East Asia.

*Ecological Linguistics, PO Box 15156, Washington, DC, 20003-5156
(202) 546-5862*

PUBLISHING ACCESSORIES



Adobe Type Manager 3.8.2

\$free

ATM renders PostScript fonts for any QuickDraw device (the screen, StyleWriters, etc.). It is a requirement for any sort of page layout, newsletter creation, or sign-making—just about anything that requires text at uncommon sizes. It takes a bit of RAM, but is worth it for the beautiful way it displays fonts. Version 3.8.2 is available free as part of Adobe Acrobat Reader 2.0.1, which is downloadable from the BMUG BBSes; it is also available on the new BMUG Font ROM. Version 3.8.2 is Power Mac native and can even render KanjiTalk PostScript fonts.

*Adobe Systems, Inc. 2, PO Box 6458, Salinas, CA, 93912
(800) 685-3526, Fax (408) 644-2004*



Now WYSIWIG Menus (Part of NOW Utilities 5.0)

\$90

Far and away the most conflict-free Font menu modifier for showing you what your fonts look like when you need to know—when your choosing them from the Fonts menu. Unifies font families and works in most programs. Customizable to prevent problems with programs that don't like it.

*Now Software, Inc., 921 SW Washington St. #500, Portland, OR, 97205
(503) 274-2800, (800) 237-3611, Fax (503) 274-0670*



PopChar 2.7.1

\$Postcardware (Free)

PopChar is a control panel that with the touch of a menu bar icon generates a window displaying every possible character (or set of characters) available in the current font. Insert the character into your document by simply clicking on the character in the PopChar window. It even displays the keyboard combination used to generate that character, if you want to memorize it. One of the best Mac font utilities, and it's free! Available on BMUG's Text C1 disk for \$4, or on the BMUG Font Collection and Desktop Publisher's Toolkit CD-ROM.

Günther Blaschek, Petzoldstr.31, A-4020 Linz, Austria



Suitcase 2.1.4p3

\$60

If you deal with lots of fonts, you need Suitcase. Many thought System 7.1's Fonts folder would do it in, but if you have more than a couple dozen fonts, you will quickly reach System 7's practical limits. When you do, Suitcase is a must-have. Unfortunately, Symantec doesn't seem to be devoting substantial resources to this fine product, so the official version stops at 2.1.4.

*Symantec Corp., 10201 Torre Ave., Cupertino, CA, 95014
(800) 441-7234, Fax (503) 334-7400*

OCR



OmniPage Professional 5.0

\$490

OmniPage has always been among the fastest and most accurate of the OCR packages. Currently, its expert tools make it the clear choice for power users. The Preview window allows you to zoom in and check the brightness settings. Multiple zones per page can be selected and specified for different content. AccuPage can process tinted or shaded pages. There is a training mode for non-standard characters. The after-processing view is actually a full-featured word processor with a spell checker, and there is a separate module for editing grayscale images. Version 5 introduces 3-D OCR to view the depth of character pixels and multiple zones that allow zone templates to be saved and reused. It's expensive, but it does everything you are likely to want. If you already own a competitor's product, you may be able to purchase this program for as little as \$130.

*Caere Corp., 100 Cooper Ct., Los Gatos, CA, 95030
(408) 395-7000, (800) 535-7226, Fax (408) 354-2743*



TextBridge 3.0

\$80

In the past, if you wanted to do OCR your only choice was to spend \$500 on a program like OmniPage, or pay less for software that was either feature-poor or error-prone. Now, with TextBridge Mac, anyone can afford high-quality OCR. TextBridge Mac is among the most accurate OCR programs and even does a good job with faxes—the bane of any OCR program. It can even handle graphics with features like a TIFF Queue that can process multiple images into a single document. It supports the TWAIN standard and is PowerPC native. Unless you are into heavy-duty OCR, TextBridge Mac can't be beat for price and performance.

*Xerox Imaging Systems, Inc., 9 Centennial Dr., Peabody, MA, 01960
(508) 977-2000, (800) 248-6550, Fax (508) 977-2435*

FINANCES



MacInTax

\$40

Nobody likes to do taxes, even on a Mac. But tax software can make the process a bit less painful. If you itemize deductions or use schedules C, D, or E, it's a lot easier to do your taxes with MacInTax than to fill out the forms by hand. It includes the option of electronic filing for those who want a fast refund (the IRS charges a premium for this). There are additional packages for state returns and a professional series. The guided tour of your taxes is well laid out and helpful, but preparing taxes, even with MacInTax, is not for the novice. If you have any doubts, contact a professional.

*Intuit Inc., 2650 East Elvira Rd. #100, Tucson, AR, 85706-7123
(415) 322-0573, (415) 858-6010, (800) 624-8742, Fax (800) 756-1040*



MultiLedger 4.0

\$120

CheckMark Payroll 5.4

\$100

Every accountant who has seen this package likes it for its simplicity and direct approach. Modules include accounts payable, accounts receivable, general ledger, and inventory. It has full import and export capabilities and you have great flexibility in preparing and formatting reports. It is also multi-user supporting up to 10 users. It is PowerPC native and the payroll module have everything you are likely to need to calculate everything from payroll deductions to 401(k) accounts. Great program for the small- and medium-sized business owners for whom accounting terms are not a foreign language.

*CheckMark Software Inc., 724 Whalers Way, Bldg. H, Fort Collins, CO, 80525
(303) 225-0522, (800) 444-9922, Fax (303) 225-0611*



M.Y.O.B. Small Business Accounting 6.0

\$80

M.Y.O.B. Small Business Accounting 6.0 with Payroll

\$135

This is a very innovative package, great for those who want to computerize the books for their small business, but who don't know much about accounting. First-rate manuals and navigation screens help you get started. Screens can be customized to look like their paper equivalents (e.g. invoices, purchase orders, or checks). It is a full featured accounting program with general ledger, check writing, inventory management and more. You can track the progress of any job and generate fully customizable reports. It can even dial the phone, and link notes to a calendar and to do list. It's perfect for a sole proprietor or small business owner. The new version adds a Quicken import feature.

*Best!Ware, 300 Roundhill Dr., Rockaway, NJ, 07866
(201) 586-2200, (800) 322-6962, Fax (201) 586-8885*



Quicken Deluxe 6.0 CD-ROM

\$50

Quicken 6.0

\$35

At last Quicken Deluxe makes it to the Mac. New features on the Deluxe version include a home inventory module and a mutual fund finder. You can "ask the experts" to provide financial advice. The CD-ROM also uses a multimedia approach to financial information. The "regular" program is fast and offers beautiful color graphics, improved tax stuff, loan amortization, and more. It can auto-enter repeating and automatic payments. You can zoom in to detail reports and actual transactions. The latest version adds online banking and investment tracking capabilities. If you get a Quicken VISA Gold card (14% APR, no annual fee) and pay \$3-5 a month, you can get statements on disk or by modem with pre-entered categories for transactions and one-step importing. Quicken has driven the competition from the field.

*Intuit Inc., 2650 East Elvira Rd. #100, Tucson, AR, 85706-7123
(415) 322-0573, (415) 858-6010, (800) 624-8742, Fax (800) 756-1040*

PERSONAL INFORMATION



Now Contact 3.5

\$50

It's the best way to organize information about your friends, clients and associates. Now Contact is extremely fast and works well with Now Up-to-Date. The Reminder and QuickContact menus are unusually clever and well implemented. The consistent look and feel is a real bonus. A free form comments area adds flexibility and QuickPad lets you instantly enter a note or message into the program. Another nice feature is the ability to access phone numbers from the menu bar without starting the application.

*Now Software, Inc., 921 SW Washington St. #500, Portland, OR, 97205
(503) 274-2800, (800) 237-3611, Fax (503) 274-0670*



Now Up-to-Date 3.5

\$50

Now Up-to-Date has become the favorite calendar program of everyone who has had a chance to use it. It's richly customizable, with more features than any other time manager on the market, and fully networkable, too! Works extremely well with Now Contact.

*Now Software, Inc., 921 SW Washington St. #500, Portland, OR, 97205
(503) 274-2800, (800) 237-3611, Fax (503) 274-0670*

COMMUNICATIONS SOFTWARE



ZTerm 1.0b3

\$30 (Shareware)

ZTerm is a versatile telecom program that features XModem, YModem, and ZModem file transfers; VT100 terminal emulation; ANSI screen control; and a scrollbar buffer. This version also allows some simple scripting. Comprehensive docs are included in a separate file. Even though it's Shareware, it outshines many commercial offerings, and the price can't be beat. Available on BMUG's Telecom A1 disk for \$4, and on Planet BMUG.

David P. Alverson, 5635 Cross Creek Ct., Mason, OH, 45040

BBS SOFTWARE



FirstClass 2.7

\$300 for 500 users

FirstClass is the server software used for BMUG BBSes; it can handle thousands of users. It supports simultaneous remote and local network access, and for dial-up users it supports either generic terminal emulation or the proprietary, but publicly distributable FirstClass Client software. It remains the easiest-to-use Mac BBS software, and SoftArc has special pricing for users groups. But it is not just BBS software—FirstClass can also be used in business communications as an email system and much more, with the same relative ease of use.

*SoftArc Inc., 100 Allstate Parkway, Markham, Ontario, Canada, L3R 6H3
(905) 415-7000, Fax (905) 415-7151*

WEB VIEWER



Netscape 2.0

With an elegant GUI approach to browsing the World Wide Web (WWW), this Web browser seems to be the successor to Mosaic. Shareware, on its way to being commercial software. If you have a SLIP or PPP account, this is the software for you.

Netscape Communications Corp., 650 Castro St. #500, Mountain View, CA, 94041



Apple Remote Access 2.0.1

\$189

Apple Remote Access 2.0.1 Client

\$59

This utility has changed the way people do business. It's an enabling bit of software that's easy to use. If you need remote access to your computer or network (for file sharing, email, or running your database remotely), this is the product. Attempts have been made to do this, using hardware and software combinations, but they were cumbersome and slow. ARA installs easily, works simply, and features security and speed. After connecting, your remote volumes and printers become available on your local machine. The one caveat is that you really need to run at 14.4k baud to get snappy performance; at 2400, it's a major drag. Version 2.0 sports increased security options and faster performance.

*Apple Computer Inc., 1 Infinite Loop, Cupertino, CA, 95014
(408) 996-1010, (800) 767-2775 Product Info, (800) 538-9696 Dealer Locations*



Nok Nok 2.0

\$50

Nok Nok A/S AppleShare Server

\$159

System 7's file sharing abilities are really nice, but security could stand a lot of improvement. Nok Nok fills this gap by telling you who's logging in, and from where. You can limit how long they can share, and it allows you to keep a log of who's been on and when. Features include file sharing performance adjustment, PlainTalk support (it'll announce the name of the person accessing your machine), and LookOut! (a utility that reveals server access privileges in the Chooser).

*The AG Group, Inc., 2540 Camino Diablo #202, Walnut Creek, CA, 94596
(510) 937-7900, (800) 466-2447, Fax (510) 937-2479*



ShareDevil

ZiffWare (free)

This utility is "ZiffWare" by Robert Hess used to be called "Shaman." It's an easy way to control file sharing. A must for people who are worried about who's logged into their computer over the local network. It is available on ZiffNet and services such as eWorld which carry it.

*Ziff-Davis Publishing Co., 950 Tower Lane 18th Floor, Foster City, CA, 94404
(415) 378-5600*

PROGRAMMING



Metrowerks CodeWarrior 7 Gold
Metrowerks CodeWarrior 7 Bronze

\$399
\$149

CodeWarrior is becoming the programming environment of choice for development on the Macintosh. Compiles for both the 680x0 and Apple's new Power Macs (in native mode). It comes in two versions: Bronze for 680x0 development and Gold for development on either 680x0 or PowerPC processors. Also includes Pascal compiler!

Metrowerks, Inc., The Trimex Bldg., Rte. 11, Mooers, NY, 12958
(514) 747-5999, (800) 247-6553, Fax (514) 747-2822



Symantec C++ 8.4

\$270

It took quite a while but Symantec finally upgraded C++ and made it PowerPC native. The foundation for Mac applications in the past, CodeWarrior has stolen much of its thunder as a development tool for the fastest Macs.

Symantec Corp., 10201 Torre Ave., Cupertino, CA, 95014
(800) 441-7234, Fax (503) 334-7400

SCRIPTING



AppleScript 1.1

\$Appleware (Free)

With the invention of Apple Events way back with System 7 everyone waited years for Apple to make a simple scripting engine to drive them for the non-programmer. Well Apple finally did complete this overdue project, and now you can magically create automated tasks like taking this very writing from the database that it is created and organized in to laying it out in PageMaker—without lifting a finger. For more information on what you can do with AppleScript and to get AppleScript itself check out BMUG's own publication, *The Tao of AppleScript*, published by Hayden Books.

Apple Computer Inc., 1 Infinite Loop, Cupertino, CA, 95014
(408) 996-1010, (800) 767-2775 Product Info, (800) 538-9696 Dealer Locations



QuicKeys 3.0.1

\$99

QuicKeys is a great macro creator that lets you automate how you use your computer—and it works with applications that don't support AppleScript. Why should you type the same things over and over again, when QuicKeys can do it for you?

CE Software, Inc., PO Box 65580, West Des Moines, IA, 50265
(515) 221-1801, Fax (515) 221-1806



The Tao of AppleScript, 2nd Edition

\$25

Straight from the depths of BMUG, the best AppleScript book on the market for learning how to script. Does that sound biased? It probably is, but that doesn't mean it isn't true. This book is designed to introduce programming to the intermediate computer user and anyone interested in AppleScript. Comes with AppleScript 1.1.

BMUG, Inc., 1442A Walnut St., #62, Berkeley, CA, 94709-1496
(510) 549-2684, (800) 776-2684, Fax (510) 849-9026

GENERAL UTILITIES

VIRUS PROTECTION



Disinfectant 3.6

Freeware

The best virus detection and eradication utility you can get (and that includes commercial software!). Installs an extension that protects you from infection and works against all known viruses. Excellent online help and a new color icon. It works over networks, too! It does everything the commercial stuff does, and better—you won't even know it's there! Available on BMUG Utilities V1 disk, for \$4, on the BMUG PD-ROM, and online everywhere. Thank you, John Norstad!

John Norstad

CLOCKS**Invisible Clock 2.0.1****Freeware**

Tired of that clock in your Menu Bar? How about a calm soothing voice that tells you the time instead? This may be even more annoying, but with such a clean implementation as this, you will have to admit that this is one cool bit of software. You can set it to announce the time whenever you specify, even dependent on the day of the week. Available in female and male voices. It's even AppleScriptable!

Chris Holmes

**SuperClock! 4.0.4****Freeware**

A very nice program that installs a clock in your Menu Bar. It leaves room for the Application menu and Balloon Help icons, hides when a screen saver activates, toggles (when clicked) between time and date, and has an optional PB battery indicator and a 12- or 24-hour display format. While SuperClock is Freeware, Steve Christensen asks that you give a donation to the Lucile Salter Packard Children's Hospital at Stanford (725 Welch Rd., Palo Alto, CA 94304). SuperClock is integrated into the Date & Time control panel of System 7.5. The control panel is available on BMUG's Utilities G3 disk for \$4.

Steve Christensen

COMPRESSION**DropStuff 3.5.2****\$30 (Shareware)**

One of the latest compression utilities from Aladdin. Works in tandem with StuffIt Expander. DropStuff is another excellent—no, superb!—Shareware utility used daily in the BMUG office. Available from the BMUG disk library or on Planet BMUG. Drag-and-drop compression. Free to owners of StuffIt Deluxe.

*Aladdin Systems, Inc., 165 Westridge Dr., Watsonville, CA, 95076
(408) 761-6200, (800) 732-8881, Fax (408) 761-6206*

**Stuffit Deluxe 3.5.2****\$66**

Lets face it, StuffIt is the most stable of the current compression programs and the standard on most BBSes and Macs. It easily decompresses a wide variety of compressed file types, including those from PCs. The latest version supports drag and drop from within archives—very cool. If you order direct from Aladdin ask about a users group discount. Check out various vendor bundles for big discounts.

*Aladdin Systems, Inc., 165 Westridge Dr., Watsonville, CA, 95076
(408) 761-6200, (800) 732-8881, Fax (408) 761-6206*

**Stuffit Expander 3.5.2****Freeware**

The counterpart to DropStuff, Expander gives you drag-and-drop expansion of compressed Stuffit files, Compact Pro files, and a number of others. State-of-the-art Shareware and another excellent product from Aladdin. Essential for anyone getting new files from other places.

*Aladdin Systems, Inc., 165 Westridge Dr., Watsonville, CA, 95076
(408) 761-6200, (800) 732-8881, Fax (408) 761-6206*

DISK IMAGING**ShrinkWrap 1.4.2****Freeware**

ShrinkWrap is a Freeware utility made to manage disk images. It incorporates the functionality of DiskCopy and MountImage into one easy-to-use application, then improves on these products by adding on-the-fly compression/decompression with the StuffIt Engine, implementing drag and drop and AppleScript support, and supporting almost all known image file formats. Using ShrinkWrap is a breeze, making it an all around great utility.

Chad Magendanz

EXTENSION MANAGER



Conflict Catcher 3.0.2

\$65

An excellent program for managing your extensions and control panels and pinpointing incompatibilities. With features and ease of use, this new version blows away the rest of the extensions manager market. It still automatically tests for problems; it also lets you define specific, easy-to-select customized sets and lets you control the order in which they load.

*Casady & Greene, Inc., 22734 Portola Dr., Salinas, CA, 93908-1119
(408) 484-9228, (800) 359-4920, Fax (408) 484-9218*

FINDER



FindPro III 1.1.1

ZiffWare (Free)

If you haven't upgraded to System 7.5, this utility, written by Bill Monk and available only from Ziff-Davis, is the best find/search utility available. This control panel intercepts Command-F, bypasses the Finder's Find command, and provides you with a robust file finder that can search by multiple criteria. This may be reason enough to subscribe to ZiffNet Mac. A simplified version of FindPro comes with System 7.5. It has fewer features but also has a much less cluttered interface.

*Ziff-Davis Publishing Co. (Bill Monk), 950 Tower Lane 18th Floor, Foster City, CA, 94404
(415) 378-5600*

MENU ENHANCEMENT



Now Menus (NOW Utilities 5.0)

\$70

This latest version really makes the idea of customizing your menus a dazzling concept. Not only can you customize the Apple menu and change the font used in all your menus as in previous versions, but now you can create an unlimited array of menus for whatever you can imagine—in whatever programs you want them—and with whatever you want in them. Surprisingly compatible with just about everything, you won't be able to live without this once you start using it. Part of the Now Utilities 5.0 package.

*Now Software, Inc., 921 SW Washington St. #500, Portland, OR, 97205
(503) 274-2800, (800) 237-3611, Fax (503) 274-0670*

SCREEN SAVER



After Dark 3.0b

\$28

The latest iteration from the folks who gave us flying toasters, Spock speaking, and Homer Simpson eating your Desktop. This new version adds overdue organization for the multitudes of modules that get collected from all over; it also maintains support for lots of Freeware and Shareware modules (available on BMUG's BBSes and PD-ROM). We recommend the "core" package of modules for the best compatibility and don't really recommend the various licensed "cartoon" or "sci-fi" packages that offer little additional functionality and take loads of hard drive space and RAM. But remember that while they are entertaining, screen savers provide little real benefit to those with modern color monitors, and no matter how you pare it down, After Dark uses a lot of memory and disk space, and has a good share of conflicts with other programs.

*Berkeley Systems Inc., 2095 Rose St., Berkeley, CA, 94709
(510) 540-5535, (800) 877-5535, Fax (510) 540-5115*

RAM ENHANCEMENT



RAM Doubler

\$55

This product came out of the blue at the January '94 San Francisco Macworld Expo to help millions of Mac owners get by with the RAM on hand. It does pretty much what it says it does and is one of the few products that actually lives up to its hype by making your Mac think you have twice as much RAM installed as you really do (using compression and virtual memory tricks). It works with most programs and only slows your Mac down a bit. It works best if you use a number of smaller applications. If you need extra RAM for memory-hungry programs like Photoshop, RAM Doubler won't help. There really is no such thing as a free lunch, but this is the next best thing.

*Connectix Corp., 2600 Campus Dr., San Mateo, CA, 94403
(415) 571-5100, (800) 950-5880, Fax (415) 571-5195*

UNIVERSAL FILE VIEWER**CanOpener 3.0****\$65**

CanOpener is an excellent utility for opening any corrupted text, sound, or picture file. Sometimes it is the only thing that can help. You can open any file, even if it's corrupted, and cut and paste items directly out of the viewing window, unlike most of the recovery products out there. Version 3.0 is native on Power Macs.

Abbott Systems, Inc., 62 Mountain Rd., Pleasantville, NY, 10570

(914) 747-4171, (800) 552-9157, Fax (914) 747-9115

POWERBOOK UTILITIES**PBTools 2.0****\$60**

This PowerBook utility is the only one we can recommend. All the others had proven too buggy and unstable. PBTools is light on features (the author says "no fluff!") but heavy on stability. This utility gives you all the features you really need, including the ability to track multiple batteries. The most important part, however, is that it doesn't crash—which is more than can be said for any of the others.

VST Power Systems, 1620 Sudbury Rd #3, Concord, MA, 01742

(508) 287-4600, Fax (508) 287-4068

HARD DISK UTILITIES**Disk First Aid 7.2****Appleware (free)**

With version 7.2, Apple has performed a major overhaul of this tireless and free utility. It now gives you some idea of what it's actually doing while it hums along. An excellent alternative to any of the larger utilities for daily maintenance of your storage media. We consistently use it as the "last word" on the health of a drive's directory (don't forget to run it repeatedly until your drive gets a clean bill of health). If you don't have it with your system software, get the latest Hardware System Update from your Apple dealer.

Apple Computer Inc., 1 Infinite Loop, Cupertino, CA, 95014

(408) 996-1010, (800) 767-2775 Product Info, (800) 538-9696 Dealer Locations

**FWB Hard Disk ToolKit 1.8****\$120**

For most people, the drive software that comes with your drive is all you'll need. Apple and APS regularly update their drivers so that your hard disk will continue to run smoothly. But if you are a Mac technical wiz and want or need to tweak the innards of your device driver, consider the full version (not PE version) of FWB's HardDisk Toolkit. It is an excellent formatter for fixed, removable, or optical drive (check the list on the box or ask FWB to make sure the drive you'll be using with HDT is supported). It speeds up operations as well or better than any other third party driver software. The latest version is SCSI Manager 4.3-savvy. But remember: this product is not for the amateur. The Personal Edition offers little more than Freeware drivers, and you face expensive upgrades every time Apple tweaks the system software.

FWB, Inc., 2040 Polk St., #215, San Francisco, CA, 94109

(415) 474-8055, Fax (415) 775-2125

**MacTools Pro 4.0****\$95**

Over the last year, all the major hardware utilities have been absorbed by Symantec. Nevertheless, some differences between products remain. MacTools Pro has a clean interface and a strong selection of tools that seem to give it the upper hand in problem-fixing accuracy and disk recovery success. When we need to pull out the big guns on the Helpline, we reach for MacTools. Version 4.0 is accelerated for the Power Macintosh. Owners of previous versions should be able to upgrade for about \$50. But be warned, if you need technical support, it will cost you \$25 and up for help from Symantec. As Symantec also produces Norton Utilities, the days of MacTools may be numbered.

Symantec Corp., 10201 Torre Ave., Cupertino, CA, 95014

(800) 441-7234, Fax (503) 334-7400

HARDWARE DIAGNOSTIC



Peace of Mind 3.0

\$65

Peace of Mind provides useful information about your hardware, and is able to find problems other hardware tools just don't see. There are expert and novice options that provide all the nitty gritty details of what's really going on with your hardware.

*DiagSoft Inc., 5615 Scotts Valley Dr. #140, Scotts Valley, CA, 95066
(408) 438-8247, (800) 342-4763, Fax (408) 438-7113*

BACKUP



DiskFit Pro DiskFit Direct

\$75

\$30

It is amazing how easy backing up can be if you have a well designed backup program, such as DiskFit Pro. The point of DiskFit is that it's inexpensive, not all-inclusive. For even less money, you can get DiskFit Direct, for very simple backups. This program is perfect for the individual home user. It will encourage you to do the task we all avoid-backup!

*Dantz Development Corp., 4 Orinda Way, Bldg. C, Orinda, CA, 94563
(510) 253-3000, Fax (510) 253-9099*



Retrospect 3.0 Retrospect Remote 3.0 with Remote 10 pack

\$145

\$260

Retrospect is easy to use, attractive, and, above all, extremely reliable. Head and shoulders above the competition, it offers compression, error-checking, scheduling, and compatibility with more drives than anything else on the market. The latest version has EasyScript to automate the process. Retrospect is a complete product with every feature you'll need.

*Dantz Development Corp., 4 Orinda Way, Bldg. C, Orinda, CA, 94563
(510) 253-3000, Fax (510) 253-9099*

GAMES

ARCADE



Apeiron

\$\$15 (Shareware)

If you like Maelstrom you are going to love Apeiron. This is the latest contribution from Ambrosia's resident Mac wizard, Andrew Welch, to Ambrosia's growing entertainment collection. Apeiron is Ambrosia's interpretation of Atari's Centipede, cranked up a notch for the nineties. The game revolves around battling a horde of insects in a mushroom patch. A really great game for the young and the young at heart.

*Ambrosia Software, PO Box 23140, Rochester, NY, 14692-3140
(716) 427-2577, (800) 231-1816, Fax (716) 475-9289*



Crystal Caliburn

\$35

Another super pinball game from StarPlay, this time with a King Arthur theme. If you like these games, consider getting Crystal Caliburn and Loony Labyrinth as part of a \$50 bundle and save.

*StarPlay Productions, Inc. (by LittleWing Co.), PO Box 217, Greeley, CO, 80632-0217
(800) 203-2503, Fax (303) 330-7553*



Loony Labyrinth

\$35

The authors of Tristan and Eight Ball Deluxe keep outdoing themselves! They have, once again, created the ultimate in computer pinball. Multi-level and multi-ball play based on a "loony" theme. Cool sounds and totally addicting. You have to see it to believe it.

*StarPlay Productions, Inc. (by LittleWing Co.), PO Box 217, Greeley, CO, 80632-0217
(800) 203-2503, Fax (303) 330-7553*

**Maelstrom****\$15 (Shareware)**

Highly addictive and a whole lot of fun, this is one of those rare, really amazing hit Shareware games. Requires 256 colors. It's a cross between Asteroids and a half-dozen other games, including largely Lunatic Fringe (from the More After Dark module set). Very entertaining sound effects.

*Ambrosia, PO Box 23140, Rochester, NY, 14692-3140
(716) 427-2577, (800) 231-1816, Fax (716) 475-9289*

**PegLeg****\$35**

An outstanding full-color mixture of a shoot 'em up and Asteroids, with all kinds of surprising animated obstacles. Lots of levels and cool graphics. It's great for anyone with a color monitor. Fat binary for Power Macs and 680x0 processors, and will fill even the largest of screens. If you like shoot 'em ups, don't miss this one!

*Changeling Software, 596 Elm St., Windsor Locks, CT, 06096-1603
(203) 292-5087, (800) 769-2768, Fax (203) 292-5089*

**Prince of Persia CD Collection****\$23****Prince of Persia 2: The Shadow and the Flame****\$38**

The Shadow and the Flame is much more elaborate than the first highly-acclaimed Prince of Persia, the stunning full-color graphics, a more involved story line, and lots of new tricks to learn, make this a fabulous sequel. The smooth animation with hair-raising sword fighting make this action-adventure a Mac classic. Incredibly you can get both the original and the sequel on CD for less than either on disk.

*Brøderbund Software, Inc., 500 Redwood Blvd., PO Box 6121, Novato, CA, 94948-6121
(415) 382-4400, (800) 521-6263, Fax (415) 382-4419*

**Swoop****\$15 (Shareware)**

Developed by David Wareing, of Adelaide, Australia, Swoop is an arcade classic combining pulse-quickenning game play with state of the art computer animation and audio effects. Swoop strikes close to Space Invaders in terms of game play. Smooth flowing action, detailed full color graphics, and custom sound effects all provide for an exciting game. The only thing missing is the cash box in which to pump your coins.

*Ambrosia Software, PO Box 23140, Rochester, NY, 14692-3140
(716) 427-2577, (800) 231-1816, Fax (716) 475-9289*

**William's Digital Arcade: Joust****\$27**

William's Digital Arcade is an emulator that translates the original game code from Williams Entertainment's classic arcade game Joust—which means that what you get on your Mac screen is exactly what you used to get for a quarter at the local video arcade. Fun!

*Digital Eclipse, 5515 Doyle St., #1, Emeryville, CA, 94608
(510) 450-1740*

CARDS AND PUZZLES**Eric's Ultimate Solitaire****\$30**

From the author of the popular Shareware Klondike and Forty Thieves comes this truly "ultimate" set of solitaire card games. Full color, clean sounds, and great card-shuffling and card-throwing animation make for a new kind of addiction. Includes features for PowerBook users and is light on your hard drive and RAM.

*Delta Tao Software, Inc., 760 Harvard Ave., Sunnyvale, CA, 94087
(408) 730-9336, (800) 827-9316, Fax (408) 730-9337*

**Power Poker****\$40**

A computer program for poker players and a lot more. The computer-generated players learn from their mistakes and sooner or later play a very good game of poker. The program can also generate great QuickTime movies of the computer-generated players. Up to ten people (humans) can also play when connected via AppleTalk or Ethernet.

*Electronic Arts, 1450 Fashion Island Blvd., San Mateo, CA, 94404
(415) 571-7171, (800) 245-4525*



Shanghai: Great Moments CD-ROM
Shanghai II

\$26
\$20

A long-time favorite of BMUGers near and far. Played with digital Mah Jong tiles, it's a very soothing game. Great Moments adds multimedia video, sound and animation to the game and provides 4 scenarios. Shanghai II is a full-color update to the original. The game offers a variety of tile faces, different layouts to solve, and an editor to create your own layouts.

Activision, 11601 Wilshire Blvd. #10, Los Angeles, CA, 90025
(310) 473-9200, (310) 479-5644 Customer Service



Triazzle Living Puzzle (CD or Disk)

\$20

Berkeley Systems has applied its wacky graphics expertise to an electronic puzzle and has come up successful. Triazzle is cool. It is packed with the sights and sounds of the rain forest. Fitting puzzle pieces together to form an animal causes the animal to come to life with authentic movement and sound. More than just a game, Triazzle also provides information on the animals found in the rain forest game. What's more, Berkeley Systems donates a small percentage of the profits from Triazzle to the Rain forest Alliance, an organization that seeks creative ways to protect this important natural resource. This lets you buy a fantastic game while doing something nice for the environment.

Berkeley Systems, Inc., 2095 Rose St., Berkeley, CA, 94709
(510) 540-5535, (800) 877-5535, Fax (510) 540-5115

CLASSIC MACINTOSH



Dark Castle

\$28

It's back, and it's in full color. Delta Tao has traded its high-end paint program Zeus to Silicon Beach (Aldus, Adobe, whoever...) for the rights to this classic Mac game. Was it worth it? You bet. This glorious color version will run on all current (color) Macs, and you won't be able to wait for the sequels. It's surprising how well this game still stands up against the modern Mac action games.

Delta Tao Software, Inc., 760 Harvard Ave., Sunnyvale, CA, 94087
(408) 730-9336, (800) 827-9316, Fax (408) 730-9337



Super Tetris

\$35

Like the original Tetris game for the Mac, Super Tetris adds new twists to its addictive predecessor. You'll need to rethink your strategies to deal with a new goal, as well as bombs, bubble blocks, and lots more. Guaranteed to give you a whole new case of Carpal Tunnel Syndrome.

Spectrum Holobyte, 2490 Mariner Sq. Loop, Alameda, CA, 94501
(510) 522-3584, (800) 695-4263

FIRST PERSON



Bolo

\$25 (Shareware)

Bolo is the best network strategy tank game. It supports up to 16 network players at once! There's a map editor for creating or changing the landscapes in Bolo-land, and it even looks good in black & white. Check out the BMUG PD-ROM for a bunch of Bolo modules to add even more variety.

Stuart Cheshire, PO Box 8323, Stanford, CA, 94309-8323



Dark Forces (CD)

\$50

This brand new release from LucasArts raises the bar another notch on the first-person shooting games. With less emphasis on the shooting and more care taken on the creation of very large and complex levels, this game is like a whole world in itself. The levels are richly textured and the realtime-rendered environment is very realistic with flowing water and laser blasts that reflect off walls. We have also been very impressed by the Mac port—while this game obviously started in the PC world of low-res, the Mac version is sharp and Power Mac native. Dark forces is sure to keep you completely entertained for many days or weeks.

LucasArts Entertainment
(415) 721-3300, (800) 782-7927, Fax (415) 721-3342



Marathon 1.2 (CD or Disk) \$40
Marathon 2: Durandal \$45

This first-person 3-D perspective game from the people that brought us Pathways into Darkness is a sophisticated shoot 'em up with strategies, puzzles, and incredible realtime rendered graphics. It's VR-compatible (if you have a virtual reality headset) and comes in Fat binary for Power Macs and 68K Macs. Great over a network with (or more like against) other humans. Be warned, it's pretty violent, but it has enough plot and strategy to win over the timid. The sequel begins where you left off as you are enslaved by a rogue computer, Durandal, and must comb the ruins on an ancient city while struggling to escape. If you are new to Marathon, consider buying the two programs as part of a \$60 bundle.

Bungie Software Products, 1935 So. Halsted St. Suite 204, Chicago, IL, 60608
 (312) 563-6200, Fax (312) 563-0545



Pathways into Darkness \$40

An adventure game that has a first-person perspective with colorful, photo-realistic, smooth scrolling, animated 3-D graphics. You walk through level after creative level of a pyramid/dungeon. A good shoot 'em up, with lots of bad guys along the way. While Pathways is less intense than Marathon or Dark Forces (or even Doom) this is the original first-person perspective game on the Mac and still holds a special place in our entertainment archives. Both 680x0 and Power Mac versions are available.

Bungie Software Products, 1935 So. Halsted St. Suite 204, Chicago, IL, 60608
 (312) 563-6200, Fax (312) 563-0545



Spectre VR \$30

This is the action-packed successor to Spectre. They've added new enemy tanks and lots of cool weaponry, like guided missiles and spinner shots (to send the enemy spinning in circles). You can edit the keys, and play network games across zones! Surfaces can display QuickTime movies, and the night sky is gorgeous. Additional serial numbers can be obtained for \$10.

Velocity Development, 4 Embarcadero Suite 3100, S.F., CA, 94111
 (415) 274-8840, Fax (415) 982-3299

FLIGHT SIMULATORS



A-10 Attack \$50

From the original creator of Hellcats comes a more versatile aircraft simulator that promises to be more enjoyable for longer games. While it doesn't have the graphic detail of F/A-18 Hornet the "Wart Hog" is a more maneuverable aircraft. The missions in the game are more detailed. Runs well on lower processor-based Macs.

ParSoft, 101 West Runner Road, Suite 430, Richardson, TX, 75082
 (214) 479-1340, Fax (214) 479-0853



F/A-18 Hornet 2.0 \$49

Incredible flight simulator. Modern-day jet fighter with advanced missiles, radar, and electro-optical weapons. There are even joystick/throttle sets available for more realistic flight control, and it's fully networkable for group combat missions. Version 2.0 is Power Mac native with more detail and silky-smooth animation.

Graphic Simulations, 1200 East Collins #214, Richardson, TX, 75081
 (214) 699-7400, Fax (214) 699-0972



HellCats \$39
HellCats: Missions at Leyte Gulf \$21

Hellcats' six different missions and impressive graphics will keep you entertained. Some think the sequel is even better. These WWII simulators are beautifully smooth on any size screen, and easy to control.

Graphic Simulations, 1200 East Collins #214, Richardson, TX, 75081
 (214) 699-7400, Fax (214) 699-0972

MULTIMEDIA ENTERTAINMENT



Myst (CD)

\$45

First there was SpaceShip Warlock—fun to look at, but not much of a game. Then came the JourneyMan Project—better to look at, and good because you did a lot of looking and not much doing. Now there's Myst. Glorious to behold, fast enough to actually play, and, to top it all off, a great game. It's mysterious, intriguing, puzzling, haunting, and creative. Highly recommended.

*Brøderbund Software, Inc., 500 Redwood Blvd., PO Box 6121, Novato, CA, 94948-6121
(415) 382-4400, (800) 521-6263, Fax (415) 382-4419*



**SimCity 2000 CD Collection
SimCity 2000 (Disk)**

**\$57
\$40**

Get the entire collection of scenarios and the urban renewal kit on a single CD-ROM. You can design your own buildings and print out your custom landscapes, or choose from among the over 100 new structures. It's still 3-D and in color, plus it's accelerated for the PowerMac.

*Maxis, 2 Theatre Square, Orinda, CA, 94563
(510) 254-9700, Fax (510) 253-3736*



SimTower (CD or Disk)

\$33

Build your own skyscraper and create your own vertical world complete with offices, restaurants, apartments, and angry tenants. There are even urban terrorists to make havoc of your annual budget.

*Maxis, 2 Theatre Square, Orinda, CA, 94563
(510) 254-9700, Fax (510) 253-3736*

MULTIMEDIA EXPLORATION



Voyager II v2.0

\$100

You can view the stars as the Egyptian pyramid builders saw them thousands of years ago or see the pattern the sun makes in the sky during its annual migration. Stand on a nearby star, watch the orbits of the planets, and see Halley's Comet pass by. The tools and precision in this program are good enough for professionals. A truly amazing product developed by zealots, with love. Entertaining enough to keep in your games folder, the new version has color, sky pictures, and a bigger astral database. The CD-ROM version adds the 19-million-star Hubble Guide Star Catalog and a collection of almost 800 astronomical pictures. Available on Diskette or CD-ROM.

*Carina Software, 830 Williams St., San Leandro, CA, 94577
(510) 352-7328*



Think for Yourself (CD)

\$149

A collection of statistics from the United Nations, World Health Organization, and other American governmental sources, with an easy-to-use Discovery data analysis program. The information includes data on AIDS, the environment, health, and American demographics. The Discovery application "understands" the information contained in the data sets, and lets even young kids analyze and solve problems.

*PEMD Education Group, 35000 Highway 128, Cloverdale, CA, 95425-0039
(707) 894-3668, Fax (707) 894-3668*



American Visions (CD-ROM)

\$60

Presents over 210 works of art in 24-bit color, representing 140 American artists. Videos, photographs, and narrative about the artists and their work, with narration by the collector.

*Eden Interactive, 1022 Natoma St. #2, SF, CA, 94103
(415) 241-1450, (800) 743-3360, Fax (415) 241-1459*



Seven Days in August

\$14

An interactive documentary that recalls the week of August 13th to 19th, 1961 and the construction of the Berlin Wall. Features slide shows, four hours of audio, two hours of narrated photomontage, and two interactive games—all recapturing what life was like for both Americans and Berliners during that historic week.

*Time Warner Interactive, 2210 W. Olive Ave., Burbank, CA, 91506
(818) 955-9999, (800) 593-6334, Fax (818) 955-6499*



From Alice To Ocean: Alone Across The Outback

\$45

A photo journalistic essay of Robyn Davidson's seven-month-long trek across the Australian outback. Appeals to both adults and children by offering insights into Australian geography and culture, along with an inspirational story about a journey against all odds. It's an interactive multimedia CD-ROM with a coffee table-style book of photographs by internationally recognized photographer Rick Smolan.

*Claris Corp., 5201 Patrick Henry Dr., PO Box 58168, Santa Clara, CA, 95052-8168
(408) 727-8227 Customer Relations, (800) 544-8554 U.S. Upgrades, (800) 334-3535 U.S. Dealers, Fax (408) 987-7440*



Oceans Below

\$28

Oceans Below is a CD-ROM edutainment title that explores the world of scuba diving. Users can select from dive sites around the world and experience the exotic undersea world of manta rays, angel fish, coral walls, and shipwrecks. Includes more than 200 video clips—more than one hour's worth—and features marine life, plant life, and undersea sites.

*Software Toolworks, 60 Leveroni Ct., Novato, CA, 94949
(415) 883-3000, (800) 234-3088, Fax (415) 883-3303*



Passage to Vietnam (Book and CD-ROM)

\$70

Rick Smolan, the man who brought us From Alice to Ocean a few years ago, was part of the first officially sanctioned tour of Vietnam in 20 years. This book and CD-ROM combo shows photos by many of the world's top photojournalists, along with notes about daily life in Vietnam and lessons on photography. Combined with an excellent multimedia control, it makes the most out of QuickTime on a CD-ROM. This is where the future of these discs is headed, folks. Watch out, though, since many of the books are being sold without the disc. The disk can be purchased separately for around \$40.

*Against All Odds, PO Box 1189, Sausalito, CA, 94966
(415) 331-6300*



Macbeth

\$35

A beautiful version of Shakespeare's Macbeth, with annotated text; QuickTime clips of the Roman Polanski, Orson Welles, and Akira Kurosawa film version; maps of Shakespeare's England (and Scotland); and more. Makes a wonderful gift, although by the time you get home, you'll probably decide to give it to yourself!

*The Voyager Company, 578 Broadway #406, New York, NY, 10012
(212) 431-5199, (800) 446-2001, Fax (212) 431-5799*



Cinematic '95

\$55

Despite Microsoft's almost-like-a-Mac interface, Cinematic is the CD-ROM movie guide. It contains over 24,000 listings, including movies, stills, sounds, clips, cast lists, filmographies, biographies, Leonard Matlin reviews, Pauline Kael reviews, Roger Ebert reviews, Baseline (a film encyclopedia) reviews, and more—and it's pretty zippy. It's the only movie guide out on the market. Very very cool.

*Microsoft Corp., One Microsoft Way, Redmond, WA, 98052-6399
(206) 882-8080, Fax (206) 936-7329*

LEARNING AND EXPLORATION FOR KIDS



Amazon Trail (CD or Disk)
African Trail (CD)

\$50 (CD); \$40 (Disk)
\$50

Based on the successful simulation The Oregon Trail, adventurers travel through a time warp to explore the Amazon River and learn about the rain forest while searching for an elusive medicinal plant. An Inca king has sent a jaguar in a dream to bring him the cure for his people; to find the plant and accomplish the mission, adventurers must talk with travelers from different eras. In African Trail, you relive a record-setting bicycle expedition across the continent. The other "Trail" titles are worth considering as well, including Oregon Trail II, the Yukon Trail, and MayaQuest: The Mystery Trail. Most are available on CD-ROM or Diskette and are for ages 10 and up.

MECC, 6160 Summit Dr. N, Minneapolis, MN, 55430
(612) 569-1500, (800) 685-6322, Fax (612) 569-1551



KidsTime Deluxe

\$50

Five different games for young children ages three to eight. They'll learn about music, typing, drawing, and more.

Great Wave Software, 5353 Scotts Valley Dr., Scotts Valley, CA, 95066
(408) 438-1990, Fax (408) 438-7171



The Cruncher

\$60

The Cruncher is a talking, animated spreadsheet targeted at ages 10 and up. The Cruncher teaches spreadsheet skills using real-world examples such as party planning, family budgeting, and calendar making. Features include a "talking feature" that reads aloud; animated clip art with sound effects for use with spreadsheets; charts and graphs; and a "notebook" associated with each spreadsheet to keep detailed information relevant to that spreadsheet.

Davidson & Associates, Inc., 19840 Pioneer Ave., Torrance, CA
(310) 793-0600, (800) 545-7677, Fax (310) 793-0601



Just Grandma and Me
Harry & the Haunted House

\$40
\$40

This CD-ROM, the first in the Living Books series, has set the new standard for quality and creativity in children's educational software. Designed for children 8 and under, the animation and sound combined with a clean and simple interface make this product accessible to the youngest Mac users. In the story, Little Critter and his Grandma take the bus to the beach, where they have a series of adventures—Little Critter takes a ride on a wind-blown umbrella, fends off a nasty crab, is kissed by a fish—all in a relatively complex plot that younger children need to be challenged with. Check out Harry & the Haunted House too, as well as other Living Books titles.

Brøderbund Software, Inc., 500 Redwood Blvd., PO Box 6121, Novato, CA, 94948-6121
(415) 382-4400, (800) 521-6263, Fax (415) 382-4419



Carmen Sandiego Deluxe
Carmen Sandiego Junior Detective (CD)

\$47
\$40

It's a really great game for kids (and adults). Historically and geographically educational, while staying fun. With graphics, color, and sound effects. The Junior Detective game is designed for younger kids (ages 5 to 8). Other recommended titles include Where in the World is Carmen Sandiego, Where in the USA is Carmen Sandiego and Where in Space is Carmen Sandiego.

Brøderbund Software, Inc., 500 Redwood Blvd., PO Box 6121, Novato, CA, 94948-6121
(415) 382-4400, (800) 521-6263, Fax (415) 382-4419



Creative Writer & Fine Artist Bundle

\$50

An exhausting amount of possibilities. Puts you in “Imaginopolis,” where you create banners, newsletters, greeting cards, and stories. Combines fonts, pictures, story starters, and a lot of the traditional writing program approaches. For ages 8 and up.

*Microsoft Corp., One Microsoft Way, Redmond, WA, 98052-6399
(206) 882-8080, Fax (206) 936-7329*



Headline Harry and the Great Paper Race

\$40

Search for clues needed to write headlines for major events in U.S. history.

*Davidson & Associates, 19840 Pioneer Ave., Torrance, CA
(310) 793-0600, (800) 545-7677, Fax (310) 793-0601*



Kid Pix Studio

\$45

One of the few programs likely to attract youngsters away from video games. The tools have sound effects; the alphabet is in both English and Spanish; and there’s even a “small kids” mode. This is a must-have if your kids are under 10, and you have a color Mac. Kid Pix Studio gives you lots more rubber stamps, hidden pictures, sounds, Color Me pictures, and Wacky TV (QuickTime). Oh, and it does kid-style presentations with a storyboard that makes truck sounds when you rearrange tiles! Great for kids of all ages.

*Brøderbund Software, Inc., 500 Redwood Blvd., PO Box 6121, Novato, CA, 94948-6121
(415) 382-4400, (800) 521-6263, Fax (415) 382-4419*



My Own Stories

\$50

Provides the tools kids need to write stories about what matters most to them—their experiences, family, friends, and themselves. Kids can write about their favorite memory, day, sport, and more. Gives kids everything they need to create—including the inspiration.

*MECC, 6160 Summit Dr. N, Minneapolis, MN, 55430
(612) 569-1500, (800) 685-6322, Fax (612) 569-1551*



Peter and the Wolf

\$25

Serge Prokofiev’s story and music, the narration of Jack Lemmon and many captivating, original illustrations are combined to offer children a truly unforgettable storybook experience. Featuring original music performed by the Prague Festival Orchestra, Peter and the Wolf is a multimedia storybook children will want to listen to, read, and enjoy over and over again.

*Ebook, Inc., 32970 Alvarado-Niles Rd. #704, Union City, CA, 94587
(510) 429-1331, Fax (510) 429-1394*



The Playroom (CD-ROM)

\$40 (CD); \$35 (Disk)

Designed for 3- to 6-year olds, The Playroom teaches counting, letter recognition, telling time, spelling, reading and math readiness, creativity, and more. Point and click on just about anything in The Playroom, and something fun will happen.

*Brøderbund Software, Inc., 500 Redwood Blvd., PO Box 6121, Novato, CA, 94948-6121
(415) 382-4400, (800) 521-6263, Fax (415) 382-4419*



Putt Putt Joins the Parade

\$40

Putt Putt Saves the Zoo

\$40

Preschoolers enjoy being a part of Putt Putt’s adventures, whether getting into a parade or helping save the zoo animals.

Humongous Entertainment, 16932 Woodinville-Redmond Rd. #104, Woodinville, WA, 98072



Scooter's Magic Castle

\$50

Kids explore a castle full of games and activities. For ages 5 years and up. Increasing levels of difficulty, amusing animations, and color. About exploring, not winning.

*Electronic Arts, 1450 Fashion Island Blvd., San Mateo, CA, 94404
(415) 571-7171, (800) 245-4525*



Swamp Gas Series

\$50

Good graphics and sounds distinguish these floppy-based US geography games. Variable skill levels. For eight-year olds and up. Silly arcade games and slapstick maneuvers are the payoff.

*Inline Software, 800 W. Cummings Park, Woburn, MA, 01801
(617) 935-1515, (800) 453-7671, Fax (617) 938-8353*



Thinkin' Things 2

\$40

Thinkin' Things 3

\$40

A witty and entertaining collection of sophisticated and brain-building activities to improve observation, analysis, spatial awareness and reasoning for children ages 6 to 13.

*Edmark Corp., 6727 185th Ave. NE, PO Box 3218, Redmond, WA, 98073
(206) 556-8484, Fax (206) 556-8998*

MISCELLANEOUS

BOOKS

USING THE MAC



Dead Mac Scrolls

\$12

Superb guide to troubleshooting and repairing older Macs from technical guru, Larry Pina. Problems are clearly set identified, and if you have a little bit of courage and aren't afraid of a soldering iron, you can save a lot of money and keep your Mac running like a dream.

*Peachpit Press, 2414 Sixth St., Berkeley, CA, 94710
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*MacUser, PO Box 56986, Boulder, CO, 80322-6986
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*BYTE Subscription Dept., PO Box 555, Hightstown, NJ, 08520-0555
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*MacWEEK, Customer Service Dept., c/o JCI, PO Box 1766, Riverton, NJ, 08077-7366
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*BAM Publications, Inc., 3470 Buskirk Ave., Pleasant Hill, CA, 94523
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*Seybold Publications, PO Box 644, Media, PA, 19063-0644
(800) 325-3830, Fax (215) 565-1858*



TidBITS

Free

This online mailing from Adam Engst is one of the best sources for up-to-the-minute rumors, news, and tidbits. He gets them out on the Internet fairly regularly and is almost always on top of all the latest gossip; he often has the nitty-gritty details that companies don't really want us to know. There are product reviews, as well.

*Adam Engst, 1106 North 31st Street, Renton, WA, 98056
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REFERENCE



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*Redgate Communications Corp., 660 Beachland Blvd., Vero Beach, FL, 32963
(407) 231-6904, (800) 333-8760*

PURCHASING MAC PRODUCTS



Aisle 17/Apple Disability Solutions

Apple has included a few pages of software and hardware aimed at people with disabilities in its Apple Catalog for years. Now it has created a separate catalog for the same market called Aisle 17. Prices seem a bit high, but all the best stuff seems to be here.

*Aisle 17/Apple Disability Solutions, PO Box 898, Lakewood, NJ, 08701-9930
(800) 600-7808*



ComputerWare

One of the first Mac-only store chains in the country, ComputerWare is still providing reasonable deals on hardware and software, and some good information and tips, if you corral one of the better salespeople. They also offer GE Consumer Service as a lower-cost replacement for AppleCare, Apple's very expensive program to extend Apple warranties (BMUG doesn't recommend AppleCare, due to the high cost). Definitely a store to visit when looking for Mac accessories.

ComputerWare, (check your local phone book)

COFFEE



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Join Team Caffeine! This Newsletter certainly wouldn't be in your hands right now if Firenze didn't make such a damn good cup of coffee—their mochas are to die for. We just wish they would stay open twenty-four hours a day, so we wouldn't ever have to go to sleep.

Café Firenze, Shattuck & Center, Berkeley, CA, 94704

The BMUG Glossary

A Guide to Computer Terms

This glossary has an amazing history—from its humble 6-page debut in the Spring 1987 Newsletter to its present incarnation, there have been many contributions and editions along the way. Originally created by Stephen Howard and Raines Cohen, it grew significantly when volunteers compiled various existing sources into a larger version edited for clarity and conciseness.

The present version was compiled by John Chapot, incorporating information and inspiration from various sources—most notably, The Macintosh Dictionary by Andy Baird, and Robin Williams' Jargon, an Informal Dictionary of Computer Terms. The work was facilitated in part by using John's word-wrangling product "Boswell's Companion", a nifty HyperCard stack available (free) from many online services and the BMUG disk library.

The final filter and full-circle edit was accomplished over a holiday weekend by one of this glossary's originators, Raines Cohen, currently Online Communications Manager for User Group Connection..

1k-XModem communications: A protocol that terminal programs use to send files over connections in 1-Kbyte chunks (as opposed to Xmodem's 256-byte-sized chunks). If used by both terminal programs, it can increase file transfer speed.

1k-XModem/G communications: This version of 1k-XModem assumes that hardware error-correction (such as MNP level 5) in use by the modems at both ends provides a reliable connection, so it does away with the block-by-block checking. The result is a very fast single-file transfer protocol for use if you have a reliable connection and YModem/G is not readily available.

10BaseT networking: A type of wiring often used on Ethernet networks. Why the weird name? Well, it stands for 10 megabytes per second (the data transmission rate) base-band (just data, no carrier) and twisted-pair wire (as opposed to coaxial cable). It's a medium-performance relatively inexpensive wiring system that's rapidly becoming the most popular way to do Ethernet.

2.5 inch drive storage: A hard drive with a platter 2.5 inches across, small enough to fit most Macintosh PowerBooks.

3.5 inch drive storage: A hard drive with a disk platter 3.5 inches across. The standard diameter for half-height and third-height drives. Capacities up to 4 gigabytes are available.

32-bit addressing system software: (see also 32-bit clean) Before System 7, Macs used 24 bits to enumerate RAM addresses (locations), which yielded an absolute upper limit of 8 megabytes. System 7 and above can use 32

bits for each address, expanding the potential total memory limit to over 240 megabytes. Macs that were built with System 7 in mind have software in ROM that can use 32-bit addressing (some don't even let you turn it off on the Memory control panel), but the Mac II, Mac Ix, Mac Ixcx and SE/30 need special software - either Mode32 by Connectix or 32-bit Enabler from Apple. The plain Mac II also needs a PMMU chip installed. Older versions of some software are called "not 32-bit clean" because they crash when 32-bit addressing is turned on.

32-bit color display: Color system in which every pixel has a 32-bit number attached to it describing exactly what color it should display. Most Macs need special software from Apple and special color video cards and monitors from other companies to display that much color. In those 32 bits, 24 are used for color information and 8 are an alpha channel for transparency or other information. 24 bits can describe just over 16.7 million different colors.

5.25 inch drive storage: A hard drive whose disk platter is 5.25 inches across. The standard diameter for full-height drives. These only fit comfortably in larger-chassis Macs.

680x0 hardware: The family of Motorola processor chips that ran all Macs until 1994. They use CISC (complex instruction set computing) architecture.

68000 - The original Mac chip, running at 8 MHz, it lives at the center of the Mac 128, 512, 512ke, Plus, SE, Portable, Classic, and PowerBook 100.

68020 - The chip that sits at the heart of the Mac II, LC, Classic II and Performa 200. It is five times faster than the 68000 in most operations.

68030 - The chip that runs the Mac Ix, SE/30, LC II, Iicx, Iici, Iifx, IIsi, PowerBook 140, 145, 160, 170, 180, PowerBook Duo 210, 230, Iivx, Iivi, and the Performa 400 and 600. It is five or six times faster than the 68000 in most operations, and has a PMMU built-in.

68040 - Combines the 68030 and 68882 into one chip with a 4k memory cache and is about five times faster than the 68030/68882. This chip operates the Quadra 700, 900 and 950 and the new PowerBook 500 series. Some use the 68LC040, which lacks the math functions but costs less and requires less power.

68881: The special floating-point mathematics chip designed by Motorola inside the Mac II along with the 68020. Together they are about 100 times faster than the 68000 in floating point mathematics.

68882: The special decimal mathematics chip designed by Motorola inside the Mac Ix, Iicx, Iici, SE/30, Iivx, and the Powerbook 170 and 180 along with the 68030. Together they are about 100 times faster than the 68000 in floating point mathematics.

8-bit color display: The most common setting for color Macs. Eight bits lets you display 256 colors onscreen at once.

A/UX system software: (Apple/UNIX) Apple's version of the UNIX operating system developed by AT&T and found on big computers and some personal computers. The Apple version is based on Xerox System V with Berkeley 4.2 extensions.

accelerator hardware: A card with a second, more powerful processor which you can insert into a Mac and make the computer operate faster. Some simply speed up the Mac's existing processor; others have their own CPU and even their own RAM and card slots.

access privilege system software: The ability to open, see, and make changes to files and folders on a file server. Different users can have different privileges for different folders.

acoustic coupler communications: A modem connector that physically links to a telephone handset, unlike the more common direct-connect modems that plug into the phone line. Useful if you're traveling or at a location (such as an unfamiliar country or office) with nonstandard phone service. While

early versions were less reliable and slower than today's modems, within the last few years a wide variety of acoustic couplers have become available.

active matrix display: A type of liquid crystal display (LCD) that has a transistor for each pixel - used in the Mac Portable and many high-end PowerBook models, including the 170, 180C, 270C, 280C, and 540 and 540C. These displays have a higher contrast and wider viewing angle than passive-matrix screens (even "superfast" or "dual-scan" models), but they're more expensive and more difficult to manufacture.

active window interface: The foremost window on the desktop; the window where the next action will take place. An active window's title bar is highlighted.

ADB hardware: (Apple Desktop Bus) A port used by most Macs to communicate with peripheral devices: mice, keyboards, and such.

AFP networking: (AppleTalk File Protocol) A protocol for sharing documents /applications on an AppleTalk network. Users can log into "AFP-compatible" file servers through the AppleShare icon in the Chooser.

Apple File Exchange system software: An application that can translate some document formats between a wide variety of applications and operating systems.

alert box interface: A message box that appears when the Mac needs to tell you something important. It usually brings bad news and a beep.

algorithm programming: Any specific procedure for solving a problem in a finite number of steps. Named after al-Khuwarizmi, a ninth-century Arab mathematician. Programmers use this term to refer to pieces of code.

alias system software: A stand-in for an item on the desktop (their names appear in italics). Opening an alias actually opens the item it stands for. You can put aliases of applications, documents, whatever you like, into any folder for quick access. Put aliases into the Apple Menu Items folder to make them appear when you pull down the Apple menu. A feature of System 7.

aliasing interface: 1. The stairstepping appearance of diagonal lines and curves on a low resolution display. 2. A metallic distortion heard when digitized sounds are sampled at too low a rate, forcing the computer to fill in the gaps. In both cases, anti-aliasing resolves the problem by smoothing things out, sacrificing some detail in order to look or sound better.

alpha channel display: When you create 24-bit images in a 32-bit graphics world, you have eight extra bits to play with. Software developers use these bits in a variety of ways; to carry transparency information, to create masks, and the like.

analog interface: A flow of information where things change smoothly and have an infinite number of values and imitate (are analogous to) the real-life source. For example, on an analog phonograph record, the wiggles in the groove get bigger as the music gets louder. Contrasted (and often converted to) digital, which divides up differences into pieces for storage on a computer.

ANSI industry: (American National Standards Institute) A group that publishes many computing standards, which are usually upheld by the industry. The US representative in the ISO (International Standards Organization). Often used as shorthand for a particular standard, as in "It's ANSI-compliant!"

anti-aliasing interface: Software techniques used to smooth out jagged-appearing edges of curved lines or sounds, such as the blur tool in Photoshop. See aliasing.

APDA programming: (formerly Apple Programmer's and Developer's Association) The organization within Apple that provides low-cost technical information and materials to programmers.

Apple menu interface: The menu on the left end of the menu bar designated by an Apple symbol. It gives access to miniature applications called Desk Accessories, such as the Calculator and Scrapbook. Under System 7, you can put aliases of applications and documents into the Apple Menu Items folder (in the System folder), and they will appear under the Apple Menu. You can get really fancy by putting one or more spaces in front of your aliases' names to move them to the top of the list, and by getting one of the third-party utilities that turns the Apple menu into a hierarchical menu.

Apple events programming: A set of standards used for interapplication communication under System 7 and higher. The Apple events registry defines suites: Required (Open, Save, Print, Quit), Core (set and get data, deal with individual pieces of information), and category-specific events (like Word Services). OpenDoc and Open Scripting Architecture languages such as AppleScript rely on Apple events.

AppleShare networking: Apple's file server software that allows Macs and other computers which are connected together (forming a network) to share applications, files and printers. An AFP-compliant server is AppleShare-compatible.

AppleTalk networking: Apple's set of rules governing how Macs communicate between themselves and other computers and peripherals. Often inaccurately used in reference to the cables which Apple sells to connect Macs together; these are actually called LocalTalk.

AppleTalk connector networking: The physical box you need to connect a Mac to an AppleTalk network. It has a serial cable on one end and a connection for a network cable on the other.

AppleTalk Phase 2 networking: The name for a version of Apple's network protocol that allows for 16.7 million network addresses and has improved data handling, all of which is invisible to users but good for network software and hardware. Comes with System 7 and higher; required for many complex networks.

application interface: A collection of tools that programmed to perform a specific set of tasks; also known as a program. Contrasts with a document, a piece of software that is acted upon by an application. OpenDoc part editors are mini-applications.

application font system software: The font an application will use unless you specify another. Usually this is Geneva.

ARA networking: (Apple Remote Access) Apple software that allows a Mac to connect to an AppleTalk network over a phone line.

ARPA industry: (Advanced Research Project Agency) An arm of the US Department of Defense that funds technology research. Funded the ARPANET, which became part of the Internet.

ARQ communications: (Automatic Repeat Request) A general term for error control protocols featuring hardware detection and retransmission of defective data. This term is used primarily by US Robotics.

arrow interface: The default shape of the cursor used for selecting objects and commands..

ASCII industry: (American Standard Code for Information Interchange) This particular mapping of the letters of the Roman alphabet and Arabic number system to number codes is understood by nearly all computers (except IBM mainframes, which use EBCDIC). Documents containing only text and numbers are sometimes called ASCII files (or text files). ASCII is the US adaptation of an international standard. A 7-bit binary code is used. ASCII is universally supported in computer data transfer.

assembly language programming: Specific and detailed instructions for manipulating pieces of information in a computer. These instructions are "low level", that is, very close to machine language. Assembly language programming is difficult but produces very speedy and compact programs (or portions of programs). Unlike compiled languages, assembly language programs are written for a specific processor, which makes moving them to another platform with a different processor very difficult.

asynchronous communications: Literally, an event not happening at the same time as another event. Usually refers to computers exchanging information over phone lines, when they do not know precisely how long it will take to send each piece of information. Data is preceded by a start bit and followed by a stop bit since the time between transmitted characters varies. Lately heard often as part of the name of a high-speed wide-area communications protocol: Asynchronous Transfer Mode (ATM).

ATM: 1. Adobe Type Manager, A program from Adobe Systems, Inc., that smooths out the edges of PostScript fonts you see on your screen. Since QuickDraw printers (ImageWriters, HP DeskWriters, Apple StyleWriters, fax modems, etc.) print what they see on the screen, if PostScript type looks good on the screen it will look good in print. Under System 6, you needed ATM to interpret PostScript fonts for the screen. TrueType GX incorporated a version of this function. 2. Asynchronous Transfer Mode (see above). 3. Automatic Teller Machine (cash-dispensing box hooked to a bank).

attack dialing communications: Dialing a number or set of numbers repeatedly until you get connected. Used by impatient telecommunicators trying to call busy bulletin board services (recommended when calling Planet BMUG, for example). The Federal Communications Commission (FCC) and other nations have set limits on how many times you can repeat without a break. Always make sure

you have the correct phone number before attack dialing!

authoring system programming: A programming language for the rest of us. Authoring systems, such as HyperCard, MacroMedia Director and AuthorWare are collections of tools that make it easier for casual programmers to create applications. Often used in multimedia to create a user interface.

auto answer communications: The ability of a modem to answer a phone call. You tell the modem to do this by typing "ATA" and hitting the Return key (to answer right away, "ATS0=1" to answer the next call on the first ring, with Hayes-compatible modems) in most terminal programs. The modem detects a ring and answers the phone without assistance from a program. This is a standard feature of any decent direct-connect modem.

autodial communications: The ability of a modem to dial any number you tell it without using a phone device to dial. AKA direct-dial; not available on acoustic couplers.

autograph programming: The term for version information from an application that appears in the Get Info... box in the Finder. See signature.

background system software: When an application runs in the background it is operating behind the scenes while you use another application. Most often you must be running MultiFinder or System 7 or higher to perform tasks in the background.

backup storage: 1. (verb) Actually spelled "back up". The very necessary process of copying important software and documents onto some other medium (floppy disks, magnetic tape, et al.) to guard against their loss should anything happen to the original. 2. (noun) The media containing copies of important software and documents.

Balloon Help system software: Those cute little comic strip balloons that pop up wherever your cursor is. They contain helpful, if somewhat limited, information about whichever item on the screen your cursor is pointing at. You turn balloon help on and off by choosing "Show Balloons" or "Hide Balloons" from the Help Menu, which is shown by a balloon containing a question mark. A part of System 7; System 7.5 supplements it with Apple Guide, which provides more in-depth "how do I do this?" kind of help..

bandwidth communications: The amount of information that can be handled by a device or system. For example, a telephone can carry audio signals (analog) in a band between 20 Hertz (cycles per second) and 4,000 Hz - just enough for intelligible speech, but not wide enough for music. This is a low-bandwidth system. On the other hand, a cable-TV system may use signals up to 400,000,000 Hz - it takes that much bandwidth to carry dozens of TV channels. In a digital system, such as the bus in your computer, bandwidth is measured in bps (bits per second). In general, the broader the bandwidth of a system, the more information it can carry, and the more expensive it is.

baseline interface: The imaginary line upon which characters in a line of text rest.

baud communications: When transmitting data, the number of times the medium's "state" changes per second. A 2400 baud modem

changes the signal it sends on the phone line 2400 times per second. Since each change in state can correspond to multiple bits of data, the actual bit rate of data transfer may exceed the baud rate. Modems typically communicate at 1200, 2400, 9600 or 14,400 baud. Higher is better, but often a doubling of baud will not result in a doubling of overall performance because of limiting factors.

BBS communications: (Bulletin Board System) A service usually set up by hobbyists, organizations or clubs to facilitate the exchange of information about some particular topic. You access a BBS through a modem which calls up the number for the BBS. On your screen you see the computer equivalent of a bulletin board. You can post messages, ask and answer questions, and make new friends. Larger, usually commercial, BBSes are called information services or online services.

beach ball interface: The cursor as a ball divided into dark and light quarters, usually spinning when an application is busy completing a task of unknown duration.

Bell 212A communications: The set of rules for transferring information with modems at a rate of 1200 baud followed by most modems in the US.

beta industry: The testing stage of a piece of software or hardware in which problems or bugs are discovered and (we hope) corrected. Usually, beta versions of a product are given to people called beta-testers who report problems to the designers. After the internal alpha-test, before a paying-customer's gamma-test.

Bézier curve graphics: (pronounced "BEZ ee yay") A curve described by mathematical equations. The computer presents these curves as being composed of anchor points (where the curve starts, stops or changes direction) and control points, which you use to alter the deflection of the curve. PostScript objects and some scalable fonts are based upon Bézier curves.

binary system programming: A number system composed entirely of zeroes and ones. This is the base-2 system, where the equation $10 + 10 = 100$ is the equivalent of our (base-10) $2 + 2 = 4$.

BinHex communications: A standard way of converting the information in Macintosh files into a form that can be stored on other computers, created by Yves Lempereur of MainStay. There have been several versions of BinHex, but the only one that most Mac users ever hear about is BinHex 5.0, which converts files into eight-bit format for storing on personal computers. BinHex 5.0 conversions happen automatically when you transmit a file using MacBinary. There is also a BinHex 4.0 in use for converting Mac files in a seven-bit format for storing on older UNIX computers and mainframes. On the computer storing the BinHex-ed files, they appear as documents, no matter what they were on the Mac.

bit programming: Short for "binary digit". A very small piece of information equal to a value of 0 or 1, off or on. Lots and lots of these together instruct your computer on how to work and compose all your data. 8 bits equals a byte.

bit depth display: A characteristic/setting of a display card or Mac that determines how many

colors you can show at once on a screen. 8-bit color allows 256 colors at once.

bitmap interface: An image or font built out of pixels on screen.

bitmapped font interface: Fonts on the Mac come in two varieties: bitmapped and outline fonts (TrueType and PostScript). Bitmapped fonts are stored in suitcase files and copied into the System file to use them. They are built out of the pixels on the screen. When you print a bitmapped font on any printer, regardless of resolution, the letters are still jagged. They come in particular sizes, unlike outline fonts, which can adjust to any size without losing quality.

bitmapped graphics interface: A type of graphic composed of lots of pixels. Bitmapped graphics can be edited dot by dot, at low resolution (screen resolution, 72 dots per inch or dpi) in MacPaint or at incredibly high resolution in Photoshop. Each dot can contain a lot of information (up to 32 bits worth) - color, grayness, transparency, etc. - but it's still a dot. Contrasted to object graphics, made up of lines and components. Because video screens are made of dots called pixels, the Mac's QuickDraw software deals exclusively in bitmaps and rasterizes (converts) object graphics into bitmaps for display. A bitmapped image has a fixed resolution which is determined when it is created, so it can only print at whichever resolution is lower, its own or the printer's.

Boolean algebra programming: A branch of mathematics that concerns itself with binary logic where every answer is either true or false. Boolean operators include "and", "or", "not" and combinations such as "and not". Computers love this stuff. You probably have encountered it when searching a database. Named for its inventor, George Boole, a nineteenth-century English mathematician.

boot interface: To start up your computer; that is, turn on the power and, if you don't have a hard drive, insert a floppy with a System Folder on it. This odd-sounding bit of jargon dates back to the very early days of computing. Early computers had no ROM (permanent memory). When you first turned on the power, the machine was truly a blank slate. To start up one of those old machines, you had to first enter a short "loader" program (in binary) by flipping switches; this program was just sufficient to let the machine use its paper tape or punched card reader to load in a longer, full-fledged loader program, which in turn could be used to load the program you wanted to run! Loading a loader in order to load the loader that would load your program reminded operators of the old phrase "Pulling yourself up by your own bootstraps"; hence the short loader came to be known as the bootstrap loader, and the whole process "booting up". - Andy Baird.

bps communications: (bits per second) The speed at which bits are transmitted over a communications medium. This speed may exceed the baud rate.

bridge networking: A combination of hardware and software connecting different types of network cabling. If the bridge connects network cabling to phone lines, it is a half-bridge, although most people don't make that distinction.

broadcast networking: When a device on an AppleTalk network sends out a piece of information so that all other devices receive it.

buffer programming: A generic term for an area of memory used to store information while it is being collected and before it gets passed on to its final destination.

bug programming: Unexpected behavior usually caused by a mistake in programming but sometimes by a hardware malfunction. According to the late computer pioneer Grace Murray Hopper, the first computer bug was just that - a moth that became stuck in one of the relays of the Mark II, a very early (1940's vintage) electro-mechanical computer at Harvard, causing it to malfunction.

bundle bit system software: A piece of information attached to an application that tells the Mac how the application can create documents. If a document loses track of its creator's bundle bit, it will not open properly. File editors will let you set or unset the bundle bit manually, and there is a nifty utility called BundAid that will set all bundle bits correctly.

bus hardware: Circuitry that transfers information between the parts of a computer. Bus also refers to connections between computers on a network or allowing you to plug in other peripherals, such as a SCSI bus, Nubus, PCI bus or IDE bus.

bus error system software: One of the most commonly occurring error codes to appear on your Mac, designated "Error Code ID 1" or "Type 1 error". You can often eliminate these errors by allocating more memory to the application in question. Under System 7, this error can indicate that the application is not 32-bit clean, and you will need to either get an upgrade or turn off 32-bit addressing on the Memory control panel.

button interface: An area of the screen which sends a command to an application when you click on it. Also called push button. A button with a double-thick border is the default button and hitting the return or enter key on the keyboard activates it.

byte programming: Eight bits forming a meaningful unit. It may have a readable ASCII value or some other coded meaning to the computer.

CAD industry: (Computer Aided Design) Using computers to perform many of the engineering and architectural tasks traditionally done by draftsmen. Oddly, this term does not apply to graphic arts.

CAE industry: (Computer Aided Engineering) Vertical-market software to solve engineering questions, such as stress on beams and seismic strengthening.

CAM industry: (Computer Aided Manufacturing) Using computers to control machinery such as lathes, assembly lines, motion-controlled cameras and robotic arms.

capture hardware: Obtaining video or sound from the outside world and digitizing it for further processing on the Mac. Performed by hardware built in to the AV Macs or available on third-party cards. Frame Capture is digitizing a still frame from a video source. By the way, uncompressed video capture

uses up about 1 megabyte of hard drive space per second.

card hardware: A fiberglass board composed of circuitry and chips which do something specific when placed inside a computer. You can get video cards, accelerator cards, clock cards, printer cards or whole computers on a card. Cards plug into slots inside most Macs. There are PDS slots, PCI and NuBus slots.

caret interface: 1. Generic name for any symbol indicating the place in a block of text where new text will be inserted. Called the "insertion point" on the Mac II. The little wedge symbol, ^, by typing Shift-6, used by many programs during find-and-replace operations. For example, in WriteNow you specify a tab character by entering ^T in the Find window. In many programming languages the caret is used to indicate exponents of numbers, for example, 2^8 means 2 raised to the eighth power, which equals 256.

carpal tunnel syndrome interface: An occupational disease caused by doing the same movements with your hands over and over. The symptoms include shooting pains, tingling, or numbness in the wrist, hand or finger joints. Prevention is the best way to deal with this: keep your wrists straight while you type and/or use wrist rests, lower the keyboard, vary your tasks, take breaks, sit up straight. CTS can be permanently disabling, so if you suspect anything, see your doctor now. In extreme cases, surgery may be necessary, in lesser ones, the lifelong wearing of a wrist brace.

carrier communications: Some path along which computer information can travel. In telecommunications, carrier refers to a continuous frequency capable of being either modulated or impressed with another information-carrying signal. Carrier signals are generated and maintained by modems via the transmission lines of the phone companies.

cartridge hard drive storage: A hard drive with a removable platter. Among the advantages of this system are lower cost for increased storage, the ability to switch to a different operating system painlessly, portability and secure backup. Disadvantages are slightly decreased reliability and the initial high cost of the mechanism.

CASE programming: (Computer Aided Software Engineering) Using computers themselves to help manage the complex task of writing software, especially large multi-part programs.

case interface: Whether a letter is capitalized (upper case) or not (lower case). Many word processors have commands that let you change the case of a word or group of words. Some searching and sorting functions may be made "case sensitive", that is, capital letters sort before small letters and a small letter does not equal its capitalized self. Most search functions are case-insensitive unless told to be otherwise.

CCITT industry: (International Consultative Committee on Telegraphy and Telephony — French) An international standards organization for telecommunications sponsored by the United Nations.

CD-I multimedia: (Compact Disc Interactive) Standards addressing the addition of high-quality sound, computer pictures, and some video to a CD-ROM in the hopes of making

the total package more fun or informative to use. A compact disc standard waiting for a cool product to justify its existence.

CD-ROM multimedia: (Compact Disc - Read Only Memory) Optical media which can store between 500 and 750 megabytes of computer data, or about 70 minutes of Eric Johnson (audio). The information on the disk cannot be changed, although it can be copied and read. There are disks with the complete works of Shakespeare, dictionaries, BMUG's library, collections of photos, history, images of the works in the Louvre, etc.

cell interface: A single block in a spreadsheet capable of holding data or a formula. Each cell is identified by its row and column numbers. In many ways analogous to a field in a database.

CERN: CERN is one of the world's largest scientific laboratories and an outstanding example of international collaboration of its many member states including Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Italy, The Netherlands, Norway, Poland, Portugal, Slovak Republic, Spain, Sweden, Switzerland and the United Kingdom. (The acronym CERN comes from the earlier French title: "Conseil Européen pour la Recherche Nucleaire"; it is known also as the European Laboratory for Particle Physics.) What the the World Wide Web has come to be, is due in large part, to research and work that came out of CERN.

check box interface: A special button that adds or removes an option.

checksum programming: A simple kind of error-checking that adds up the bits in a piece of information, divides by some number, and checks the remainder.

chip hardware: That truly amazing and remarkably tiny piece of silicon that has an entire electronic circuit embedded in its surface.

Chooser networking: A desk accessory that allows you to designate a network device you want to communicate with. Mostly used to select a printer, the Chooser can also select file servers, networks, fax modems, other output devices, and the like.

cicero publishing: A French typesetting measurement, slightly larger than 1/6th inch.

CISC hardware: (Complex Instruction Set Computer) - Processor architecture that is capable of handling lengthy, complex instructions (code) which often require more than one clock cycle to complete. Program file length is kept to a minimum; the trade-off is that this type of processing runs slower than comparable RISC (reduced) processing. Motorola's 680x0 chips, and Intel's -86 chips are popular CISC devices. Until the introduction of the PowerPC, all desktop computers used CISC architecture.

click interface: The action of moving the mouse cursor (usually a little arrow on the screen) on top of something on the screen and pressing and releasing the mouse button. Clicking will do one of three things 1) it will select the item clicked on, if that item is selectable (like an icon on the desktop); 2) it will perform some action if the item clicked on was a button; 3) it will do nothing or deselect anything previously selected if the item clicked on was neither a button nor selectable. Some items that do nothing when clicked on will do something if you click and move or drag

the mouse without releasing the mouse button. On a Newton, tap.

client networking: One-half of a two-part software system. The other half is the server software. Your computer is the client and you log into the server and communicate with it. This relationship is used on BBS's such as Planet BMUG, and on the Internet.

Clipboard system software: The place in memory where the things you Cut or Copy are stored. The Clipboard usually can contain only one selection at a time. This information is erased whenever you turn the computer off. The kinds of information you can transfer between applications using the Clipboard includes plain text and pictures from the Mac screen. Inside an application, however, the Clipboard can hold almost anything type of information and can even hold multiple items.

close box interface: A small square in the upper left corner of a window which, when clicked, closes the window. Inside an application, closing the window removes one view of a document, and is not the same as Quitting, though some applications will inappropriately quit upon this action.

Close View system software: A Control Panel that comes with Apple System 7 intended for visually-impaired users. It magnifies the screen image. It can also reverse the screen to white characters on a black background. A commercial product called InLarge from Berkeley Systems does this and much more.

CLUT display: (Color Look-Up Table) A table containing all the colors that a specific image uses, mapping color codes to particular color values. CLUTs usually contain 256 colors (8 bits) but can hold many, many more if the video card can handle it. Often the CLUT (called a palette by some applications) can be customized for the needs of the particular image on display. In graphics programs, the currently active window uses its CLUT for the whole screen, which can make the images in other windows look temporarily discolored (with 8-bit or less color).

CMYK display: (Cyan, Magenta, Yellow, Black) A color system used in printing for creating almost any color overlaying certain amounts of these four colors.

code programming: The programming content of any application. The ROM chip in your Mac contains bite-sized segments of code which applications may call upon. A HyperCard script is code. Programming languages, such as C or Pascal, have to be boiled down by a compiler program into a binary code called machine language in order to be run on the computer. Others, such as HyperTalk or BASIC, are interpreted and the binary instructions are sent to the machine by the interpreter.

codec communications: (compressor/decompressor) Hardware or software that compresses and expands data.

ColorSync system software: Apple's color management system that provides device-independent color consistency.

Command key interface: A combination of keys pressed while holding down the Command key, such as Command-S to save a file. Command keys most often perform the same function as menu commands, such as Command-N for "New". Actually the term is

"Command-key equivalent", but most people say "Command key" for brevity.

command-line user interface: The way in which users controlled most computers until the Mac came along. A command-driven operating system, such as DOS or UNIX, is strictly text based. It prompts you for input with something like ? or C: or > and you type something like DIR, which means "give me the directory of things on this hard drive". Amazingly, this user-hostile interface is still the predominant one on the planet on millions of DOS machines. It is also the basic interface for telecommunications, where a terminal is the lowest common denominator. It's called "clooey" (CLUI) as opposed to "goeoy" which stands for graphical user interface (GUI).

compiler programming: A program for creating programs, which takes a series of commands (written in a computer language like C or Pascal) and converts it into the binary numbers (called object code) that a processor can understand. Why is a translation necessary? Well, if you had to write 1101 0011 0001 0011 1110 every time you wanted to add two numbers together, you'd be pretty unhappy. A compiler lets you write "add 1 to 2"; then it does the hard part.

compression communications: 1. Software that reduces the number of bytes in a file by means of clever algorithms which (among other things) detect patterns and substitute special symbols for oft-repeated groups of characters. At first they were used for packing info for transmission to others via phone lines or floppy disks. With faster processors, the new trend is to compress files each time they are saved to your hard drive and decompress them "on the fly" when they are called for. Examples of the former are Stuffit, CompactPro and DiskDoubler; examples of the latter are Stacker and AutoDoubler. 2. Image compression software that may employ shortcuts which result in a loss of some of the data but which enable immensely large files such as sound and video to be handled. 3. Data compression by modem hardware that allows more information transfer in a shorter time frame.

computer paper output: 11 by 17 inch paper that accountants use, often featuring alternating green and white stripes (to make it easier to follow lines across the page). Not to be confused with continuous-feed paper that has a removable edge with guide holes.

computer science programming: A collective term for the mathematical and theoretical underpinnings of computers and computing.

concatenate programming: To tie text strings together. If you concatenated "1600" with a space and then with "Pennsylvania Ave." the result would be "1600 Pennsylvania Ave.". Concatenation is used in macros, HyperTalk and some applications' search windows.

concurrent application networking: An application that is written so that it can run on a file server at the same time as AppleShare. Such applications usually provide some service to the network such as print spooling or electronic mail.

conference communications: An area of public messages on a BBS, usually with a particular topic and, often, a host or modera-

tor to guide the discussion. Sometimes called folder, SIG (special interest group) or Echo.

connector networking: The physical device that electronically joins two pieces of hardware and exchanges information.

Control key communications: A modifier key used in conjunction with a letter key to trigger a command on many online services and BBS's. Some terminal emulators let you substitute the command or option key on old Mac keyboards lacking one.

Control Panel system software: Utilities that control various aspects of the Macintosh. They range from simple controls, like the volume of the Mac speaker, to complex ones, like an entire macro program. You access these devices through the Control Panel (System 6) or Control Panels (System 7) on the Apple menu. Originally called cdev's (for their file type), Control Panels are similar to INITs (System 6) or Extensions (System 7) in that you just stick them into the System Folder (System 6) or Control Panels Folder (System 7) and restart the computer to use them.

coprocessor hardware: A separate microprocessor, sometimes on its own board, that works alongside your regular processor to do a particular task. There are numeric coprocessors such as the 6881 and 6882 which speed up calculations (especially when rendering three-dimensional images), video coprocessors which take over the screen display duties, and cards which let you run DOS programs inside Macs.

Copy interface: 1. To place what has been selected into the Clipboard. The selection can be text, pictures or almost anything. 2. To duplicate a file, esp. between volumes.

copy protection storage: Security added to software so users cannot simply or easily make copies. Designed to prevent illegal distribution of software, it also inhibits easy use of hard drives and thwarts backups.

CP/M system software: (Command Program for Microcomputers) An older operating system, commonly used on microcomputers in the 1970's. An ancestor of DOS. Written by Gary Kildall of Digital Research.

cps communications: (characters per second) An information transfer rate estimated from the bit rate and length of each character. If each character is 8 bits and includes a start and stop bit for asynchronous transmission each character needs 10 bits to be sent. At 2400 baud data is transferred at approximately 240 cps.

CPU hardware: (Central Processing Unit) The chip that does all the work. Also commonly refers to the computer component, such as the circuit board or box, in which it is housed: We have 23 monitors but just 22 CPU's here in the lab.

CRC communications: (Cyclic Redundancy Check) An error-checking technique consisting of a cyclic algorithm performed on each block of data at the sending and receiving end of the transmission. As each block is received, the calculated CRC value is checked against the CRC value sent along with the block. Many protocols will request a resend until the block is received correctly. Many terminal programs let you choose either CRC or checksum methods of error detection in file transfers.

creator system software: A four-letter code hidden in a document's file that indicates which application made it. You can read it with ResEdit. Also known as the signature. Common ones include WDBN for Microsoft Word; WILD for HyperCard; and SIT! for StuffIt.

cross-platform system software: Software written to be able to run on multiple platforms, for instance Macs and IBM-type computers, without changes.

CTB system software: (Communications Toolbox) A system extension that uses modules so programmers can easily add communications to their applications and so users can add file-transfer, connection and terminal-emulation protocols without upgrades. Built into System 7 and higher.

cursor interface: A part of the screen that moves when you move the mouse. The shape of the cursor varies depending on what application you are using or what the computer is doing. A wristwatch cursor or spinning beach ball means you must wait while the computer does its thing. In programs that allow text-editing, the flashing bar that indicates you place in the text is not called the cursor, it is the "insertion point" or "I-Beam cursor".

Cut interface: To remove a selection from its current location and place it into the Clipboard. The selection can be text, pictures or almost anything.

DA system software: (Desk Accessory) One of those nifty little programs that appears as a choice under the Apple menu (System 7 allows anything under the Apple menu).

daisy-chain networking: To connect together several devices in a line with a single cable path that runs through each device.

DAL system software: (Data Access Language) Extension used by applications to communicate with remote databases, simplifying the task of getting data from hosts.

DAT drive storage: (Digital Audio Tape) A cassette tape recording system originally developed for music that has been adapted for backup on computer systems. Somewhat faster than conventional tape drive units, but too slow to substitute for a hard drive.

data fork system software: The part of a document where user-generated data is stored (as opposed to the resource fork, where the application's own information is stored).

database applications: A document designed to store lots of information in predefined categories, and which allows this information to be arranged and manipulated easily. The term "database" can refer to the application which creates and manipulates these documents or to the document itself. A database contains records, and each record is made up of fields.

daughterboard hardware: A circuit board that attaches to the motherboard (aka logic board) and gets its power from same. Less sexist term: subassembly.

DB-25 communications: A large 25-pin connector for serial ports used by some printers and many other brands of computers.

DB-9 communications: Trapezoidal connector for printer and modem ports on ancient Macs pre-1986. Technically a DE-9.

debug programming: The process of fixing errors in programming, removing the bugs. Developers spend a large amount of time and

resources testing their products (some more than others!). Special programs called debuggers are employed to track down gross errors, and people called beta-testers put the software through its paces.

decimal tab interface: A tab character used to make columns of numbers (like dollars-and-cents values) line up vertically on their decimal points at the tab's location.

default interface: The parameters your program uses in the absence of instructions to do otherwise. For example, when you open a new document in your word processor, the typeface is usually Geneva 12 and the tab stops are whatever the program's designers decided. You may reset some or all of the defaults in good applications by choosing "Preferences" from one of the menus.

delete key interface: The key located in the upper right hand corner of the keyboard that erases what's selected. Older Mac keyboards (the Plus and earlier) have a Backspace key instead. Some terminal programs and services treat them differently.

delimiter interface: A character used to separate items of information. Tabs, commas, and returns are the most popular delimiters, but some applications allow you to specify whatever you want. Delimiters are most important when importing and exporting data from one application to another. For example, if you save an Excel spreadsheet as a text-only file and import it into a word processor, the data from each cell will have a tab character after it, and each row's data will be followed by a carriage return. Tab-and-return delimiters are also commonly used in database import/export. One thing to remember: a delimiter character should not appear elsewhere in the data.

DES communications: (Data Encryption Standard) A way of intentionally scrambling your data so that it can not be understood by snoops but can be unscrambled by anyone with the right password. DES was developed by the Federal government, and is in common use in the U.S. but cannot yet be legally exported to foreign countries.

desktop interface: 1. The area of your screen behind all your windows. 2. The adjective added to certain types of computing work (desktop publishing, etc.) which can be accomplished by a personal computer.

Desktop file system software: A file on every Mac disk which contains a catalog of the different items on (or once on) that disk and other important information for the Finder. Rebuilding this file (by holding down the Command and Option keys while starting up) purges it of all information not currently needed, liberating space on the disk, and may speed up operations minutely. It also erases all comments you've added to the Get Info... text boxes.

Desktop Manager system software: A technique used by AppleShare and System 7 and above that divides the Desktop file's information into two files, resulting in much faster access to that information.

dialog box interface: A message box that appears on your screen when the Mac needs you to give it further instructions or information. Dialog boxes usually have one or more buttons that allow you to respond to the message displayed.

DIF applications: (Data Interchange Format) An older file format (developed for use with VisiCalc) used to exchange spreadsheet-type data between applications. Its modern equivalent is SYLK.

digital industry: Information represented as discrete numeric values, such as 0 and 1. The opposite of analog. In digitization, which is what a scanner does, the flow of information is sampled at regular intervals and converted into numeric values.

dimmed interface: When a button, menu item, or icon is unavailable, it appears gray rather than black. On the desktop, a dimmed icon represents a disk, document, folder or application on a disk that has been ejected but not dismounted (by moving its icon into the trash can). You can select and open dimmed disk and folder icons, but you can't open the documents and applications in them.

DIN-8 communications: The small, round connector for printer and modem cables which fits into the small, round printer and modem ports on Macs made since the Plus. DIN stands for "Deutsche Industrie Norm".

dingbat output: A traditional printer's term for ornamental characters like stars, bullets, little boxes, hearts, diamonds, tiny flowers and snowflakes. The Zapf Dingbats font (designed by famous German typographer Hermann Zapf) is built into most PostScript LaserWriters.

DIP hardware: (Dual Inline Package) A kind of chip that has two rows of connectors. DIP SIMMs are RAM SIMMs using DIP chips, which are taller than normal SIMMs and may not fit under larger hard drives.

directory interface: 1. The list of the contents of a folder or disk, ordered by name or icon or date, etc. 2. The first few sectors on every disk, containing information about what files are on the disk and the size, location, and type of these files. The list of where the parts of all files are located on a disk is called a file allocation table. When a disk is damaged the problem is often due to a garbled directory.

directory dialog box interface: The dialog box the Mac puts up when you want to Open or Save an application or document. You use it to navigate to the correct folder, then select the desired file.

disc storage: The correct spelling of "disk" when referring to compact discs.

disk storage: A round piece of plastic with magnetic stuff in it where you store information you want to keep around after you turn the computer off. Comes in hard and floppy varieties.

Disk Tools system software: This disk comes with your system disks and has several items that can be somewhat useful when you encounter disk trouble.

dismount storage: Causing the computer to give up all claim to a volume (a floppy, hard drive, cartridge, etc.) and remove it from the desktop. You dismount a volume by dragging its icon to the trash can or choosing Put Away from the File menu. A cartridge drive must be dismounted before its cartridge can be removed.

Display PostScript output: Extensions to normal PostScript that adapt it to drawing graphics on a computer screen.

dithering display: Mixing colors you do have to provide the illusion of more colors than are available by sacrificing resolution. A process commonly used in printing to reduce the number of colors needed for a particular print job. Also used with black and white images to give the illusion of gray when seen from a distance.

document system software: A file on the computer containing information to be acted upon (as contrasted with an application which does the acting).

Dogcow interface: The mythical mascot of Apple's Developer Technical Services, whose name is Clarus. He says Moof! When flipped horizontally he says !foom. Go to Page Setup under the File menu to see Clarus (you may have to click on the Option button). If you still have an Imagewriter, you won't see the dogcow.

DOI interface: (Document-oriented interface) An approach to computing that eliminates large applications that do everything their own way, and replaces them with small universal tools (such as text editing or numeric tabulating) that each do a particular operation on any document from any computer. Used in the Newton and OpenDoc.

DOS system software: (Disk Operating System) The software instructions that tell a computer how to act like an IBM PC; the System and Finder for those machines. The most common flavor is MS-DOS (made by Microsoft) although there are others.

dot matrix printer output: A printer that uses dots to create the text and image on the page. This term is most commonly used to refer to impact dot matrix printers which use small metal pins striking the ribbon and paper to create text and images.

double-click interface: To click the mouse twice quickly in succession without moving it. This usually tells the Mac to open or launch whatever was double-clicked. It also enacts the default option in dialog boxes.

download communications: Transferring a file from a remote computer to your computer, using a terminal program and a transfer protocol.

downloadable font output: Descriptions of fonts that are not built into a printer but are kept on a hard disk (connected to either the printer or the Mac) and sent to the printer as needed. This process takes time and makes printing slower. Virtually all downloadable fonts in the Mac world are written in the PostScript language.

dpi output: (dots per inch) A measure of resolution on a printer or scanner. The more dots per inch the device is capable of producing or reading, the more detailed and smooth the resulting output. The StyleWriter prints at 360 dpi; the LaserWriter family of printers print at 300 dpi, the ImageWriter IIs print at about 150 dpi; the standard Mac screen is 72 dpi, and typeset-quality print is around 1000 dpi.

drag interface: With the cursor over an object, press and hold the mouse button pressed. Then move the mouse and watch as the object moves with the cursor.

drag-and-drop interface: Mac users have been dragging and dropping files and folders into the trash can for years. System 7 enlarged upon the idea. For example, you may drag

and drop a document's icon onto the icon (or alias) of an application, and if the application is able to, it will launch and open the document. More recently, some applications have implemented drag-and-drop as a shortcut for cutting and pasting.

DRAM interface: (Dynamic Random Access Memory) The most common kind of RAM, the one people mean when they just say "RAM," except some PowerBooks and the Mac Portable that use Static or pseudo-Static RAM.

drive storage: A device that moves a storage medium and reads it or writes to it. Drives either spin disks or transport tapes. There are floppy drives into which you insert a floppy disk; there are hard drives that are sealed inside the computer or the external box they come in. There are also removable media drives, including those that have a large slot into which you insert a hard disk cartridge, tape drives, DAT drives, CD-ROM drives and optical drives.

driver system software: A piece of software which controls communication between your Mac and some peripheral device. Drivers usually need to be in the same folder as the System in order to be used; under System 7 they live in the Extensions Folder inside the System Folder. The most common drivers are those needed for printing. Scanners, CD-ROM drives and removable media drives also require drivers.

DVORAK interface: An alternative arrangement of the keys on a keyboard. DVORAK (named after the guy who invented it) is nonstandard, but allows more rapid typing than the standard QWERTY layout, some say.

email networking: (electronic mail) Text messages sent from computer to computer over a network or over phone lines.

Easy Open system software: Short for Macintosh Easy Open, system software that helps applications convert documents and indicate what types of documents they can open.

echo communications: Local echo is when the computer you're using displays what you're typing. Conversely, remote echo is the action of having the receiving computer send what it has received back before showing it on screen. A simple, but useful way to confirm that communication is happening correctly.

Echomail communications: Public message conferences on a BBS which are shared and distributed among other BBS's as part of an FidoNet network.

edition system software: A special file whose data can be shared by other documents (called subscribers) under System 7's Publish and Subscribe function.

eject interface: Causing the computer to push a floppy disk out of the disk slot. This action may or may not dismount the disk, which is what happens when the computer forgets all about it. You'll know if a disk is dismounted because its icon disappears from the desktop; otherwise it is only dimmed. Choosing Eject Disk from the Special Menu ejects a floppy but doesn't dismount it; do this when copying from one floppy to another. Dragging the icon to the trash can is the preferred way to dismount and eject a disk. If the disk won't pop out, press command-shift-1. If all else fails, straighten out a paper clip and poke it into the little hole beside the slot.

ELF display: (Extremely Low Frequency) A type of radiation given off by almost any electric device, but potentially dangerous amounts come from power lines, heavy machinery and some video monitors. The best prevention is to sit at arm's length from your monitor and stay away from the back or sides of one—that's where the radiation is highest. Shop for low-ELF displays.

em dash output: A dash (—) as wide as the character "m" in a given font. You get this special dash by holding down the Shift and Option keys while typing a hyphen.

em space output: A space as wide as the letter "m" in a given font, achieved by holding down the Option key while hitting the Space bar.

emulation mode system software: Software running on hardware for which it is not primarily written, such as DOS software running on Macs or 680x0 software running on a Power Mac. Not all features may work properly, and speed is degraded.

en dash output: A dash (-) as wide as the character "n" in a given font. You get this special dash by holding down the Option key while typing a hyphen.

enter key interface: Performs functions similar to the Return key.

EPS output: (Encapsulated PostScript File) A graphic file format composed of two parts: a simple bitmapped image (a 72-dpi PICT file) that the computer reads and displays on the screen and a complex PostScript code that a PostScript printer reads. EPS files are called "device-independent" or "resolution independent". This means they will print at whatever resolution the printer happens to be. The same graphic will print at 75 dpi on the ImageWriter II, at 300 dpi on the LaserWriter, at 1240 or 2400 on a Linotronic.

error control communications: Modem-based techniques which check the reliability of characters or blocks of data at hardware level.

Ethernet networking: A set of rules (protocol) for exchanging information which can accommodate high speeds (10 megabits per second, about five times as fast as LocalTalk).

EtherTalk networking: Apple's implementation of Ethernet.

event programming: Some action made by a user or by software that the software wants to know about. Like a bored dilettante, Mac software sits around waiting for events to happen. When you click on something, or hit a key, that sends an event to the Mac and it's off and running.

eWorld communications: Apple's very own online information service, debuted in June, 1994. It replaces AppleLink, which was used to communicate with software developers, BBS's, and vendors. Apple is using a revamped version of America Online's software and bundles the eWorld software with new Macs.

Extension system software: A file that modifies the behavior of the Mac Operating System. Extensions are sometimes small programs that can make your Mac do strange and wonderful things. They also take up RAM. They live in the Extensions folder inside your System Folder and load right after the OS when you start your Mac—you see a parade of icons at the bottom of the screen. Occasionally Extensions can cause misbehavior. You can troubleshoot by moving them out of the Extension

sions folder one by one and restarting, until the problem goes away. Even better, install only one at a time and give it a few days to reveal any antidigital tendencies. This System 7 term replaces the terms INIT and StartUp document from System 6.

FatBits interface: An eight-power blowup of a screen bitmap. The term was coined by Bill Atkinson, to describe the magnification feature in the original 1984 MacPaint, which was activated by holding down the Command key while choosing the pencil tool. Almost all bitmapped graphics programs written since then include the same shortcut—it's a Mac tradition.

fax communications: (short for facsimile) Hardware that sends a digital image of a document over communication lines to a similar device. Originally a fax scanned a printed document and a paper copy was recreated at the other end. With fax modems documents may remain in digital form.

fax modem communications: A modem capable of exchanging images with a fax machine. Typically, such modems are at least Group III-compatible and come with software that makes sending faxes as easy as printing.

fiber optics networking: Transmitting information encoded upon light beams that pass through thin strands of glass or plastic. Because light has a very high frequency it has an enormous bandwidth upon which to impress signals, hence it can carry much more than copper wires with much higher efficiency and speed. Light has the added advantage of being immune to magnetic interference. Right now your cable-TV may be carried to your home (or at least your street) on fiber optic cabling.

field interface: A discreet piece of information in a database, such as the Zip Code in an address book. A database contains records, and each record is made up of fields. In a program such as FileMaker, you can format the display of each field's information and specify the type of data, for example to make sure there are the right number of digits and no letters in a phone number. Very similar to a cell in a spreadsheet.

file system software: A self-contained single set of digital information on disk or in memory. A file is either an application or a document, anything from a brief letter to a QuickTime movie to a gargantuan application like Excel.

file editor utility: A software utility that allows you to open and change the resource and data forks of a document or application. Not for the faint of heart.

file format system software: The particular structure that a document (spreadsheet, graphics, text, etc.) is saved in. Text is a standard file format for words and numbers, and many applications can read text documents. Text file formats include ASCII (text only) and RTF (Rich Text Format), in addition to the particular format for your word processor. MacPaint and TIFF are standard file formats for bitmapped graphics, and EPS is a nearly standard file format for object-oriented graphics. Different applications use different formats and many can read and translate each others'. A document's file type is a four-letter code indicating its file format.

file server networking: A computer that saves and retrieves files on a network. Often, one Mac and its hard drive are dedicated to the job of being a file server. File server software controls who gets to read and use what, and how many people get to do it at the same time. Examples: AppleShare, System 7's file sharing.

file sharing networking: Using files on another Mac via a network. It can be as simple as two Macs sharing a printer, or as complex a network as you can create.

filename system software: The name of an application or document. It can be up to 31 characters long, but can't contain any colons (:) because those are reserved for pathnames.

filter system software: A small piece of code (module) used by an application to convert a document created by another application into a file format that it can read or modify the content of an image. Common use: Photoshop filters.

Finder system software: Always-running application that organizes the contents of and keeps track of changes to all files on a disk. It creates the desktop; in fact the desktop and Finder are almost synonymous. You use the Finder to find files, to copy and delete them and move them around, and to launch applications.

firmware hardware: Software that lives in chips, such as your Mac's ROM, and can't be changed. As the Mac has evolved, System files are instructed to ignore some portions of the firmware and substitute replacement code. The next generation of ROM chips contain the new code. Thus a great deal of compatibility is maintained.

Fkey system software: A miniature program, similar to a desk accessory, which is run by holding down the Command and Shift keys and hitting a number. An Fkey can be installed semi-permanently as a resource in your System or added temporarily with utility programs. Your Mac comes with one, Command-Shift-3, which takes a picture of the screen and saves it to disk.

flame communications: An online expression of opinion that is strongly worded and often quite unpleasant. Real-time chats have relatively few flames, but discussion groups (where people post messages to be read later) can degenerate into vicious "flame wars" which can go on for some time. A thoughtful article by John Seabrook about being flamed appeared in the June 13, 1994 New Yorker magazine.

flat-file database application: A simple database that is essentially one table that can't be linked to another. Example: FileMaker.

floating point programming: Mathematics in which an essentially unlimited number of digits after the decimal may be used. Mathematically speaking these are "real" numbers (as opposed to integers); you will want to have a coprocessor if you need to do a lot of floating point calculations for applications such as 3-D modeling.

floppy disk storage: A round piece of plastic with magnetic stuff in it where you store information you want to keep around after you turn the computer off. Standard Mac floppy disks have a hard plastic cover with a

sliding metal door (for use by the computer—not you), these are also called 3.5" floppies to distinguish them from 5.25" floppies used by the old Apple II series and IBM-type computers. Regular Mac floppies can hold 800 kilobytes (the original standard was 400 kilobytes). The FDHD, or SuperDrive, floppy drive in Macs made since the later SE's can handle the older Mac disks and newer ones that hold 1.44 megabytes and can even read 3.5" DOS disks.

floppy drive storage: The mechanism that reads and writes floppy disks.

flow control communications: A mechanism that compensates for differences in the flow of data to and output from a modem or computer. Generally two choices are available: software flow control (sends control-key signals to tell the other system to start and stop) and hardware flow control (uses special signal wires).

folder interface: A place to hold documents, applications, aliases and other folders on a Mac disk. Folders have icons on the desktop and hold virtually unlimited number of files. You move items into a folder by dragging the item's icon onto the folder. The easiest way to open a folder is by double-clicking on its icon. To put a file back into its folder, select it and choose Put Away from the File menu.

font output: A digitized set of characters in a single typeface design. A digital font can be any size unlike old-fashioned typography where each size is considered a font. Plain (or Roman), Bold, Italic, and Bold/Italic are the traditional styles within a font family. Fonts are either bitmapped fonts or scalable. Scalable fonts come in two varieties, PostScript and TrueType.

font id output: Each font has a name and an id number to identify it to the computer. Unfortunately, given the thousands of available fonts, a time will come when you have two fonts with the same id and/or name on your system and your printouts won't look at all right. Worse, some programs renumber fonts when they encounter conflicts, which can really mess things up when you take your documents to another computer to print them. Modern programs refer to fonts by name only, which helps clarify things, and programs like Suitcase can help resolve conflicts.

format storage: (verb) The process of erasing everything on the disk and checking the medium for physical errors. This must be done to new disks before they can be used by the computer. Sometimes called a "low-level" format.

fragmentation storage: The scattering of information on a disk into lots of little pieces. This can become a problem on a hard drives. A seriously fragmented disk appears slower because the computer has to search many places for information. Eventually a disk can become so fragmented it will lose data. Utilities can be used to defragment a disk and, although this may take some time with a hard drive, it is a good idea if you use your Mac a lot. A similar condition can occur in the computer's RAM (weird things will begin to happen), in which case it is best to quit the applications and restart them.

Freeware industry: Software that some nice person creates for themselves and then puts out

into the world at no cost to others. Often available on BBS's, through user groups and from friends.

front end communications: Software (and rarely hardware) that communicates with other software and sometimes hardware. The purpose of a front end is to either limit access to the actual system being used or to improve the interface. A common example is a client/server setup on a BBS or the Internet; we know a guy who uses a PowerBook as a front end to a Cray!

FTP communications: (File Transfer Protocol) The Internet's protocol for moving files from one computer to another. Also the name of the application which moves files using file transfer protocol.

full-duplex communications: Simultaneous, two-way exchange of information on a network or phone line. It is sometimes used to refer to the suppression of online local echo and allowing the remote system to provide remote echo.

full-height storage: A hard drive mechanism that is over three inches tall is full-height. Disk drives with the largest capacities usually come in full-height sizes only. Full-height drives do not fit inside Mac SE family or Mac IIcx family computers, and they fit in Mac II family computers only if the hard drive mounting bracket is replaced with a bigger one. Even still full-height drives may not fit on top of DIP SIMMs in a Mac II.

function key interface: A key at the top of an Apple Extended or Adjustable keyboard that carries out some operation when pressed. Most function keys are application-specific. Big in the blue world, but discouraged in Mac software where the graphical interface is supposed to make them unnecessary. See FKEY.

gateway networking: A connection between computer networks that translates the information from one network's format to the other's. A gateway allows messages from one information service or BBS to be carried by another.

genlock display: The ability to synchronize two video signals—for example, a video image with a computer-generated title—on the same screen.

GeoPort communications: Serial port capable of high-speed communications, with the assistance of a communications module. Found on the AV and Power Macs.

Get Info system software: A function of the Finder (in the File menu) that displays useful information about any file on the Mac, such as its size and creation date.

GIF communications: A CompuServe graphic format with 1 to 8 bits per pixel. It is compressed and works on different computers, but few applications can read it.

gigabyte storage: A unit of measure, technically 1024 megabytes, which is roughly one billion bytes - 1,073,741,824 to be precise. Impress your friends with this useful knowledge.

glossary self-reference: 1. A list of terms used in a particular discipline and their meanings. The better ones are cross-referenced. 2. A very useful feature of word-processors where you list frequently typed words or phrases and key strokes that will cause the computer to substitute the glossary entry as you type.

Gopher communications: A menu-based system for exploring Internet resources.

grabber interface: The little hand icon with which you can move your document around in its window. First seen in the original MacPaint, the grabber has become a standard tool in most Mac graphics programs.

graphical user interface interface: The interface we all know and love, developed at Xerox PARC and more recently copied by Windows. This type of interface uses pictorial representations of real-world things on the screen and gives you a mouse or other pointing device to interact with them. Nickname: "goosey" (GUI).

graphics tablet interface: A flat panel used with a special pen (called a stylus) to move the cursor around the Mac screen, especially in graphics programs. More advanced models are sensitive to the amount of pressure you're applying and alter the line weight accordingly.

grayscale display: Some Mac screens are really grayscale rather than plain old' black and white. On a black and white screen or on printed material, gray tones are simulated by black dots that give the illusion of gray when an image is seen from a slight distance. On a grayscale monitor, however, the same image will display in actual shades of gray. The number of bits per pixel determines the number of values of gray that can be differentiated; for example, 8 bits permits 256 shades of gray. A TIFF file can be saved as a grayscale document, albeit a much bigger file.

greek output: Nonsense text used to simulate the finished appearance of a document without distracting you with its content. This term also means the gray lines that stand in for text when a document has been reduced on the monitor.

Group III communications: The standard for facsimile transmissions (fax machines). Group III-compatible fax machines or fax modems send data at 9600 baud, at a resolution of 200 dots per inch, and can send some gray-scale information at their option. Group III is the overwhelming fax standard in the US, but less so in Europe.

half-bridge networking: A combination of hardware and software connecting a network to telephone lines to send data beyond the physical limits of the network.

half-duplex communications: In telecommunications, signal flow in both directions, but only one way at a time. This term sometimes refers to the activation of local echo which causes a copy of sent data to be shown on the sender's display.

half-height storage: A hard drive that is about one and a half inches tall. This size drive fits inside all Macs.

halftone output: An image that is composed of solid black dots of various sizes at equal spacing, which creates an illusion of various shades of gray. This is how continuous-tone images, such as photographs, have traditionally been reproduced by printing presses, which are not capable of generating true grays.

handshake communications: The exchange of information between to devices (usually modems or printers) to determine whether conditions are right for further communication.

A printer may send a handshake to tell the computer to pause while it digests the information is has just received.

hard copy output: The printed version of what you have in the computer.

hard drive storage: The machinery that permanently encloses a disk together with the disk itself. The disk is a round piece of hard plastic coated with a magnetically sensitive surface. Most hard drives have more than one disk inside, stacked on a single shaft, with a read/write head for each surface. The machinery spins the disk and reads its contents very quickly. Hard drives come in 2.5", 3.5" and 5.25" diameters, and can hold from 20 megabytes up to gigabytes.

hard return output: A carriage return that will always end the current line regardless of where it is on the page. In a word processor, a hard return starts a new paragraph.

hard space output: A space that looks like a space to you but not to the computer. The sentence will not be broken by word wrapping at a hard space. Type Option-Space.

hardware hardware: The parts of the computer or any peripherals that you can bang on. The monitor, keyboard, modem, scanner... all the things you can touch are hardware. As opposed to software.

Hayes command set communications: A set of instructions for controlling modems developed by Hayes Microcomputer Products and informally standardized in its 1200 baud modem. Virtually all telecommunications software and hardware support this set of commands to some degree. Also called the "AT commands set" because each command is preceded by the letters "AT."

head crash storage: What happens when the read/write head of a hard drive contacts the disk surface, or even when a piece of dirt gets in between them. Very bad. You can't replace your divots on a hard disk.

heap programming: The free memory that is allocated to the different applications you are running at any one time. The heap is governed by the Memory Manager, a vital part of the Macintosh Toolbox. Sometimes when the computer seems to pause, the Memory Manager is moving blocks of data around to compact the heap and open up large contiguous empty blocks.

hexadecimal system programming: A number system consisting of sixteen integers from 0 to 9 and A through F. This system, aka base-16, dovetails beautifully with the binary system since a pair of hexadecimal numbers can represent discreet values from 0 to 255 in base-10, the same as two bytes can. Hence 01 hex equals 00000001 binary and 1 in base 10, while 61 hex equals 01100001 in base-2 and 97 in base 10, and is used to represent the letter a. Hex is much easier for us humans to read than a mosaic of zeroes and ones. You may have seen these strange little numbers if your ImageWriter ever hiccupped and printed codes.

HFS system software: (Hierarchical File System) The way the Macs (starting with the 512E) keep track of the contents of folders.

hierarchical menu interface: A sub-menu that pops up when you select a specific menu item. Hierarchical menus are used to provide many choices within a category without bringing

up a dialog box. Menu items that lead to sub-menus are designated by a black triangle, on either side of the menu, pointing sideways.

high-level language programming: Programming languages that are closer to natural speech such as HyperTalk and BASIC. They are easier to program but often result in bulky, slower programs.

highlight interface: To make something visually distinct from its background by changing or inverting its colors. Objects that are selected or chosen are highlighted.

hint output: Techniques developed along with outline fonts that let any printer accurately render serifs, stems and any other character components at any type size or orientation.

hot spot interface: The one pixel in the cursor that actually shows the mouse's location on screen, and the part of the cursor that must be aimed accurately. On the arrow cursor, the hot spot is the tip of the arrow.

HyperCard system software: An application for creating databases, utilities, presentations, and other kinds of applications. If you have a Mac, you probably have it (or at least its sibling, the HyperCard Player) so stop reading this glossary entry and go play with it for a while. Documents created with HyperCard are called "stacks" (of cards, get it?).

hypermedia industry: Simply the extension of the hypertext idea to cover non-textual information, like pictures and sound (not much of an intellectual leap).

hypertext industry: A concept articulated by Ted Nelson in the 1960's, in which any piece of textual information on a computer can be connected to any other. Users can jump from one piece of information to other related pieces quickly and thereby learn things in a non-linear, semi-random sequence. Users should also be able to create these links between pieces of information. Parts of the hypertext ideal are present in some Mac applications, notably HyperCard.

I-beam interface: The cursor shape that looks like the edge-view of an I-beam. When you want to enter text, position the I-beam cursor and click. The insertion point (a flashing vertical bar) appears where you clicked, and you're ready to go.

IAC programming: (InterApplication Communications) The process of exchanging information and instructions between applications. A whole suite of IAC capabilities is a part of System 7, including Publish and Subscribe (automatic updating of information shared between different kinds of documents) and Apple events, which is the sending of commands from one application to another.

icon interface: A small picture representing something. On the Macintosh, icons represent documents, applications, devices and sometimes processes. For example, a disk icon represents a physical disk but the Trash Can represents the action of throwing something away.

IGES applications: An older file format for CAD documents, standardized on mainframes and minicomputers. Most CAD programs can

read IGES files, although DXF is more often used in the Mac world.

image backup storage: Full or global backup where everything is copied.

image processor output: An application that takes images—often scanned or captured photographs or video—and edits them. You can edit your sister's ex-boyfriend out of a family snapshot, or add yourself to Rick's Bar in Casablanca. As this technology becomes undetectable, photographs are becoming inadmissible evidence in court and advertisements are more enticing than ever. It lends a new twist to Groucho's joke, "Who are you gonna believe, me or your own eyes?"

Imagesetter output: A very high resolution laser-based printer that prints on photographic paper and is so costly you go to a service bureau to use one. These machines can create output at up to 3,600 dpi!

ImageWriter output: Apple's original Mac printer. ImageWriters, now out of production, were impact dot matrix printers and came in three varieties: the original ImageWriter, slow and problematic; it was replaced by the bestselling ImageWriter II which was a real beauty in its day, capable of 144 dpi resolution; and the Edsel-like ImageWriter LQ wide-carriage printer.

import applications: Bringing a file created by one application into a document created by another. To successfully import something you need to know if the application doing the import is capable of handling the file format of the incoming document. Many programs use special filters to convert formats, and there are file conversion programs such as DeBabelizer. You can almost always import a plain-text file, and tab-and-return delimited databases go to and fro quite easily. It gets more complicated with graphics.

incremental backup storage: A type of backup where only those things which have been added or changed since the last backup are copied.

indent output: White space between the margins on a page and a body of text. Normally used only as a first-line indent, either inside the margins like you learned in typing class or outside as a hanging indent. Most indentation is accomplished with margin settings since word processors give each paragraph its own ruler. Not really a character (no ASCII value), but it's almost one.

INIT system software: Small chunks of code that load right after the Operating System and add features to it. INIT is the pre-System 7 name for Extension.

initialize storage: The process of erasing a disk's directory so that new data can be written over the old. Since initialization doesn't remove the data, it can be recovered with a disk utility if the disk is initialized by mistake.

inkjet printer output: A type of printer whose print head squirts droplets of ink through tiny nozzles onto plain paper. This amazing technology made the ImageWriter nearly obsolete, and made very low cost 300 dpi printing available to most users. One problem: the ink can smear, even after it's dry (if it gets wet).

input device input: Any device through which you get information into or control the computer. This term includes keyboards, mice,

data sensors, etc., but usually excludes things like disks and modems.

insertion point interface: The place where what you type will next appear on screen, identified by a flashing vertical bar. You can move the insertion point by clicking somewhere else in the text; you can get rid of it by clicking outside the text area.

Inside Macintosh programming: A series of technical manuals by Apple (published by Addison-Wesley) that describe in great detail the inner workings of the Mac Toolbox (the immense collection of code routines that most programs call upon to do things), the operating system and other basic elements of Mac hardware and software. Its examples are written in the Pascal language, since that's what the Toolbox is written in. The complete series runs in a number of books (recently revised) totaling over 2,000 pages and costing hundreds of dollars. It's hard to read, but it can be done!

installer system software: Software that automates the process of putting an application or even a new operating system onto your hard drive. It's still OK to drag simple programs onto your desktop like always, but with huge, complicated applications the files may be split between floppies or the installer may know where some special files or resources need to go.

interface interface: Broadly, the way any two things communicate with each other. In this glossary interface is short for "user interface", which is the way a computer appears to the user, and the rules by which they communicate. The Mac (and Windows on a DOS machine) has a graphical user interface, nicknamed "goosey" (GUI) because it makes use of pictures and images to convey meaning. Most other computers use a command-line user interface, called "cluey" (CLUI) which uses specific typed commands to convey instructions.

interlace display: A kludgy trick to work around the limitations of the NTSC video system, which is the standard in the United States. NTSC consists of 30 frames per second at 525 lines per screen resolution. That is low resolution compared to Europe or Japan which use up to 1,000 lines of resolution in the video signal. In order to "fill out" the image and minimize flicker, one-half of the image is drawn every 1/60 second, first the 262.5 odd numbered lines, then the evens. Couch potatoes are digging in until HDTV comes along. Computer displays are non-interlaced—a major reason why they cost more—and the Mac display runs at 66 frames per second.

interleave storage: A way of optimizing the efficiency of a hard drive by spreading out chunks of data so that as it spins (very fast, you know) the computer can absorb (or dispense) the information in a continuous stream. Remember that disks are divided into tracks, and each track is divided into sectors. With a slower machine like the Mac Plus, the data is interleaved at a 3:1 ratio, that is, written to every third sector on the disk. If it were written to contiguous sectors, the hard disk would have to go around an extra complete revolution after each sector was accessed because the machine wouldn't be ready for the next sector. There is just enough time

if the drive lets two sectors go by, so the 3:1 interleave is set by the driver software. Older SE's need a 2:1 interleave. Newer Macs are fast enough to use a 1:1 interleave, which is really no interleave at all!

Internet communications: "The Internet" - The international telecommunications network formed by thousands of networks connecting a half-million academic, industrial, and government computers that exchange messages constantly. The Internet uses the UNIX operating system which is powerful but very user-unfriendly. Software is becoming more available to make it less painful to Mac users. You can get onto the Internet via an institution you work for or belong to, or you can sign on to a service like UseNet, or you can gain access through an online service like Delphi or America Online.

internetwork networking: Aka internet; A group of networks joined together with bridges, routers, gateways, etc. that are capable of communication with each other.

interpreter programming: A program like HyperCard or BASIC that takes a program written in a high-level language and translates it "on the fly" to machine code that the processor can carry out. Interpreters are very convenient to work with since you can interrupt the process at any point to make changes or debug. However, since the translation takes substantial time, your program runs much more slowly under an interpreter.

interrupt switch programming: The button on the programmers switch without the triangle. When you press it, it interrupts whatever is going on and puts you into a mini-debugger window, where if you know what you're doing you can look directly at the contents of memory and do other programmer things.

invisible file system software: A document or application which is on a disk but whose icon is not shown. It is not counted as an item, and cannot be selected in any standard way. Such files can still be accessed by applications and will be seen by utilities. The desktop file is invisible. Any file can be made invisible.

IPX networking: Novell NetWare protocol.

ISDN communications: (Integrated Service Digital Network) A worldwide standard for digital telecommunications. ISDN features two channels running at 64 kilobytes per second plus a third low-bandwidth channel.

ISO industry: (International Standards Organization) The really big organization that slowly works out standards for telecommunications for the whole world.

ISO/OSI communications: (International Standards Organization/Open Systems Interconnect) A set of rules, still under development by the ISO, to standardize communication between different types of computers. Universal conformity to these rules promises easy exchange of data between any two machines.

IWM storage: (Integrated Woz Machine) The chip that controls the disk drive in your Mac. You probably don't need to know this, but it's a fun name for a chip.

JPEG output: (Joint Photographic Experts Group) A graphic file format used for compressing large bitmapped graphic images. QuickTime uses JPEG to compress images to as little as 1/20 their original size. Howev-

er, there is trade-off: JPEG is called "lossy" because when you decompress an image, you don't get back the exact original. Repeated cycles of compression and decompression can significantly degrade an image, and should be used with care.

Kermit communications: A telecommunications protocol developed at Columbia University and widely used on UNIX machines. It can be used on a wide variety of computers from mainframes to micros. Kermit's big claim to fame is that it works across eight-bit and seven-bit machines and it can transfer batches of files at a time. While not terribly efficient, it is sometimes a necessity for transfer involving different systems. Not recommended for PC to PC transfers.

kern output: To adjust the spacing between two characters. Typefaces are designed with specific space around each letter, but some combinations, such as WA look awkward unless brought closer together. Kerning can be done in any amount, but small amounts are best.

kerning table output: Special instructions for adjusting the spacing between specific pairs of letters in a typeface. This table, if it exists for a given font, is stored in that font's FONDR-source.

Key Caps system software: A handy DA that shows the layout of the keyboard and how each letter looks in any one of the installed fonts. You can see the capitals by holding down the Shift or Shift/Lock keys and the other characters that are available when holding down the Option key and the Option-Shift combination.

keyboard interface: The input device that reminds your grandma of her old Smith-Corona typewriter. After the Mac Plus, all Macintosh keyboards have a numeric keypad. An enhanced, or extended keyboard has a row of function keys across the top in deference to fugitives from the blue planet. The time-honored key layout is called QWERTY, but some pioneering types use the more efficient DVORAK layout. Other developments include the curved Maltron keyboard, and a keyboard which separates into two parts so you can hold your hands more naturally. Advocates claim these last two help avoid the dreaded carpal tunnel syndrome.

kilobyte storage: 1024 bytes, exactly 2 to the 10th power. Kilo- is Latin for thousand.

kludge programming: 1. Awkward, makeshift and non-intuitive. Used to describe applications or methods of getting things done. 2. A work-around that effectively solves a problem, usually in an innovative way.

LAN networking: (Local Area Network) A bunch of computers connected via cables and software, allowing hard drives and other devices to be shared. LANs typically have 50 or fewer computers hooked together in the same building, but variations do exist.

laser printer output: A great leap forward in printing technology that allows us civilians to produce high-quality graphics that look like they were done by professional printers. The output of a laser printer is a page whose image is composed of extremely small, evenly spaced dots of ink at resolution of 300 dpi (600 dpi is now available). It may have come from the marriage of a dot-matrix printer and a photocopier, but really it's a thing unto itself. The laser beam electrically "etches" the

image upon a statically charged drum which then picks up charged powdered ink. The ink is then handed off to the paper and made permanent by a hot roller. Amazing.

launch interface: To run, or start, an application.

layer interface: A system built in to object graphics programs in which each object behaves as if it were drawn on a piece of transparent film. Objects do not obliterate others that they overlay, and any object can be put in front of or in back of any other. Draw programs go a step further, providing layers with their own names and characteristics, each of which can hold individually-layered objects. You can then hide or show these super layers as you work on the drawing. Some advanced bitmapped graphics applications such as Photoshop have their own layering features.

LCD display: (Liquid Crystal Display) A screen whose circuitry can cause individual pixels to be transparent or opaque. The screen itself is transparent and requires some sort of backlight for adequate visibility. They're also impossible to repair, so if more than a few pixels are bad the factory has to dispose of the screen. The most common type of LCD display is called "passive matrix". This type is easier to manufacture, hence cheaper. It's also slower and harder to read due to lower contrast. The better type of LCD is called "active matrix" and has a transistor for each pixel. These displays have a higher contrast and wider viewing angle, but they're more expensive and harder to make.

leader output: A small character such as a period, hyphen or underline that leads your eyes from one column of information to another, such as in a table of contents. Many applications let you attach leaders to tab stops.

leading output: (Pronounced "ledging") The space between two lines of text, usually measured in points (72nds of an inch). The name comes from the strips of lead that printers used to put between lines of type. On the Mac, leading is usually measured from the top of one capital letter to the top of another on the next line.

LF communications: (Line Feed) An invisible character that instructs the printer to move down to the next line. On character-based computer displays, the line feed is used for the same purpose. On the Macintosh it is not used and often has to be removed from word-processing files transferred from other computers.

ligature output: A typographic nicety: one character that is actually two characters combined together. For instance, when you type the letter f next to the letter i, the hook of the f bumps into the dot of the i. The ligature for f and i is one character. Every PostScript font on the Mac includes the common ligatures such as those for fi and fl. Certain other fonts, like the Adobe Expert collections, contain many more ligatures.

line spacing output: The distance from the baseline of one line of text to the baseline of the next, measured in points (1/72nd of an inch). This term is a more computer-like replacement for the printer's term "leading".

Lisa industry: Macintosh's grandmother, also later called the Mac XL. A Mac precursor.

list box interface: A window or dialog box that contains a list of things (or even a series of icons or pictures) that you can select from.

localization programming: Adapting software to another country, culture, or language by rewriting the menu names and menu items, default settings, and anything else necessary to make the application understandable and appropriate.

LocalTalk networking: Actual name for the cables which Apple sells to connect Macs together, commonly called AppleTalk. It has been largely superseded by hardware that uses standard telephone connectors.

lock storage: To protect a file or disk (or other storage medium) from being changed, written to or erased. Protection can be achieved physically, by sliding the write-protect tab on a floppy disk to where you can see through the hole, or in software, by clicking the checkbox named "Locked" in the file's Get Info window.

log off communications: To quit a multi-user computer, BBS or online service.

log on communications: To get access to a multi-user computer, a BBS or online service, generally by identifying yourself with a name and password.

lpi output: The number of lines in a halftone image. Halftone images are composed of solid dots of various sizes at equal spacing, which creates an illusion of various shades between black and white (gray tones). This is how continuous-tone images, such as photographs, have traditionally been reproduced by printing presses, which are not capable of generating true grays. Resolution when defined by the number of lines (of dots) per inch, does not readily translate into dots per inch on an electronic output device such as a LaserWriter, because these are digital devices with dots all the same size. In fact, sophisticated algorithms are required to translate from lines per inch (halftone) to dots per inch (electronic). PostScript is an example of such an algorithm.

lossless storage: Compression without data loss
Example: StuffIt

lossy storage: An adjective to describe a compression scheme, typically for a bitmapped image like a captured frame or photograph or a video sequence, that loses a little bit of data every time a file is compressed. Lossy compression algorithms like JPEG squeeze files up to ten times tighter than lossless compression like Compactor.

MacBinary communications: A special format for storing Mac programs on other computers. The Mac document or application is converted into a highly specialized form of text for storage on other machines, and then converted from text back into a Macintosh file when transferred back to a Mac. Most telecommunications programs do all this automatically.

machine language programming: Computer instructions at the lowest level - the language of the processor itself. Serious 0's and 1's. This code is almost always the end result of a program written in a mid or high-level language, then turned into machine language by an interpreter, or the duet of a compiler or assembler and then a linker.

MacinTalk system software: System extension converts text to speech. Incompatible with many Macs these days, largely replaced by PlainTalk.

MacPaint applications: The original painting program for the Mac 128, developed by Bill Atkinson. Also a black-and-white graphics file format.

macro interface: A series of commands, mouse movements, and keystrokes that are recorded and played back (actually, reenacted). Macros are used to automate complex or repetitive tasks. They are created typically by having the computer record a series of actions as you go through them (this is called a "watch me" macro) or by writing out instructions in a special programming language. The languages used for making macros are usually not as powerful as traditional programming languages, and so they are often called "scripting" languages, and the macros are called "scripts."

magneto-optical drive storage: A combination of optical and magnetic storage technology. The disk itself is magnetic, but a laser beam is used to encode the surface. These drives have much greater capacity because the light beam can be focused much tighter than a magnetic field.

mail merge output: A document combined with a database, usually for the purpose of making form letters. For example, a letter would have "holders" in place of name, address and title, and a database containing that information could be merged with that letter to create a series of "customized" letters.

mainframe communications: Big computer you log into remotely.

marquee interface: A selection area indicated by a rectangle of dashed lines that move around the boundary, featured in the Finder and lots of graphics programs. The result looks kind of like marching ants, or like the chaser lights on a theatre marquee. Hence the name.

mask output: The act of covering up a portion of an image either to avoid seeing it or to protect it from some process you intend to perform on the unmasked portion. This term is also used as a noun for the thing itself.

megabyte storage: 1024 kilobytes or, precisely, 1,048,576 bytes or 2 raised to the 20th power. Roughly a million bytes or about 600 double-spaced pages of text.

memory hardware: Where information is stored. It comes in two varieties, volatile and nonvolatile. Volatile memory lives in chips and is dependent on a continuous electronic current and can be easily lost (RAM is volatile memory). Nonvolatile memory does not depend upon current (e.g. a floppy disk). Memory is measured in groups of bytes (kilobytes, megabytes, gigabytes, etc.).

menu interface: A list of commands which appears on screen so you can select commands from your mouse. The Mac uses pull-down menus which are accessible at the top of the screen, as well as pop-up menus in some dialog boxes. Choosing a menu item results in immediate action unless the item ends with three dots in which case a dialog box listing more options will appear.

menu bar interface: The horizontal strip usually visible at the top of the screen which

contains the titles of menus. If the menu bar is not visible, press command-space.

microcode hardware: Machine-language instructions that tell the CPU how to handle complex instructions such as those that take more than one clock cycle and/or use a lot of different parts of the chip. A high-overhead feature of CISC architecture, virtually eliminated by RISC chips.

MIDI output: (Musical Instrument Digital Interface) A hardware standard and a protocol for exchanging information between computers and electronic musical instruments.

minicomputer hardware: Bigger than a microcomputer, smaller than a mainframe.

MIPS hardware: (Millions of Instructions Per Second) A common, if somewhat misleading, measure of a computer's processing power. A Mac IIfx can process about 8-10 MIPS, a Quadra 700 does 16 MIPS. Macs don't usually get rated in MIPS.

MNP communications: (Microcom Networking Protocol) A set of hardware error protection protocols (MNP Levels 1-4) and data compression techniques (MNP Level 5) developed by Microcom. It makes use of CRC and retransmission of defective blocks by checks performed within the modem. It is strictly an American standard and is considered inferior to v.32 and v.42.

mode interface: A state in which your choices are limited. In general, Mac software tries to avoid modes and let you choose any command at any time. Dialog boxes are a willful intrusion of modality because they occur when specific information is needed before the program can continue.

model programming: A graphic or mathematical representation of an idea, whether a scientific problem or a three-dimensional object. The earliest kinds of modeling were used for weather forecasting (and bomb blasts). In fact, these studies fostered the emergence of chaos theory. Graphic modeling is used to create architectural views and fantastic visual effects for Hollywood movies.

modem communications: (short for modulator/demodulator) A piece of hardware used for communication between distant computers. It translates digital computer information (bits and bytes) into analog noises (hisses and chirps) and sends these noises over standard telephone lines to another modem, which does the reverse.

modifier key interface: Any key that has not character associated with it, but which changes the behavior of the keys. The modifier keys on the Mac are Caps Lock, Command (Apple on some keyboards), Control, Option, and Shift. When using modifier keys, you hold those keys down and then tap the character key that it modifies. For instance, the keyboard shortcut for Paste is Command-V. A few applications also recognize the Num Lock key as a modifier.

Moof! output: Moof! is what the Dogcow says.

motherboard hardware: A piece of fiberglass onto which the most important chips fit, including the CPU which runs your computer. Also called a "logic board".

mount storage: In the old days, "mounting" meant taking a reel of computer tape and mounting it on the tape drive's spindle so the computer could use it. Nowadays it means

making any volume (a floppy disk, SyQuest cartridge, hard drive or even a disk partition) available to the computer. Usually this happens without your having to do anything—when you insert a floppy it's mounted automatically—but sometimes it's necessary to use a software utility such as SCSI Probe. With a cartridge drive it is necessary to insert the cartridge before you can mount the drive.

mouse interface: A little hand-held rolling device that moves a cursor around a computer screen and comes with one or more buttons. Moving the mouse cursor and clicking the button is one way of controlling a computer.

MultiFinder system software: An advanced version of the Finder under System 6 that supports having more than one application open simultaneously. You can then bounce back and forth between applications and the desktop. MultiFinder really only works on computers with more than 1 megabyte of RAM. You can also switch back to the regular Finder if you need to. With System 7 the Mac is always in a multi-application mode.

multimedia multimedia: Any combination of graphics, video, animations, text and sound. A leftover word from the 1960's (you might enjoy reading "The Electric Kool-Aid Acid Test") that's all the rage in the '90s. Some of it is pretty good, I hear.

multi-tasking programming: The ability of a sophisticated computer to calculate separate problems at the same time. Multi-tasking is used on large computers to handle multiple users and is being introduced into small computers to allow a single user to continue working even when the computer has to spend time on something else. On a non-multi-tasking computer, when the computer has to figure something out the user has to wait.

munge programming: 1. To destroy, break, waste, corrupt or render incomprehensible. When this happens to one of your files, it's munged. Some say the term means "mashed until no good", but I can't account for the final "e". Hey, this is a serious lexicographic issue. 2. (Munger) The name of a TextEdit routine in the Mac Toolbox that replaces a block of text with another.

nanosecond hardware: One billionth of a second, or the time it takes light (or an electronic signal) to travel one foot. In this realm, the distance between chips on a circuit board becomes an issue. The speed that RAM chips are able to accept read and write operations is measured in nanoseconds. With speedier processors you need faster RAM chips to keep everything flowing. A 68030 (a relative slouch in these days of 120 MHz PowerPCs) needs RAM chips that run at 80 ns or faster, but older Macs can't take advantage of the speed and can use slower (cheaper) chips.

native mode system software: Software specifically written for the hardware it is running on, thereby taking full advantage of the capabilities of that hardware and running at maximum speed. PowerMacs run native mode applications faster than they can older programs which run in (680x0) emulation mode.

navigate interface: Getting around on and inside the desktop of your Mac. Most often you'll use the directory dialog box to navigate through folders to find the file you want, and it can be somewhat confusing. In a di-

rectory dialog box clicking and holding the mouse button on the name of the folder (above the list box), gets you a path menu showing all the folders that the current one is nested in. Third-party utilities such as Super Boomerang can aid your navigation. In the Finder (System 7), Command-clicking on a window title also gets you a path menu. Navigation is also an important concept in Hypertext.

nested interface: When folders are stored inside other folders they are said to be nested.

netmail communications: Ostensibly private e-mail which is transmitted by a user calling one BBS to another user calling a different BBS. Main usage in FidoNet BBS's.

network networking: Computers connected together in order to exchange information. Usually this is accomplished with cables but sometimes with modems and telephone lines. Really, when you connect a printer to your Mac you have created a very local network.

NiCad power: (short for nickel/cadmium) The most common type of rechargeable battery. There is a lot of talk about the "memory effect" of a NiCad battery (where the battery begins to refuse more than a shallow charge and eventually goes bad), and you'll hear about completely draining them after every few uses. The latest poop is that it is unnecessary to drain NiCads beyond the point at which their charge affects the machine that's using them (the normal recharge point), and that with batteries made up of more than one NiCad cell (a multiple of 1.5 volts), when you completely drain them—with a light or a resistor—you run the risk of having one cell go below zero volts, get a reverse charge and die, rendering the whole package useless. By the way, they are also an environmental problem, so look for a battery recycler in your neighborhood.

node networking: A device that is attached to and is capable of communicating with a network.

noise communications: Any unwanted data mixed in with the good stuff you're after. In telecommunications it is static in the phone line or satellite link. In graphics it can be odd bits of dirt on your image.

Note Pad system software: An Apple desk accessory. You can write notes in it and they will be retained when the computer is turned off.

NSA industry: (National Security Agency) You are probably expecting some left-wing, Berkeleyesque snipes at this federal agency, but the NSA is in this glossary only because they possess the largest concentration of computing power in the US, and quite possibly in the world. Just thought you might want to know.

NTSC display: (National Television System Committee) This name is most commonly used as an adjective for a kind of video format, notably the standard for broadcast video in the US. NTSC IV video has two interlaced fields per frame and 30 frames per second. Wags say that it stands for "Never Twice the Same Color". Other standards are PAL (Britain) and SECAM (France). Some day HDTV will replace this fifty-year-old standard, but the programs will probably still be low-grade!

NuBus hardware: A set of rules developed by Apple for expansion cards that plug into slots inside the computer. NuBus cards are generally more intelligent and speedier than earlier expansion cards. They are used by most Macs with slots, but second-generation PowerMacs will substitute the PCI bus standard.

NuBus card hardware: An expansion board that adds hardware functionality to your computer. You can get video cards, accelerator cards, clock cards, cards that automate industrial processes or interface with scientific measuring tools, or whole computers on a card. They plug into NuBus slots inside most Macs; some.

null-modem cable communications: A cable for connecting two devices through their serial ports in which the wires carrying information (two and three) are crossed, so the information coming out of one device goes into the other. This type of cable is used to connect a Mac to an ImageWriter and can be used to connect two Macs directly without modems.

num lock key interface: A special key, usually at the upper-left corner of the numeric keypad, that switches the function of the number keys from cursor movement to numbers.

nuPrometheus League industry: A bunch of crazy guys — most likely disaffected Apple employees — who decided to give away some of Apple's ROM source code in the Summer of 1989. As of this writing they remain anonymous and apparently unrepentant, though an investigation was conducted by the FBI.

object graphics output: Graphics in which you create discreet elements and then arrange them rather than creating the entire image as one complete thing (analogous to the difference between a collage and a painting). Each object is defined by mathematical formulae and lives on a separate, transparent layer. Contrast to bitmapped graphics. Because the resolution of object graphics is "device independent", they print at the resolution of the printer. Thus a drawing may look jagged on the Mac screen but print perfectly on an LaserWriter. MacDraw was the original object graphics program and programs were considered to be either "draw" or "paint" type, but modern applications include features of both.

object-oriented programming programming: A development technique where code is divided into small pieces and can be reused by other code for efficiency.

OCR input: (Optical Character Recognition) A process whereby hardware and software look at printed or typed words and interpret them as words rather than as pictures. OCR technology has become remarkable better and soon may be actually convenient. OCR's methods require high-powered personal computers (or larger), and that is not likely to change.

OEM industry: (Original Equipment Manufacturer) The company that actually makes the hardware that other companies buy and resell under their own labels. You need to know the OEM usually only when purchasing hard drives but then it is important. SyQuest is a big OEM.

off hook communications: The modem's way of picking up a telephone receiver. "Off hook" produces a busy signal on the phone line.

offline communications: The state of not being connected to another computer. Used to describe your computer when it is performing actions that do not depend upon being connected to another machine. A printer can be offline if it's turned off but still connected.

on hook communications: The modem's way of replacing a telephone receiver after it has lifted it "off hook". The phone can ring when it's "on hook".

online communications: Connected to another computer, usually a network, a BBS or an online service. Any device that is connected and ready to be used is online.

online service communications: A company offering a service for a regular fee. Some of the popular ones are CompuServe, America Online, Delphi, GENie and eWorld. You can read the latest news, download software, engage in real-time conversations, post messages, opinions and classified ads, send and receive e-mail, do research, meet people, it's really too wonderful. To get connected online you need an account with the provider, a modem and communications software (some services provide the latter).

operating system system software: Software which provides the means by which your computer runs applications, copies disks, runs hard drives, prints documents, and so on. On a network, the operating system allocates the computer to each user in an equitable manner. The Macintosh's OS is the System and Finder and other stuff in the System Folder, and the programming in the ROM chips, called the Toolbox.

optical disc storage: A disc (not disk ... tsf) that is read and written to using light instead of magnetism. Their great advantage is that since the light beam is smaller than the magnetic flux path, they can hold much more data—as in a hundred times more! CD-ROMS are the most popular kind. Optical discs that behave just like floppies are not yet a reality, but two types come close: the WORM (write once, read many), used for archiving, and the magneto-optical disc, which is a combination of technologies as the name implies.

outline font output: Fonts that uses mathematical descriptions of each character rather than bitmapped images. Outline fonts can be viewed and printed at any size and at any resolution. The two types of outline fonts in the Mac world are PostScript and TrueType, although the math is different. When an outline font is printed, the equations are interpreted and a bitmap is created (rasterized) at the resolution of the printer.

owner networking: The user who created a folder on a file server. In AppleShare and System 7's Publish and Subscribe, only the owner can open folders she creates unless she gives access privileges to others.

packet networking: A series of bytes sent as a group over a network. A packet includes data plus a source and destination address and possibly notes about rejoining the data with other segments sent in separate packets. Networks break data into packets so that lots of computers can share the lines nearly simultaneously.

parallel processing industry: More than one processor working on the same problem at the same time or working on separate parts of a

problem at the same time. A more powerful alternative than a single processor (which most computers use), regardless of how fast that single chip may be. Surprisingly, it uses cheaper hardware. Some schemes, called massively parallel processing, use thousands of processors. Programming for this environment is very difficult.

PARC industry: (Palo Alto Research Center) A research lab run by Xerox where the basic ground rules of the graphical interface were developed almost twenty years ago. These first rules were then implemented in Xerox's Star computer, developed by their Office Products Division. The Star was one of the inspirations for the original Mac when Steve Jobs toured the center and became enamored with the interface. PARC also developed laser printers, Ethernet, PostScript and object-oriented programming.

parity communications: Error checking at a basic level, where every byte has some self-checking number attached to it. Parity checking can be used in hardware for maintaining information in RAM chips. Telecommunications programs make use of more efficient "block" checking (or more advanced algorithms) although parity must still be matched in a session for transfer to take place correctly. Host communication in the BBS world omits parity checking (no parity). If you are using 8-bit data, use "no parity" or "ignore parity".

partition storage: A subdivision in memory or on a hard drive. Partitions are areas that are treated separately even though they are on the same drive physically. They are technically called "volumes." You'll even get a separate icon on the desktop for each partition. In RAM, partitions are simply amount of memory reserved for use by particular applications. You can change the size of an application's memory partition in its Get Info box, accessible from the desktop.

Pascal programming: A language created by a Swiss computer scientist named Niklaus Wirth and developed at UC San Diego that was popular at the time the Mac was being created. It's much harder than HyperTalk, but yields faster programs. The Mac's operating system and Toolbox were written in Pascal, but lately Apple has begun using the language C instead.

Paste interface: Taking whatever is in the Clipboard and transferring it into the current selection. The contents of the Clipboard can be text, pictures or anything.

patch programming: A term for a minor modification to existing software.

pathname programming: A list of names that tells you where an application or document is. The first part of the pathname is the name of the volume (disk or other device), followed by the sequence of nested folders which lead to the file itself. The parts of a pathname are separated by colons (:), which is why you can't use a colon in the name of a folder. The entire pathname can be up to 255 characters long. As you navigate your way to the file, you move along the path.

PCI hardware: (Peripheral Component Interconnect) A new type of expansion slot and protocol which will replace NuBus starting with the second-generation Power Macs.

PCL output: (Printer Control Language) A set of commands by Hewlett-Packard used to control its LaserJet and DeskJet printers. PCL has evolved over time; to the current Level 5. While not a PostScript replacement, it is becoming very sophisticated.

PDS hardware: (Processor Direct Slot) A slot that accepts expansion cards and connects them directly to the processor chip. These cards can enhance CPU performance or provide video signal access among other functions. PDS cards from different Mac models may not be compatible.

peripheral hardware: Any hardware that attaches to the computer. Modems, scanners, CD-ROM drives and printers are all peripherals.

pica output: A typesetting measurement. 1 pica equals 12 points, 1/6th inch or about .167 inch. Type size and line spacing is measured in points, line length in picas.

PICS multimedia: An old standard for compiling Mac-created animation files (as a series of PICT images), superseded by QuickTime.

PICT output: A file format for storing pictures. PICT files can contain either bitmapped or object graphics. PICT files can be read by many applications. Screen shots created by Command-Shift-3 use PICT images, as does the Scrapbook. PICT2 is an extension of the PICT format that can handle more colors at higher resolution although files are usually labeled PICT. Unfortunately, PICT files are of limited precision and reliability. PostScript is far better for most printed graphics.

PIM applications: (Personal Information Manager). Software that converts your Mac into a very expensive name-and-address manager, calendar, or the like. See also Newton.

Pink system software: Code name for the operating system of the future (1995), being jointly created by Apple and IBM through their Taligent joint-venture. Theoretically it will work on many different platforms.

pixel display: The smallest dot that can be displayed on the screen or a printed page. On the 9" Classic screen, each pixel is 1/72nd of an inch on a side. On a LaserWriter, one pixel is 1/300th of an inch on a side. Pixels on color monitors are composed of three spots, red, blue and green.

platform hardware: A buzzword for a computer and its peripheral devices (like a printer or disk drive) which together can run software.

PMMU hardware: (Paged Memory Management Unit) A circuit that controls sections of RAM, necessary for multi-tasking and 32-bit addressing under System 7. The 68551 is a PMMU chip that you can install into a 68020 Mac that has a socket for it, such as a Mac II. This circuit is part of the 68030, 68040 and PowerPC processors.

point output: The unit of measure that typesetters have used for many years to measure the size of type and space between the lines. There are 72 points in one inch, and 72 dots per inch on the original 9" Mac screen. That was not an accident.

pop-up menu interface: A menu that doesn't pull down from the menu bar but which otherwise acts like a menu. Pop-up menus sometimes show up in surprising and unconventional places.

port: 1. *communications* (noun) A small plug on the back of the computer into which you connect cables. The Mac makes this easy by giving you a picture above the port as a clue to what should go into the socket. Types include serial, parallel, SCSI, ADB, MIDI and many more. Each port has its particular protocol for information transfer. 2. *programming* (verb) Rewriting an application so it runs on a computer system for which it was not originally written. A good port adapts the application to the new computer; a bad port makes your computer look like another brand.

PostScript output: A popular programming language for defining complex graphics at any resolution, developed by Adobe Systems. This is the page-description language the LaserWriter printers use to print high resolution graphics and text. It has become an industry standard. If you are using 37-point outline type and it looks crummy on the screen, it will still print nice and smooth on a PostScript printer. This type of printer has a built-in PostScript processor that does the work of scaling and rasterizing the font. By contrast, with TrueType the Mac's processor does all the work of scaling the font for both the printer and screen. PostScript has been updated to PostScript Level 2, but the original version is installed on millions of machines so don't worry about compatibility. PostScript clones (compatible systems) also exist.

PostScript Fax output: Adobe's fax protocol produces superior output on plain paper from compatible printers. Supports CCITT Group III protocol and LZW compression.

PostScript Level 2 output: Adobe's second generation of its page-description language released in 1994. It features better handling of color, wider selection of fonts, faxing, higher-resolution output and compression and decompression.

PostScript printer output: A printer that can interpret the graphics and fonts that are written in the PostScript language. Not all laser printers can read PostScript. Just because a printer has high resolution doesn't mean it is PostScript (for example, the Apple StyleWriter). Usually if a printer is not a PostScript printer, it is a QuickDraw printer.

Power Mac hardware: Generic model name for Macs using the PowerPC processors.

power supply hardware: The box in the computer (outside, for PowerBooks) that converts line voltage (AC power) to low-voltage DC needed by the computer's components.

power user programming: Once you start using keyboard commands, install a few extensions, create a macro or two, and start throwing around words like SCSI and PostScript, you can consider yourself a power user. Say words like bandwidth, Apple events, and 32-bit clean in mixed company and you will really get respect.

PowerPC hardware: Processor chips developed jointly by Apple, IBM and Intel for the next generation of Macs and others. The PowerPC family is a RISC chip which should run much faster and use less power (and cost less) than the Motorola 680x0 family used in Macs from the beginning. Initial models include the 600, 601, 602 and 603. The 603 is expected to be used in low-end desktop Macs and portable Power Macs.

PRAM hardware: (Parameter Random Access Memory) pronounced "PEE-ram". A small amount of memory maintained by a battery

or two that remembers the date and other Control Panel settings. If this information gets messed up, it can really confuse the Mac. You can rebuild the PRAM by "zapping" it. Under System 6 you zap it by holding down Command-Option-Shift while selecting the Control Panel from the Apple menu. Under System 7, hold down Command-Option-P-R at startup and wait til you hear it ping and reboot. The batteries in the Mac 128 through the Mac SE/30 are removable, but many of the ones in later Macs are soldered in.

preferences system software: Files that are created by most software applications (and the Finder) to store default settings for the options you may choose as you customize the program's environment. Under System 6, they are stored in a variety of places, but System 7 gives them all a home in the Preferences folder inside the System Folder. If your program starts acting strangely, one remedy is to throw the preferences file into the trash, forcing the program to create a fresh one.

printer output: Hardware that prints the information in the computer onto paper.

printer driver output: A small file that allows your Mac to talk to a printer. Several come with your operating system disks, but others are also available which work with specific programs or printers. Sometimes on a network where a printer is shared, different users will have different versions of the printer driver. This can cause a "laser war" as the printer resets itself differently after each job.

processor hardware: A "computer-on-a-chip" that calculates things—as opposed to memory chips which store things. Processors are made up of incredibly vast and small electronic circuits containing thousands of transistors and other components. Two types of processor architecture are CISC and RISC.

programmers switch programming: The little piece of plastic with two tabs that came with your computer if you have an older Mac. It mounts on the case and can bail you out when the computer freezes. Apple told you not to install it unless you were a serious programmer, but they lied. The button with the triangle is the reset switch; the other one is the interrupt switch.

protocol industry: Any set of rules for exchanging information.

public domain industry: Any created work, including software, that the public has every right to copy and use in any way they see fit. The authors retain no rights or liabilities, either because they've relinquished them or because they've been dead for a while. Often used incorrectly to describe copyrighted, Publicly Distributable software for your computer.

Publish and Subscribe system software: A new technology by Apple, built into System 7, that allows an application that supports it to make a document's data available for use by other documents - including those by other applications. The way it works is that you "publish" special files called "editions" (really, you just save them) that contain data you expect to update from time to time. You then cause other documents to "subscribe" to the editions and when a new edition comes out, you may choose to have

the subscribers incorporate the new data. This system is useful on networks where more than one person is using data from a single document.

QuickDraw system software: A set of software routines built into the Mac's ROM (read-only memory) for drawing graphics either onto screen or onto a printed page. 32-bit QuickDraw is a full-color extension to QuickDraw.

QuickDraw printer output: Not really a type of printer, rather any printer that cannot read PostScript. A "QuickDraw printer" relies on its printer driver to use the QuickDraw routines in the Mac's operating system to recreate what it sees on the screen. That's the *raison d'être* for Adobe Type Manager. ATM makes Type 1 PostScript typefaces clear and relatively smooth on the screen; thus, when they print to a non-PostScript printer, they look good on the page. Apple solved the problem another way with the creation of TrueType fonts, which print beautifully on an ordinary printer. The trick is that the Mac does the work of scaling and rasterizing the image.

QuickDraw GX system software: An updated, more powerful set of routines for typesetting and 3-D graphics due out in late 1994 (as part of System 7.5) that will take the form of a System Extension. Under QuickDraw GX, PostScript Type 1 fonts will be treated as equals with TrueType. It promises to be a major improvement in the way the Mac handles all kinds of graphics in any and all applications.

QuickTime multimedia: An extension from Apple that enables third-party applications to record and playback sounds and movies. QuickTime cleverly adjusts the playback speed according to the capabilities of the hardware in your Mac. It has the JPEG compression and decompression code built-in and makes it available for graphics applications as well. The QuickTime extension is part of System 7 (drop it into the System Folder to install it), and runs only on Macs with at least a 68020 processor.

QWERTY interface: The standard arrangement of the keys on a keyboard. QWERTY (named after the first six characters on the top row of keys) is awkward and makes typing difficult. Typewriter keys were laid out this way to purposely slow down typing so the keys wouldn't jam.

radio button interface: A button allowing you to select one option from among many. Named for the push buttons on your car radio.

RAM hardware: (Random Access Memory) The temporary memory in which a computer stores information while it's running. Ordinary RAM is volatile—it loses its content when the power goes off. RAM is also extremely fast. Under System 7 you can get a good idea of how your Mac's RAM is allocated at any one time by choosing "About This Macintosh" from the Apple Menu when you're on the desktop (aka the Finder). You can change the amount of RAM reserved for each program in the Get Info window, also available from the desktop.

RAM cache system software: A special area of RAM which can be used to store informa-

tion which your Mac's processor needs frequently. The info most recently used gets stored in the cache; the computer looks there to see if still has the info you are requesting or has to go get it more slowly from the main RAM or the hard drive.

read-only storage: A file or a disk is read-only when you can look at and print its contents, but cannot save changes to it. Often you may think you can, because the file lets you select and edit text, but you won't be allowed to Save. Locking a disk or file will make it read-only. CD-ROMs are read-only. Certain parts of the Mac's inner workings are read-only, such as the ROM chip.

ReadMe applications: A small file on most new software disks which describe what's on the disk, how to install it, and give details of any last minute changes. Apple's ReadMe documents are in Teach Text format, others often use text-only format. A variant on the term is Read Me First.

record applications: One set of related information in a database. In an address book, all the information about each person (name, address, phone and so on) comprises one record. The individual components of a record are held in fields; every record in one database has the same fields (filled or empty). A record is analogous to a row in a spreadsheet.

redraw display: When you move an object across the screen, scroll, or change windows, all or part of the screen has to be redrawn. The Mac has to figure out where everything has moved to and redraw them in their new places. This can take a lot of time with complex text or color images (hello Photoshop). Some applications allow you to delay redraw. You can also force a redraw in various ways. Other applications let you work in a lower-resolution mode to speed redraw. As processors become faster and stronger this issue will diminish.

refresh rate display: The speed at which the video screen is redrawn. Faster is better. The original 9" Mac screens refresh at 66 Hz (66 cycles per second), which is much faster than most TVs. Most good monitors refresh at 70-75 Hz. Of course, a fast video redraw still has to wait for software to come up with a new picture for it to draw, which is where processor speed matters most.

region programming: Any arbitrary set of pixels treated as one object. You don't need to know this, but Bill Atkinson's patented method of handling regions is one of the most important pieces of QuickDraw.

relational database applications: A database application where more than one file can be linked together, such as a customer list and an order list linked by a customer number. You can program all kinds of fancy functions; for example, as you type in the customer name the address and other info automatically pop into the right fields on the order form. Relational databases are made of files and produce output called reports. They are a must for serious business work. These applications, such as 4th Dimension, are harder to use and cost more than flat-file databases, but they are very powerful.

render display: The creation of a simulated three-dimensional object by taking a model and

adding surface textures and lighting effects such as reflections and shadows. Needless to say, this takes a lot of computer muscle and time. The dinosaurs in Jurassic Park were rendered on monster workstations from Silicon Graphics, although they were modeled on Macs.

ResEdit programming: (Short for resource editor) A program from Apple which allows you to modify resources graphically. You can edit icons, menus, dialog boxes or get deep into the hexadecimal world of software. The current version is ResEdit 2.1.1, which handles resources in System 7. Not for beginners or the faint of heart. BMUG publishes "Zen and the Art of Resource Editing", an excellent primer. Always always work on a copy of the resource.

reset switch programming: The button with the triangle on it that is part of the programmers switch. Use it as a last resort if the Mac freezes. It's better than turning off the computer. But if you're using System 7 try a force-quit first by typing Command-Option-Escape to get back to the Finder, where you should then restart the computer.

resident font output: Fonts that come built into the ROMs in a printer. With resident PostScript fonts you also get a disk with the bitmapped screen versions to put on your computer.

resolution output: A measurement of the clarity and sharpness of a screen or printed document. Resolution is measured in dpi (dots per inch). The greater the dpi the higher the resolution and the smoother the graphics and text will be. A Classic Mac screen has a resolution of 72 dpi, which is the standard upon which software is written. Some monitors deviate from 72 dpi, so documents may look larger or smaller than they will print out. Check the application's ruler. A LaserWriter has a resolution of 300 dpi while a Linotronic can go up to 2540 dpi. Resolution in halftones is measured in lines (of dots) per inch, which must be converted to dpi by a sophisticated algorithm such as PostScript.

resource programming: One of Mac's greatest innovations when it came out in 1984. Resources are small chunks of program code that can be used over and over by applications. Every element of the Mac interface which we have come to know and love is a resource. Menus, icons, cursors, keyboard layouts, and many other things are resources. System software is largely composed of resources. Programs written for the Mac usually "borrow" system resources in order to generate their own interface. Any file or program running on the Mac has the potential to contain its own resources, in a section of the file known as the "resource fork". There is a parallel portion of the file called the "data fork" where the actual numeric and textual data lives.

resource fork programming: A part of an application where the programming instructions specific to that application are stored. The resource fork is composed of separate resource packages, like volumes in an encyclopedia. A document can also have a resource fork, if it really wants one.

restart system software: A command in the Finder's Special menu that performs the shutdown that you normally do at the end of the day,

then immediately reloads the operating system and Finder like it was the next morning. You should restart the computer after you've installed a new extension or Control Panel since those things are activated as the computer boots up. You should also restart if the computer is acting funny or if you've had a freeze or other system crash from which you've been able to get back to the desktop (by pressing Command-Option-Escape). Restarting is much easier on the machine than turning the power off and back on.

return key interface: Just like on a typewriter, the Mac's Return key ends one line and starts another. Weirdly called "carriage return" by some people who seem to not realize that computers don't have paper carriages. In dialog boxes, typing Return will often perform the default action, such as opening the selected file in an Open... dialog. In telecommunications, you sometime must type Return at the end of every command in order to send it, and often insert a return character after every 80 (or fewer) characters. A return character is often used as a delimiter (separator) of whole records in a database or lines in a spreadsheet when exporting.

RGB display: (Red, Green, Blue) A type of monitor that accepts separate signals for red, blue, green and black. Your VCR combines its video information into a composite signal, which reduces the quality of the image due to its limited bandwidth and the need to combine and separate the color information. An RGB monitor, relieved of those burdens, is capable of higher sharpness and purer colors.

RIP output: (Raster Image Processor) The computer inside PostScript laser printers that convert the graphics instructions into high-resolution bit maps before the printing engine places those bitmaps on the page. When a non-PostScript printer has to print a Type 1 PostScript font, ATM software rasterizes the font inside the Mac. With TrueType (System 7), the Mac's processor and software accomplish similar RIP chores.

RISC hardware: (Reduced instruction set computing) - Processor architecture that runs much faster by relying on a reduced set of simplified instructions. The goal is that one CPU instruction can be performed every clock cycle. Although more instructions (therefore longer programs) are necessary to carry out complex processor tasks, RISC still is faster because the bulk of all computing is simple instructions. Apple's new PowerPCs are RISC processors, and it is the prospect of greatly increased speed (as well as lower cost) that drove the decision to change from the CISC Motorola 680x0 line.

ROM system software: (Read Only Memory) The instructions and data built into the chips of your computer that cannot be changed. This data differentiates your machine from other computers (which have different instructions and data). The Macintosh ROMs have grown with each generation - the original Mac has 64 kilobytes, the Mac Plus has 128K, the Mac SE and Mac II each have 256K (the ROMs are different in these two - the Mac II truly has 256K of instructions and data, the Mac SE has only about 170K — the rest are pictures of the designers). The newest Macs have 1024 K of ROM. Every computer has some kind of ROM, at least to tell it what to do when the power first comes on. Even your

microwave oven has a ROM chip. Maybe your washing machine, too.

router networking: A combination of hardware and a software-referee that divides a busy network into smaller networks (called zones) and keeps the information in those networks separate except when necessary. Routers are used when the amount of information being transferred over the network is too large to be easily carried to all parts of the network.

RS-232C communications: A standard for communication between computers and peripheral devices. The Mac uses RS-422A (which is different but fully compatible) to connect some devices. The types of connector over which RS-whatever travels can vary substantially.

RS-422A communications: A Mac standard for communication between computers and peripheral devices via a serial port. RS-232C is different but fully compatible. This standard is used with a variety of physical connectors.

RTF output: (Rich Text Format) A file format by Microsoft that encodes all manner of text formatting information (from text fonts and styles to paragraph indentation to footnotes) amongst the text to be formatted. An RTF file consists entirely of ASCII characters so it may be transmitted easily to any type of computer (hint: blue ones) that has software capable of interpreting RTF. Many word processors contain RTF writers to create RTF files, and RTF readers to reformat text from elsewhere.

run-time version programming: Software that allows a document to be run independently of its original application. Many applications (from programming languages to databases) allow users to write programs, but won't run without the parent application. A run-time engine (the code that accomplishes this feat) removes the dependency and allows documents to run alone.

SANE programming: (Standard Apple Numeric Environment) Apple's implementation of the standards for mathematical computation developed by the IEEE (Institute of Electrical and Electronic Engineers). Using SANE results in highly accurate, predictable, reproducible math. It takes time, though. Some applications have their own routines that are much faster, with the trade-off being that they are less precise.

sans serif output: A typeface without serifs (the little bars at the ends of letters) such as Helvetica. Sans serif typefaces look clean but are harder to read at small sizes.

save storage: Storing information so that it is not lost if you turn off your computer (or if there is a power failure or system crash). Normally you save to a disk or some other medium.

scanner input: A piece of hardware that minutely scans an image, reading dark, light and colored areas as a stream of digital data. You put a photograph, a drawing or even a three-dimensional object on the scanner, close the lid and push a button and the machine sends a copy of it to the computer. It's sort of like a copier. Some scanners are handheld and you roll the little machine over the top of the image. There are also video scanners that can input live stuff. The scanning software usually offers you several file format options. Unless you have a clear idea

and a good reason not to, always save scanned images as TIFFs.

Scrapbook system software: A desk accessory from Apple into which you can paste text or pictures for use later. It is different from the Clipboard because it saves the information to disk, so it stays around after you shut the computer off. A graphic that you put into the Scrapbook will be converted to PICT format, so make sure that this is OK.

screen dump system software: A picture of the screen in PICT format under System 7, bit-map (MacPaint) format previously. A way to capture pictures of icons, windows, menus, etc., and an indispensable tool for writing articles about things Macintosh. Holding down Command-Shift-3 takes a picture of the screen at that moment, producing a screen dump.

screen saver silly software: A utility program that prevents screen burn-in by creating animated effects while you are not working. Effects range from moving patterns to flying toasters. If you leave an image on the screen for an extended period of time, it will eventually burn in and leave a permanent shadow.

script programming: A user-definable set of instructions for use by an application. Two common script systems are the HyperTalk programming language used by HyperCard and AppleScript for Apple events. Really a high-level programming language, but the term "programming" scares novices.

scroll bar interface: A rectangular bar that may be along the right or bottom of a window. If the scroll bar is empty, the window is showing the entire document. If the scroll bar is active, the window is showing only a part of the document. An active scroll bar is shaded and contains a scroll box in the middle and a scroll arrow at either end. Clicking or dragging in the scroll bar causes the view of the document to change.

SCSI storage: (Small Computer Systems Interface) pronounced "scuzzy". A standard for connecting computers and peripheral devices which allows information to be exchanged very quickly. The standard also allows for some communication between devices without the main processor doing anything, although this capability is not used often. The physical SCSI connectors have either 50-pins (the industry standard) or 25-pins (the Apple standard). A revision called SCSI-2 now exists.

SCSI ID storage: A number from zero to seven that identifies each device connected via their SCSI ports. The Mac itself is seven, and internal hard drives are usually zero. The ID is also called the SCSI address.

SCSI-2 storage: A revised version of the SCSI protocol that can handle 16 or 32 bits at a time. The result is a substantial increase in speed.

sector storage: The smallest subdivision of a disk (or other storage medium) ranging in size from 512 bytes on a floppy up to thousands of bytes on a hard disk. The computer reads and writes nothing smaller than one sector, for the sake of speedy operation. A bad sector cannot hold information accurately.

selection interface: The information affected by the next command. Selected text is usu-

ally highlighted, graphic objects sprout handles, icons switch to inverse video. The text insertion point is also a selection.

selection rectangle interface: An area of the screen shown by a rectangle of dashed lines that is created when you push the mouse button down, hold it and then drag the mouse. A selection rectangle is available in the Finder and most graphics programs. A variation is the lasso tool, which snaps tight around the edges of the selected objects when you release the button, as opposed to the rectangle which retains its shape.

serial transmission communications: A way to transfer information in sequence on a single channel, as opposed to in parallel. Usually there is also a return channel.

serif output: The little ledges or other embellishments on the ends of letters which make them easier to read.

server networking: One-half of a two-part software system. The other half is the client software. Your computer is the host and others log on as its clients. This relationship is used on the Internet and BBS's such as Planet BMUG. A file server, by contrast, is a networked computer used as a central hard drive.

Shareware industry: Publicly Distributable software that you can use for a time to determine whether you like or need it, and then pay for. Try before you buy software, usually not marketed through traditional channels but available from users groups, bulletin board services, and friends. Shareware is generally pretty cheap (\$5 to \$20) and you really should pay it to encourage other people to create nice things for us.

SIMM hardware: (Single Inline Memory Module) A small plastic strip holding memory chips which fits into a Mac (except the Portable and PowerBooks) and gives it more RAM.

single sided storage: An obsolete description of a floppy disk that has two sides but where only one side has been tested by the factory. Original Macs used only one side of the disk to store 400 kilobytes and you might have some of those old disks laying around. The existence of a button offering to initialize a disk as single-sided is an extreme example of backwards compatibility.

SingleFinder system software: A passé term for the normal Finder as opposed to MultiFinder under System 6.

size box interface: The small box in the lower right corner of most windows which allows you to change the size of the window when you click on it and drag. Some applications will not let you drag with complete freedom; they restrict the window size.

slot hardware: The place you plug a card into inside the computer. Usually there's a long thin connector with numerous metal contacts that match traces on the edge of the card. Different Macs take different types of cards, so be careful.

smart quotes output: Curly "quotation marks" (and apostrophe's) that face in opposite directions at either end of the quotation (as used here). The mark of distinction. Many word processors and other applications have a checkbox in the preferences section to always substitute smart quotes from the plain

ones the Mac keyboard supplies. If yours can't do this, use the left and right brackets in combination with the Option and Shift keys to get what you want. Experiment!

snd programming: A file format for sounds on the Mac. It comes in two varieties: snd 1, for sounds used by the Mac II; and snd 2, for sounds used by HyperCard. HyperCard 2 can use both formats.

SneakerNet networking: The world's simplest network: none! Just put data on a floppy or other media and carry it between machines. Often the network of last resort.

SNMP networking: (Simple Network Management Protocol) - Invented in the late 1980's to manage the Internet, it has become a de facto standard for network management. Although included by Apple in its TCP/IP and AppleTalk packages, real Mac implementations are just beginning to come into the marketplace.

soft hyphen output: A hyphen that is invisible unless the word falls at the end of the line, in which case the computer will break the word and show the hyphen.

soft return output: A feature of some word processors and page layout programs that forces a line break but doesn't start a new paragraph. This is what the computer does when it wordwraps.

software applications: Hardware is the stuff you can touch. Software is the invisible stuff, the programming, the energy coursing through the chips that makes the computer work. Software includes the applications, the documents and the operating system, in memory or stored on a disk or drive.

software piracy industry: Making copies of commercially-sold software you did not purchase, also known as stealing. The term "pirate" typically refers to those who additively collect software simply for the pleasure of having lots of it.

special character output: Generic term for non-alphanumeric characters which have special characteristics, either for enhanced typography or for some purpose special to the computer.

spooler output: Software and/or hardware that takes over a task so that the CPU is not tied up. Most often associated with printers where the spooler intercepts the data being sent to the printer and stashes it in RAM or on disk and sends it to the printer at a slow rate the printer can accept. That way you can resume using your computer more quickly. Apple uses the term "print server". The term comes from an old IBM acronym, "Simultaneous Peripheral Operation On Line".

spreadsheet applications: An electronic ledger used primarily for calculating numbers. Spreadsheets are made up of cells arranged in rows and columns. Cells can hold data or formulas that take information from other cells, do calculations on it and display the result. Some spreadsheets, such as Microsoft Excel, also have relational database capabilities, do fancy graphing, page layout and even some word processing.

SQL networking: (Structured Query Language) Database protocol for interapplication communication.

stack programming: A document created by HyperCard. It works as a series of cards (hence the term stack, as in stack of cards) and is meant to be viewed by others on the computer. As you flip through the cards, you are apt to find anything: sounds, animation, music, and ways to interact. Many CD-ROMs use HyperCard stacks as front ends for navigation and control.

stand-alone programming: A program that can be run on its own. A correctly written and compiled program is a stand-alone, as is a demo program with a run-time engine.

start bit communications: The very small piece of information used by a computer to signal that it is about to send a larger piece information. It is needed in situations where sending a known amount of information takes an unknown amount of time, such as when using a modem to communicate over phone lines.

Startup Disk system software: 1. A Control Panel that you use to designate which disk the Mac will use to start up (load and run the operating system and the Finder). This situation exists when there are multiple hard drives containing System Folders connected a Mac. The startup volume's icon will appear in the top-right corner of the desktop. 2. (lower case) Any floppy or hard drive that has a System Folder on it that you can use to get your Mac started.

startup volume system software: The disk or drive whose System and Finder the Mac uses to boot up. The startup volume always puts its icon in the top-right corner of the desktop. You can change the startup disk by using the Startup Disk Control Panel.

stationery pad system software: A document which instead of being opened by its application is copied, and the copy is opened for you to work on. Useful for standard formats you would like to reuse. You can make any document a stationery pad via the Get Info box accessible from the Finder. Many programs allow you to save a document as a stationery pad.

stop bit communications: When the computer has stopped sending a larger piece information it sends this very small piece of information. It is needed where sending a known amount of information takes an unknown amount of time.

StuffIt communications: A Shareware file compression utility written by Raymond Lau when he was in high school and used by virtually every Mac telecommunicator to reduce the size of files before spending time uploading them. The plain version is known as StuffIt Lite. StuffIt Deluxe is a more advanced version sold commercially. It has more features than StuffIt Lite, but both use the same compression format and algorithms. Names of files compressed by StuffIt should be tagged with a ".SIT" suffix, so others will know how to uncompress them. StuffIt can also decompress files compressed with PackIt, an older utility (those files end with the ".PIT" suffix).

style sheet output: A list of the text styles and format settings you have applied (or intend to apply) to each single paragraph. You can then apply the same style wherever you wish. Best of all, if you make a change in the stylesheet the change is automatically applied to all paragraphs having that style. A

wonderful feature of better word processors and all page layout programs.

suitcase system software: 1. A file for storing fonts or desk accessories. In System 7 if you double-click on a suitcase, it opens up to a window with an entry for each font size, and you can double-click each one to take a look at it. In System 6, if you double-click on a suitcase you'll launch the Font/DA Mover where you can create suitcase files. In that program you can click on the name of a font to see it displayed on the screen. System 7 does not create suitcases, and it handles fonts and DAs singly. Under System 7.1 a new folder called the Font Folder lives in the System Folder. You drag fonts into that folder to install them. 2. Suitcase II, by Fifth Generation Software is a utility that works quickly and efficiently with a large number of fonts, DAs, sounds and fKeys.

SWIM hardware: (Super Woz Integrated Machine or Sanders Woz Integrated Machine) A floppy-drive controlling chip which can read IBM's PS/2 formatted disks.

SYLK applications: (Symbolic Link) A file format used to transfer information to and from spreadsheets and databases.

synchronous communications: A kind of information exchange controlled by timing, usually possible only with computers connected directly to each other. Synchronous transmissions are more controlled and more efficient.

SysOp communications: (System Operator) The person responsible for setting up and maintaining a BBS or online service.

System 6 system software: The culmination of Mac operating system development prior to the introduction of all-new System 7 in 1991. Some users prefer System 6, which is faster for some tasks on some Macs. System 6 takes up less RAM space than System 7 so it is better on 1 megabyte Macs. It supports multiple applications with MultiFinder. INITs come first and Font/DA Mover is used for resource management.

System 7 system software: Apple completely rewrote the operating system in 1990. System 7 has many improvements over previous systems. Among them is the ability to have as many programs running side by side—not yet true multi-tasking—as RAM will allow, and 32-bit addressing which allows access to far more RAM than the previous limit of 8 megabyte. The System Folder was organized and improved greatly: Fonts are installed by dragging them into the Fonts Folder under System 7.1. DA's live in the Apple Menu Items folder, where you can put aliases of the icons of your applications too. INITs, now called Extensions, live in their own folder inside the System Folder. System 7 supports Bubble Help, TrueType fonts, Apple Events and Inter-Application Communication. Most older applications run fine under System 7, but some have had conflicts and had to be rewritten for deep technical reasons.

System and Finder system software: The two main pieces of software required to operate a Mac. These two inseparable friends are almost always kept in a folder called the System Folder. There have been multiple revisions and upgrades to these; the latest versions are System 7.1 and Finder 7.1. You must have a System and a Finder (or a Finder re-

placement like Servant, PowerStation or Oasis) on any disk you use to start the Mac. You should have no more than one System and Finder on a hard drive.

System Folder applications: The loss of control of the Mac when something goes seriously wrong. Either you will see a very polite but disturbing notice on your screen with a picture of a bomb about to explode and an error code number, or things will just stop working. This disaster is most often caused by software. There are several remedies. Under System 7, you may be able to do a "force quit" by holding down the Command and Option keys and pressing the Escape key. Next, if you have the Programmers Switch installed, try hitting the reset button (with the triangle on it). If you succeed in getting back to the Finder you should choose Restart from the Special Menu to eliminate any lingering symptoms of the problem. If all else fails, you have to turn the Mac off and on again to regain control. Newer Macs allow you to execute a "warm boot" which means to restart the Mac without turning the power off. If your computer cannot even boot up because of a hardware problem, you may hear the dreaded "Chimes of Doom".

tab output: On manual typewriters literally a metal tab that momentarily stopped the travel of the carriage, used to create alignment inside the margins. Computers have expanded the function of the tab character. Now you can specify the alignment the text will take at the tab—right, center, left or decimal point—or attach leaders for better readability of tables. The tab key is also used to move from field to field in a database or where there are multiple text boxes in a dialog such as Page Setup. When exporting from a spreadsheet or database the tab is often used to delimit (separate) the cells in a row or fields in a record. You can see where the tabs are in a word processor by choosing a menu item such as "Show Invisibles" or "Show Paragraphs". A most useful character.

Taligent industry: A joint-venture by Apple and IBM formed a few years ago to oppose a common enemy, Microsoft. So far it has brought us the PowerPC chips (not a bad start) and soon will come the Pink operating system (or whatever code name it has these days).

tape drive storage: Hardware that encodes large amounts of data onto a type of cassette tape. Too slow to replace a hard drive, but relatively cheap backup.

TCP/IP networking: (Transmission Control Protocol/Internet Protocol) A set of rules for exchanging information between very different computers on a network. It has become a de facto standard.

TeachText system software: A very small 36K, word processor that comes with System software and allows you to read text documents. The Read Me documents on software disks are in TeachText format. TeachText for System 7 can view PICT documents and QuickTime movies. TeachText comes on many software disks, so it's easy to get more than one copy on your hard drive. You have no reason not to get rid of the duplicates.

tear-off interface: A menu or palette that you can drag down from the menu bar and leave floating on screen for access. Typically a torn-off menu or palette becomes a windoid.

telecommunications communications: The exchange of information in digital format (as opposed to voice) over phone lines.

telecommute communications: Working at home and sending your work to the office via your modem and fax. Hey, it's the lifestyle of the '00's!

terminal emulation communications: Telecommunications software that makes your computer impersonate a dumb terminal for the benefit of the other computer. A dumb terminal is just a screen and keyboard and little else.

termination storage: A kind of electronic shock-absorber that goes at the beginning and end of a series of peripherals (external hard drives, scanners, etc.) that are connected to a SCSI port using a single cable path. The rule of thumb is that the first and last device in a SCSI chain must be terminated to prevent the data from echoing back upon itself and getting jumbled up. Hooking up a SCSI chain can be tricky. The computer has an internal terminator, so that takes care of one end of the chain. But some peripheral devices have an internal terminator (to be switched on and off) and some don't and sometimes you have to dismantle the case to find out. An external terminator that looks like a connector without any wires may be necessary. A worse problem is that sometimes you have to rearrange the SCSI devices and terminators until everything works. That should keep the techies in business. One vital hint: be sure to turn off the power before disconnecting or connecting anything!

text box interface: The place(s) in a dialog box where you can type names, etc. Usually identified by a thin black outline and insertion point (flashing vertical bar).

text editor applications: An application or desk accessory that allows you to type letters and numbers, but which doesn't enable you to specify much formatting. The documents created by these are usually in text-only format.

text-only storage: A document which contains words but no formatting and which can be read by many different applications, even on other types of computers. A text-only file consists of ASCII characters only.

thesaurus applications: A compilation of words linked to each other. Synonyms and antonyms are linked, as are words similar in meaning. The granddaddy of them all is Peter Mark Roget's Thesaurus, first published in 1852, and unequalled since. There are electronic thesauri, but check out the original to enjoy a stupendous accomplishment. A thesaurus can also be a set of terms used for indexing or classification or a list of keywords.

third-height storage: A hard drive that is only about one inch tall — a perfect fit for laptops.

TIFF output: (Tagged Image File Format) A graphics format used for saving or creating high resolution bit maps and gray scale images. TIFFs were invented for scans. TIFFs can have from 1 to 24 bits per pixel and are often compressed. If the image is straight black-and-white, with no gray areas, save it as a line art TIFF. If the image has gray tones, such as a photograph or pencil or charcoal drawing, save it as a gray-scale or con-tone

TIFF. Halftones only apply to gray or color areas. A halftone breaks a gray area into dots that a printer can print. If the image is solid black-and-white, you don't need any sort of halftone. If your scanning software can create special effect halftones that you want to use, or if your printer is non-PostScript compatible, save as a halftone TIFF. If there is no special effect halftone that you need, don't bother saving it as a halftone - let the PostScript printer halftone it for you on the way out. Yes, all PostScript printers can take any gray or color and break it into lines per inch. An Apple LaserWriter halftones at 53 lpi; a Linotronic 300 halftones at 105 lpi.

tilde output: The little squiggly accent you see over the letter n in some Spanish words. Obtained on the Mac by typing Option-N and then immediately typing a plain n. This is how many diacritical marks and accents are typed on the Mac.

title bar interface: The space at the top of a window containing the name of the window, a close box and usually a zoom box. Clicking on this and dragging moves the whole window. Under System 7's Finder, Command-clicking on the title in the title bar gets you a menu of the hierarchy of folders in which the window is nested.

toggle interface: Change from off to on, selected to unselected, or vice versa.

Token Ring networking: A set of rules, developed by IBM, for exchanging information between computers that are connected with cables. Token ring networks can operate at speeds of 4 or 16 megabits per second, which are many times faster than normal AppleTalk networks. The token is actually a packet (like a small envelope) that is passed from computer to computer around the ring. If a computer has nothing to say, it passes the token on to the next computer. This strategy eliminates data collisions, which is what happens when two computers talk at the exact same time.

TokenTalk networking: Apple software that lets Macs connect to a Token Ring network.

Toolbox programming: A collection of programming routines built into the Mac ROMs. It is the Mac equivalent of the IBM PC's BIOS but is far more complex. As the Mac has evolved since 1984, some toolbox routines (including additions to, replacements of and improvements upon the ROM routines) are provided in the System file.

trackball interface: A captured ball that can be spun continuously in any direction used to move the cursor around the screen. It also has one or more buttons associated with it.

trackpad interface: A small, flat rectangular pad that Apple developed to replace the trackballs in PowerBooks. It uses capacitance-sensing like the touch-sensitive buttons in elevators, and has 387 points-per-inch sensitivity. Like the mouse, it is a relative-motion device - when you raise your finger and put it back anywhere on the pad, the cursor stays put.

TrueType output: Outline font technology co-developed by Apple and Microsoft and introduced with System 7. TrueType fonts produce smooth characters in any size or style on both the printer and the screen. Unlike

bitmaps, TrueType fonts don't come in specific point sizes. Unlike fonts, TrueType fonts are not composed of two parts. With TrueType, the Mac's processor does all the work of scaling the font for both the printer and screen, unlike PostScript, where the printer's processor does the work. TrueType is standard in the Windows operating environment. TrueType's biggest drawback is that is not part of a complete graphics language like PostScript.

Type 1 font output: There are two distinct formats for PostScript fonts: Type 1 and Type 3 (Type 2 was a proposed font technology that never made it). At first, Adobe Systems, Inc. had a monopoly on Type 1 fonts; they used a secret algorithm to produce them and wouldn't let anybody else have the algorithm, so everybody else had to make Type 3 fonts. Type 1 fonts are PostScript, and they are especially designed to print well at "low" resolutions (like 300 dpi). They print fast and clean on PostScript printers, and they can be scaled with Adobe Type Manager (ATM) to appear very smooth on your screen. In 1990 Adobe decided to publish the secret algorithm so that everyone (meaning font manufacturers) could create Type 1 fonts.

Type 3 font output: Typefaces that are made without Adobe System's proprietary technology. They tend to be less expensive and they often don't print as cleanly and smoothly, nor as fast, as Type 1 fonts. They also tend to be more graphic in nature; that is, many Type 3 fonts are very decorative, with gray shades, elaborate fills and fancy shadows. Now that the Type 1 font technology is known, Type 3 fonts aren't being created much.

typeset-quality output: Equal to or greater than 1,000 dots per inch resolution. The resolution at which the eye can no longer distinguish the very small dots that make up the printed letters or graphics.

Unix system software: A powerful operating system developed at Bell Labs in the 1960's. Unix is multi-tasking, since it was designed in the days when one mainframe or mini-computer had many users. Basic Unix commands are the same on all computers, which is to its credit, but they are quite user-unfriendly. It was written in the language C, so it can be linked to lots of different computers. Apple's version is called A/UX, but very few people own it, since it's a memory and disk-space hog. Unix is the OS on the Internet, so it will be around for a long time.

update industry: A minor improvement in software or hardware, often just bug fixes. These ought to be free, since they are akin to warranty repair service on your car. Updates are indicated by the decimal component of the version number, as in 2.5 replacing 2.3. Hardware updates usually involve driver software.

upgrade industry: A major improvement in software or hardware. Software upgrades occur when the publisher issues a new version of the product and makes it available at a reduced cost to existing owners. An upgrade should include whole new features and possibly a new file structure. Minor fixes are called updates, and ought to be free.

Upgrades are indicated by the integer component of the version number, as in 3.0 replacing 2.5. Hardware upgrades involve adding or exchanging existing equipment for newer, usually at full cost.

upload communications: Transferring a file from your computer to a remote computer, using a terminal program and a transfer protocol (for example, ZTerm and ZModem respectively).

user group industry: An organization such as BMUG of users of computers. They often have BBS's and some put out newsletters (boy do they!). You can join with like-minded individuals at regular meetings to hear about the latest developments, view software demonstrations, get help for problems, find out what your BBS pals actually look like (if you dare), express your views and schmooze.

utility applications: An application that does only a few things and which probably doesn't create a document. Most often utilities are applications which can perform maintenance functions on software and hardware (Norton Speed Disk), enhance workability (Suitcase II), or increase your computing pleasure (After Dark).

v.x communications: CCITT rules for transferring information over phone lines. By the way, bis (pronounced "biss") is Italian for the second version of something.

v.22 runs at 1200 baud, compatible with the Bell 212A standard used in the US and Canada.

v.22bis runs at 2400 baud. It includes automatic fallback to 1200 baud and compatibility with Bell 212A and v.22 modems. All 2400 baud modems for personal computers support this standard.

v.23 runs at 1200 baud with a 75 baud back channel. Used in Britain.

v.29 is the universal standard for 9600 baud fax machines.

v.32 runs at 4800 and 9600 baud. It includes automatic fallback to 4800 when line quality is poor. Note that the Hayes V-Series 9600 baud modem is not v.32 compatible.

v.32bis runs at 14400 baud with automatic fallback to 12000, 9600, 7200 and 4800. As line quality improves communications speed can also be increased to the next higher rate.

v.32TERBO is a non-CCITT standard for 19.2 kbps transfer, but it is not universally accepted by modem manufacturers.

v.FAST is a non-CCITT standard for 28.8 kbps data transfer.

v.34 is the protocol for 28.8 kbps modems.

v.42 is the CCITT standard for modem communication that defines negotiation for LAPM error control. It also includes support for MNP Levels 1-4 error correction.

v.42bis is an extension of v.42 that adds data compression to the v.42 correction protocols. Data transmission can be done in a number of ways since new error-checking protocols are being added on a regular basis. It can speed transfer by a factor of four, and is smart enough to not try to compress already-compressed files.

v.17 (not known if this is CCITT) an emerging standard for computer-to-computer fax transmission.

vaporware industry: Any computer product that is announced, and possibly even demonstrated at trade shows, but which is not released on time. Some programs continue for years at this stage. See Microsoft.

version number applications: The numbers after a program name which indicate its seniority. The higher the number, the more recent (and supposedly more capable) the program. Version numbers are typically given in ones and tenths, and occasionally in hundredths. It goes like this: "ProGram 1.4.3". The 1 means its the first version to be released to the public. The 4 means they've added features and upgraded that first version four times, but not overhauled it. The 3 means they've updated this, fourth revision of the first version, three times because of bugs or incompatibilities. Before software is released to the public, it's version numbers are prefixed by a letter. Apple follows this pattern: D for development (the earliest versions), A for alpha testing (still working on major bugs or features), and B for beta testing (most features working, still smoothing out rough edges), and sometimes FC for "final candidate" stage.

video card display: The card that controls the video display on your screen. You can get different kinds of video cards for different kinds of monitors that display different levels of grayscale or color. Basic video output is built in to the motherboard on most Macs, but for a better video display you need a separate card. Some cards plug into the PDS slot, but most are NuBus cards. Video accelerators are another thing to have if your software requires frequent redraws of huge video files—programs like Photoshop—because they relieve the CPU from handling all the video display chores.

videotex communications: The whipping boy of the information industry, videotex used to mean any information service accessed through computers that displayed pages of textual information on demand. It has come to mean any computer-based information service that displays anything on screen. Videotex systems were once thought of as the way normal people would get around to using computers, but so far, no service calling itself videotex has made it into the big time.

virtual memory system software: Using space on the hard drive as faux RAM. Virtual memory, which requires a PMMU, is a feature of System 7, available via a control panel, or it can be utilized via third-party software. Some memory-hungry programs, such as Photoshop, have their own virtual memory schemes. When a program is launched, the Mac creates a swap file on disk that is equal to the memory space the program uses (the number in the box on the Get Info... window). Virtual memory is best reserved for programs you occasionally run that need more RAM than you have. You should buy enough real RAM for your day-to-day needs.

virus applications: A bit of code written to do such things as: corrupt your System file, lock you out of your own machine, eat your applications and documents; they can even wipe out the contents of an entire hard drive. Viruses have sub-species named for the way they operate, such as worms and Trojan horses.

Viruses travel from computer to computer via floppy disks, networks and modems. You don't always know you have a virus; they often have delayed reaction time, so that you continue using the sick application until one day it eats itself. You'll know you have a virus when things start acting funny on your computer. Windows may not function properly, printing might not work right, files may be changed, programs may be "damaged". If you can suspect a virus, get virus-protection software and disinfect your hard drive and every single disk in your house and office. Then never let anyone put a disk into your computer without checking it first. The best package is one called Disinfectant. It will kill any virus (except HyperCard script viruses since they don't live in the resource fork), and it comes with an INIT that quietly checks any disk that you put into your machine. It is Freeware (yes, that's right, it's FREE), written by John Norstad at Northwestern University. He rewrites the program every time a new virus is discovered. The current version is 3.5. Disinfectant is available on many BBS's, from user groups and friends, and by mail from BMUG.

volume storage: All or part of a hard disk, floppy disk, tape drive or other storage device. If it appears on the upper right hand of the desktop and you can store files in it, it's a volume.

VT-100 communications: The lowest common denominator of computer terminals from the olden days. A screen and a keyboard. 80 characters per line on the screen with mandatory carriage returns after each line. Most telecommunications programs can emulate this type of terminal. Help, I'm stuck in the 1960s!

WAN networking: (Wide Area Network) Computers that are connected together across long distances and can exchange information. The computers need not be connected constantly to form a WAN. Nobody ever says this word, but people do write it.

WildCard applications: Code name for HyperCard.

windoid interface: The little windows used in some applications which have only a thin, light gray bar at the top and which float on top of the main application window. Tear-off menus typically become windoids.

window interface: The rectangular area that displays information on the desktop and through which you view documents. Every application (and every document) has its own window. You can open or close a window, move it around on the desktop, scroll through it if the document is larger than the window, and sometimes change its size and edit its contents. When windows are stacked slightly offset below and to the right of each other, they are said to be tiled. Some programs let you tile the windows automatically. It's been whispered that a very few insiders can create round windows on the Mac.

word processor applications: An application that lets you type on a computer and which has additional features including a choice of multiple fonts and styles, paragraph formatting and tab stops. A more powerful word processor has other helpful features such as automatic pagination, footnoting, indexing, style sheets, spell-checking, etc. My favorite is: no more white-out! If you want to get the most

out of your word processor, read "The Mac is Not a Typewriter" by Robin Williams.

word wrap output: The automatic moving of words from one line to the next when the line gets too long for the margins. This is one of the nice features which distinguishes a computer from a typewriter. You can customize the word-wrap of a document by putting in hard and soft returns and soft hyphens.

workstation hardware: Bigger/faster/more expensive than a microcomputer, smaller than a mini.

wristwatch interface: The shape of the cursor when the computer wants you to wait while it does something.

WYSIWYG interface: (What You See Is What You Get) The state when the display on your computer screen matches the image on the printer page, more or less.

XCMD programming: (Short for external command) A kind of resource that can be inserted into an application to extend the application's capabilities by giving it new commands. Originated in HyperCard but now used in other programs like MacroMind. A program called CompileIt! by Tom Pittman (Heizer Software) can convert HyperTalk scripts into XCMDs and is a wonderful way to begin to learn the Mac Toolbox and get a taste of Pascal.

XFCN programming: (Short for external function) A kind of resource that can be inserted into HyperCard stacks to extend their capabilities by giving them new functions. They differ from XCMDs only in that XFCNs return some information when used.

XModem communications: A set of rules for sending documents or applications from one computer to another in small blocks over phone lines. These pieces can be either 128-byte or 1K. The latter is called "1k-XModem" or sometimes "fast XModem". XModem/CRC adds another level of error checking. The original XModem was written by Ward Christiansen as part of a CP/M program but was brought into the real world by Kieth Petersen. XModem and XModem/CRC are slow transfer protocols compared to many others available.

XTND applications: A software technology developed by Claris that makes it possible to have a set of file-format translators that work with many different programs. For example, if you have an XTND translator for WordPerfect/Mac files, any program compatible with the XTND technology can use that translator to open WordPerfect files without needing to have its own knowledge of what they look like internally. It's a simple, efficient, modular way of doing things.

YModem communications: A file transfer protocol developed by Chuck Forsberg that is similar to XModem except that it uses 1K chunks, allows for multiple-file transfers, and includes much better error-checking. Recommended over XModem for speed, reliability and features. Called "Modem7" by some people. Note: a number of communications programs incorrectly use the term YModem but actually send using 1k-Xmodem. This practice is not proper and will result in failure when used with true YModem transfer.

YModem/G communications: A variation on the YModem transfer protocol that does not check the information being received for errors. Rather, it expects the hardware to do the error checking. It should be used only with "reliable" phone lines and modems supporting MNP or the US Robotics ARQ hardware error-checking methods, or v.42/v.42bis. YModem/G is among the fastest protocols, with the exception of newer versions of ZModem. If your modem supports MNP or ARQ, YModem/G should be your usual choice.

ZModem communications: Another telecommunications protocol by Chuck Forsberg. It is a "streamlining" protocol which sends variable size blocks of data with CRC-32 error checking, but does not wait for acknowledgment from the receiving computer. It assumes data is OK unless a repeat request is sent for a specific block. Slightly slower than YModem/G and 1k-XModem/G, ZModem should be considered when MNP is not available, or another batch transfer protocol cannot be used. ZModem has the unique capability to resume file transfers that have failed.

zone networking: One part of a large network. Zones are networks connected to other networks, but the information moving around the network stays inside its zone of origin unless it is addressed to a device in another zone.

zoom box interface: The little box in the upper right corner of most windows which, when clicked initially under System 6 expands the window to fill all or most of the available screen. Under System 7 it will expand the window to show as many of the items contained within it as it can. When clicked a second time, this box contracts the window back to its previous dimensions.

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