May / June 2001

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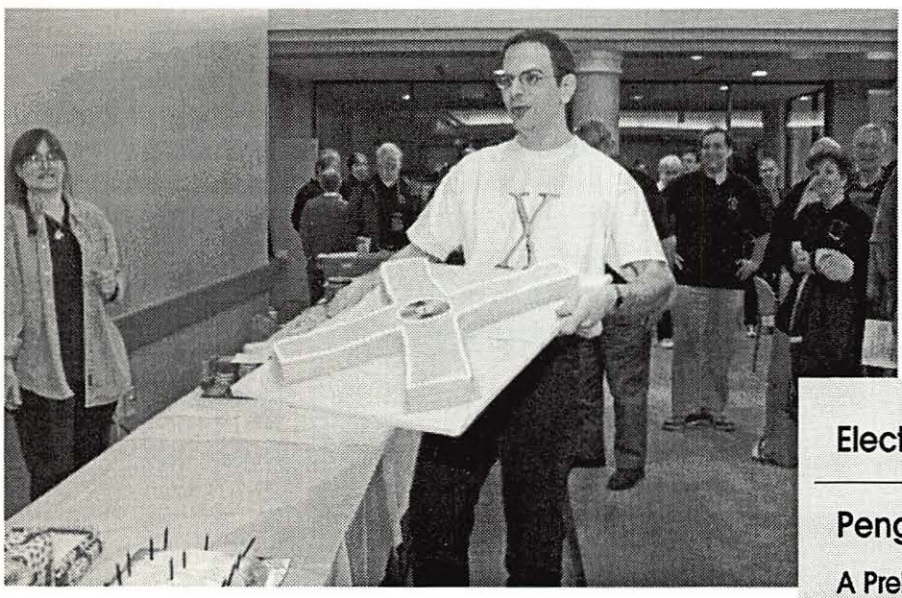
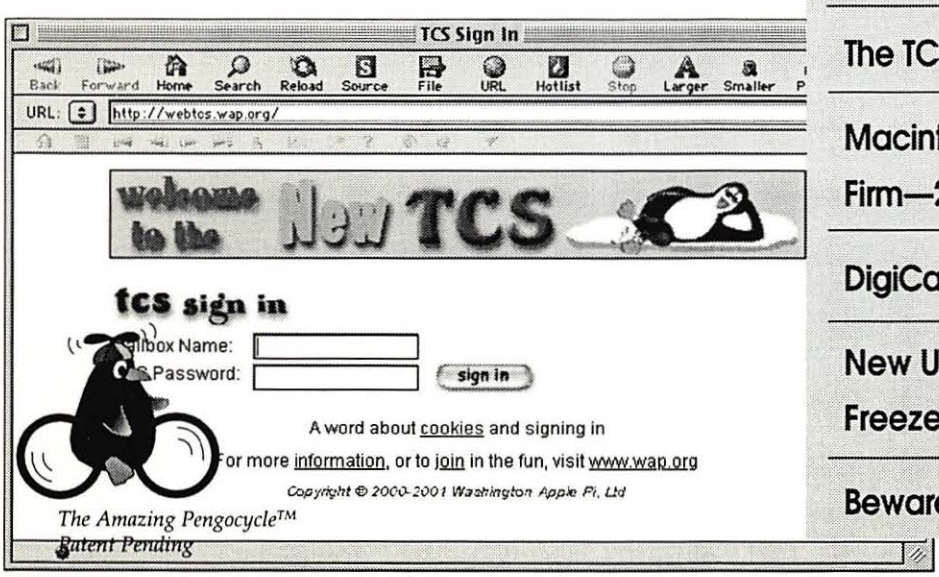
The Journal of Washington Apple Pi, Ltd.

# WASHINGTON APPLE PI

Volume 23, Number 3



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# washington Apple pi general meetings

9-11 a.m.

**April**

**Apr. 28, 2001**

**May**
(Note: earlier than usual)
**May 12, 2001**

Northern Virginia Comm. College
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8333 Little River Turnpike
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**Getting to NoVa:**
**take Exit 6 West**
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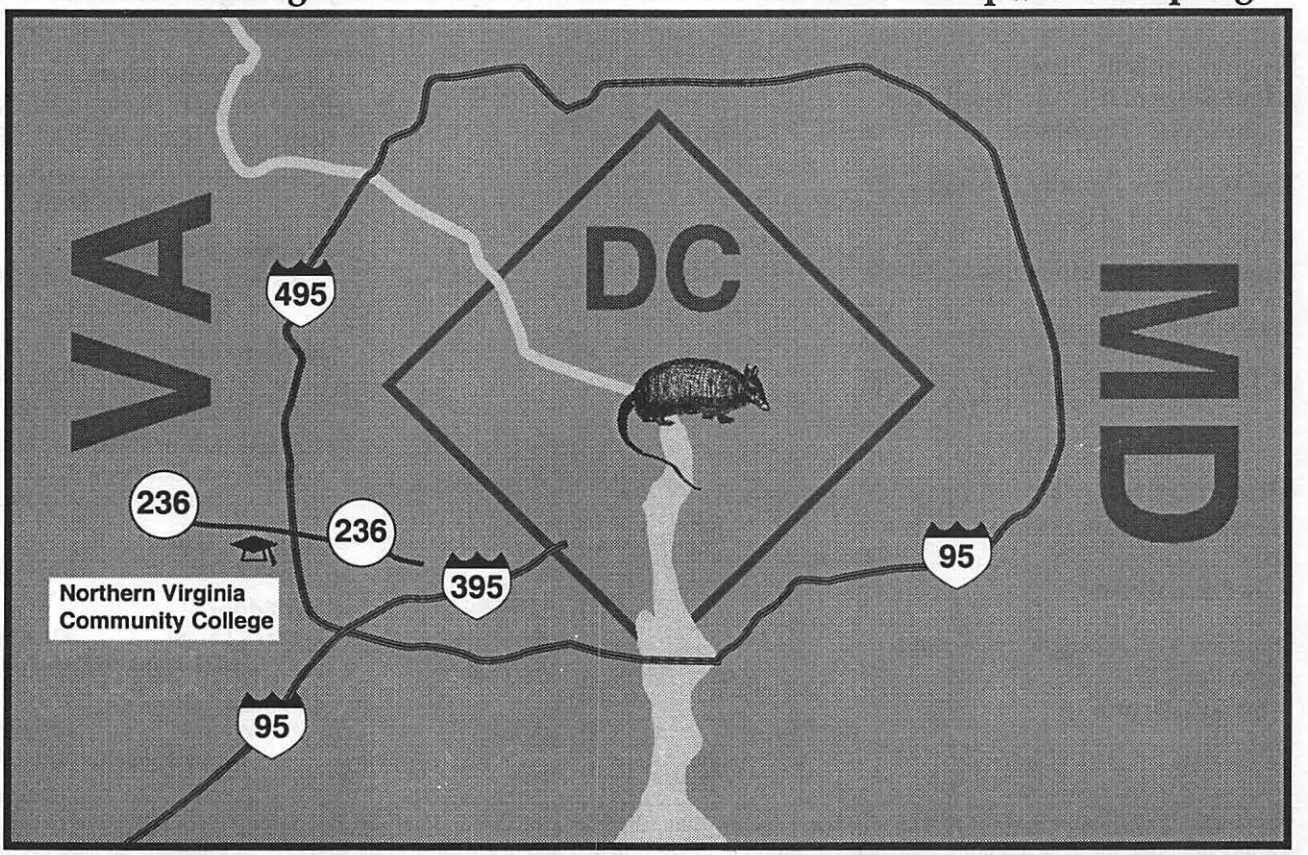
It's not just a movie anymore.

**For schedule changes check the TCS or the Pi's Website at http://www.wap.org/**



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### Postal Information

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**Writers' submissions**
July/August ..... May 20
September/October ..... July 20

**Ad space reservations**
July/August ..... May 20
September/October ..... July 20

**Camera-ready ad copy**
July/August ..... May 25
September/October ..... July 25

### Editorial Staff

**Managing Editor**
Kathryn Murray 804/ 580-2366
KAM129@aol.com

**Associate Editor**
Bonnie Ashbaugh 301 / 946-8955
bonniea@tcs.wap.org

**Review Editor/Macintosh Editor**
Lawrence Charters 410 / 730-4658
lcharters@tcs.wap.org

**Apple II Editor**
Seth Mize 410 / 766-1154

**Art Editor**
Blake Lange 301 / 942-9180
blake.lange@tcs.wap.org

**Calendar Editor**
Bill Wydro 301 / 299-5267
wwydro@aol.com

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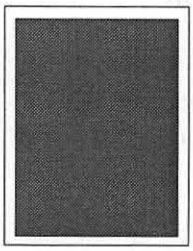
# Washington Apple Pi

This issue of the Washington Apple Pi Journal was created on a PowerMac, with proofing and final output on an HP LaserJet 5000 N.

The page layout program used was PageMaker 6.5 the word processing program was Microsoft Word 5.1; the principal typeface is Palatino (10.5/12.5) for the articles; and Avant Garde Demi for headlines, subheads, and emphasis. Charlemagne Bold for drop caps.

**Cover Design:** The WAP Journal cover design was created by Ann Aiken in collaboration with Nancy Seferian. The Capital artwork was illustrated by Carol O'Connor for One Mile Up, which donated it for use on our cover.

## Advertising in the Journal
### (available sizes)



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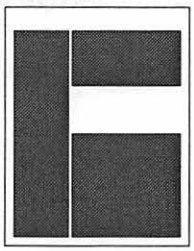

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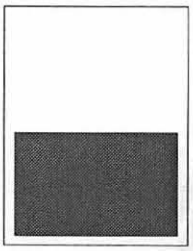

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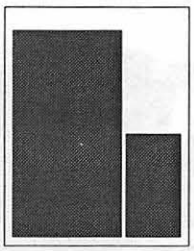

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| | | fauguet@erols.com |
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12022 Parklawn Drive, Rockville, MD 20852
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TCS: 2400 bps (301) 984-4066
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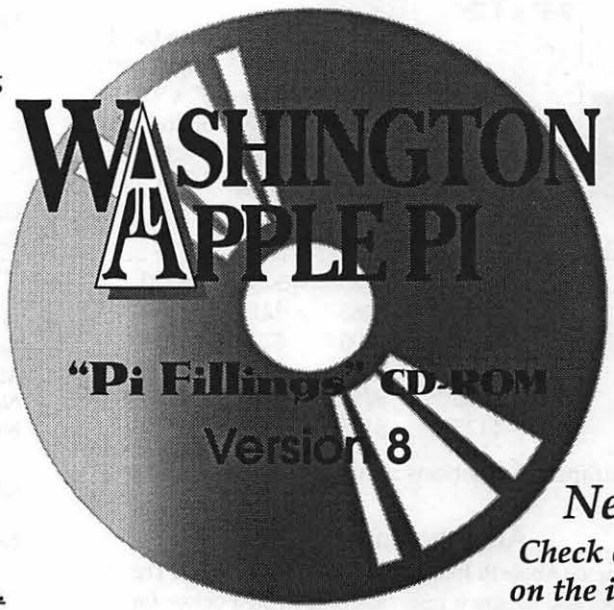
# Lots to read, lots to do

SURVEY results are in and Lorin brings you some of the comments. It's time to vote *(your ballot and information on the candidates is in the center of this journal)*. Then there's the upcoming Computer Show & Sale and Computer Camp to mark your calendar for *(courses listed at the end of the tutorials section)*. And just when you thought there couldn't be much more offered by Washington Apple Pi, there is the new Web-Based TCS with articles starting on pages 15 and 21. One gives background on it while the second one instructs on how to use it.

Take the time to vote and send your ballot in. Given how numerous the responses were to the questionnaire, confirm your interest in the Pi by voting in the election too.

If you are interested in writing for the journal, please get in touch with us. As you will see in this journal, there is lots of talent within the club and we want to share the knowledge with other members.

Thank you.
*—Kathryn Murray*
Managing Editor

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# If we can land a man on the moon, why can't the Pi . . .

ONE OF the fun things about this job is trying to be there when you arrive. By that I mean having services or programs if not in place, then at least being thought about before you grouse that we don't offer them. That way, when you get a hankering for something related to your Macintosh, we are ready. Now you are probably wondering how it is that the Pi is able to divine interests you may not yet have. My favorite answer when asked that question is tea leaf reading. Typically I say we serve an insightful blend of fine instant teas to students and visitors. What we actually do is read lots of the e-mail you dash off over a particular frustration, talk in person with you whenever our paths cross, and listen to the comments of students and visitors to our Tuesday night repair clinics.

But I meet very few of you, don't really hear from a whole lot of you, and too often find little to read at the bottom of those tea cups. One wag around here suggested I use the David Horowitz approach to getting your attention. David is the nice fella who scared your parents from the left when you were in school and, now that you have kids in school, does the same from the right. Fortunately, there is something about the topics I pick that do not get you quite the way his do.

Anyway, I wanted to find another way to get in touch with you and elicit a comment or two about this place, what we now do here, and maybe a clue as to where to be tomorrow. Someone suggested a poll. The Pi has not done one in years. So I contacted a couple of professional pollsters who are members of the Pi. Might I learn something from a poll about how you view the services offered by the Pi? Yes, I was told. Craft questions that elicit the response you need and off you go. And don't forget, you will only get a three to five percent return. Care to try your chances? Why not? I asked if it would be OK to write questions that are open ended. I really wasn't interested in being told what I wanted to hear — especially since I didn't know that myself. I am glad it is slow in the political polling business these days.

So Brian Mason, our Secretary, sat down and created the survey you found in the last journal. It turns out that there really is a dilemma in the survey business: do you want nice quantifiable data or something that elicits a visceral reaction from the surveyed? Brian is big on quantifiables; check those boxes and chi square that data. Me, I like them snotzo questions where you get to stick it to management. Brian and I found a satisfactory middle ground. He let me write an opening to the survey that would keep you from falling asleep, and the closing question. He got to craft the rest. Well, actually I smuggled in a few lines here and there. We sent the draft to our members who do surveying for a living. They swallowed hard, refined the questions to remove some confusing English and suggested that we preview

the results on a 'focus group.' And, they asked that I not thank them for their assistance.

Well, the only thing I could find that sounded like a focused group were some visitors to the office; actually they were students taking "Intro To The Mac." The students said survey taking was not listed in the syllabus. I told them they would flunk if they didn't at least try to answer the questions.

No one walked off with a copy. Gee, I was getting a better return in the preliminaries than I was told would take place. We cleaned up the English in questions that seemed to baffle our 'focus group' and sent the survey to the printers.

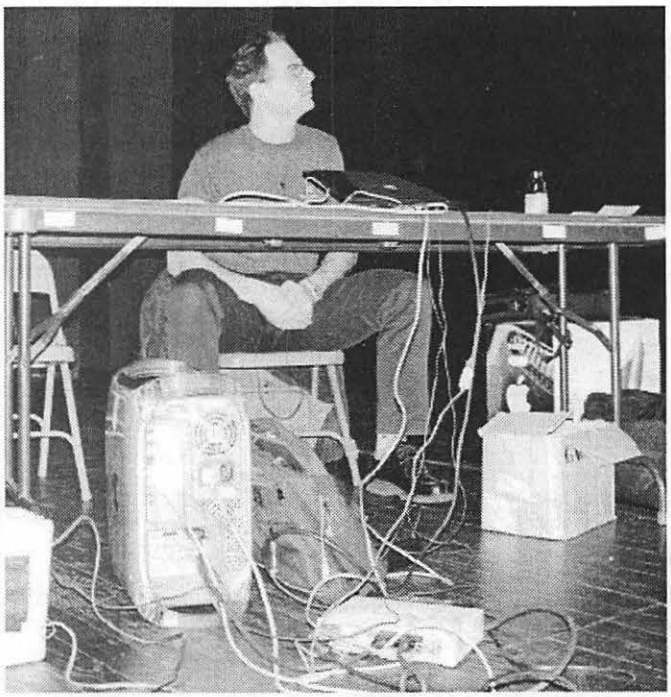
### And So?

Well, Brian is not quite ready to tell all he learned. Remember he has lots of boxes to count. I only have to read the fill-in-the-blank questions. Oh sweet joy! Thank heavens for blank lines. If I could extrapolate from what happened, I would send Kathryn [our editor, remember?] an open ended question followed by lots of blank lines for my column and let you fill in the white space. I got an eye full. But before I fill your eyes with that stuff, a word from our sponsors.

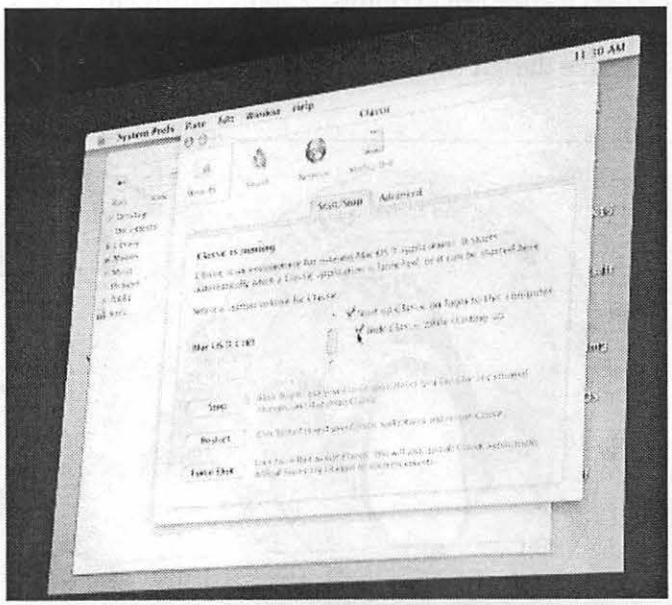
### That Time Again

Just like your local public broadcast station always seems to have its hand out, the Pi always seems to be running an election. And every year I have been writing this pre-election column, I try my darndest to get you to vote. You know all the lines I have tried in the past. I have had some modest, very modest success. Actually, as a trend, the number of ballots returned has gone up. Unfortunately, if it were a learning curve, we would still be in first grade. I have carefully followed the postmortems from the Florida [insert your favorite descriptor] national election to see if there isn't something I could learn from that which would explain why members don't vote. No Scantron machines here, the sample ballot looks just like the real thing, and the only dimples to be found around here are the ones in your cheeks. I did find one news report where the surveyed

# January 2001 General Meeting Photos



*At the January 2001 General Meeting, JD Mankovsky, a senior engineer with Apple, gave a dynamite overview of Mac OS X. Several major changes were revealed to the still-unreleased operating system at MacWorld San Francisco in January, and JD covered the changes in detail. One major disappointment: JD was genuinely "bummed" that he couldn't arrange to do his presentation on one of the hot new titanium PowerBook G4 laptops. (Photo by Lawrence I. Charters)*



*One welcome surprise at the January 2001 General Meeting: Mac OS X is going to be quite a bit more "Mac-like" than the Public Beta suggests. The Apple menu has migrated from the center of the screen back to the top left corner, where it belongs. As shown in this 15-foot high projection, Apple is also making it a bit easier to run Mac OS 9.1 while in the Mac OS X environment. (Photo by Lawrence I. Charters)*

complained about a lack of familiarity with the process and ascribed that to the distortions. Wow, there is an approach I had not explored.

Why not try something wherein members have to fill in a form so that they are comfortable with the real thing? Schools do it; why bother teaching content, when the measure for teacher approval is the standardized test score. Teachers mimic those national test forms so as to give their students an edge; why can't the Pi try that and see if it improves our returns as well?

So, I contacted a couple of professional pollsters who are members of the Pi. After all, polls garner returns akin to the volume of returns we elicit for an election. Yes, I was told. Craft questions that elicit the response you need and off you go. And don't forget, you will only get a three to five percent return. Sure, I thought, why not. Oops, I already used this paragraph above.

Do me a favor so that I don't have to write more of this Snoopy-like stuff. Go fill out the ballot at the center of this Journal. You know you can do it. You are comfortable using a pen - you used one for the survey. You are familiar with the layout of the ballot - we made it similar to the survey. You love the sound of those little perforations tearing away from the spine of the magazine. Everyone who returned a survey enclosed all three sheets. Go. I'll wait.

You Finished? Good. No one has yet to come up with an explanation as to why we are awash in returned surveys. I am looking at a couple of hundred of them. I got just what I wanted: thoughtful comments, snotzo notes, and mountains of unquantifiable stuff. I love it!

*A large crowd was on hand to hear JD Mankovsky talk about Mac OS X and other recent Apple introductions. Several Pi members made the long journey to MacWorld San Francisco in early January, and offered up a wealth of comments about the annual West Coast religious rite. (Photo by Lawrence I. Charters)*

What I am looking through is about as organizable as my life. No wonder pollsters have little to fear from user group presidents.

### Big Picture

—You want a magazine that you can hold in your hand, printed in a type size that does not require that you wear reading glasses in bed

—You want articles on other than mainstream applications

—You want more of 'how to' articles

—One nice person enclosed the style manual from the now defunct Berkeley Macintosh Users Group (BMUG). Maybe you'd like to take a look, Kathryn.

—It is interesting how many feel they know so little about their computer.

**There were lots of comments like:**

—I am too dumb to know what I need

—teach the basics for newcomers and dummies like me

—I was pleased at the number who asked about getting an e-mail notice of upcoming events and special deals from industry. Coming soon!

—Several asked about a teaser 'advertisement' on the Pi website highlighting material to be found in the next

*Tom Witte used his new digital camera, a Fujifilm FinePix 4700, to take some outstanding photos of the January 2001 meeting. This tiny camera (about the size of a paperback novel) can also record short QuickTime movies, complete with sound. (Photo by Lawrence I. Charters)*

Journal.
—a number of people who live 'out there' offered to write reviews of software.
— "I am delighted with the emphasis on more basic information"
—several suggested a follow-up survey in the renewal notice. Would you mind?
—I was surprised at the number of members who didn't know we recycle worn Macs. Several offered to assist: thanks. You will be hearing from us.

**As for our monthly meeting**
—I especially appreciate the Q&A at the beginning
—I'd like to see more Pi members present
—several asked that as an alternative to attending the regular meeting, that we offer a mini-tutorial on some subject

**Them—A whole class of comments read like a 1950s horror movie. Get 'them' to do it.**
—where is the instruction manual for my new iMac. How can I go online to get answers, when I don't know how to use this thing?
—why don't more people run for the Board of Directors?
—I would like to see more advertising [in the Journal] by Apple dealers and service companies.
—Can't you conduct a clinic somewhere other than in Bethesda?
—Several asked about a teaser 'advertisement' on the Pi website highlighting material to be found in the next Journal.

**Stick It To Evans**
—"I tried to fill in the survey on line, but it would not accept any of my marks". [It is a .pdf to be downloaded]
—"Everyone wants to go to Heaven, but no one wants to drive."
—"The Pi has always been too large for me and I don't know how to ask for help."
— "WAP needs an intro tutorial to WAP."
—"I can't figure out where to put my comments on that bulletin board."
— "Most of us don't buy a computer every year. Anything the Pi can do to help maintain older computers would help."
—"I could write a "How Stupid Can You Get" series that would make others feel real smart."
—"If you taught classes at a good time I would come."
—"Pi remains a vital organization - and I am grateful!"
—"You keep my Apple III alive."
—"I don't know how you do it, but don't stop now."
—The question was:" Where Do You Live?" Diaspora was crossed out and Tennessee written in.

**On the subject of the Pi recycling computers for donation:**
— this kind of activity keeps me a member
— "I think you are wonderful [to do this]"
— someone out there works for Kraft division of General Foods. One survey had all the references to Jell-O rewritten as 'gelatin dessert.'
—"Sure wish your tutorials were available on CD."
—"Problem resolution on the [bulletin board] is valuable.
—"I am ready to write [for the journal] if you provide a sample."
— I am grateful to WAP for helping me to live with what I have and make it work for me."

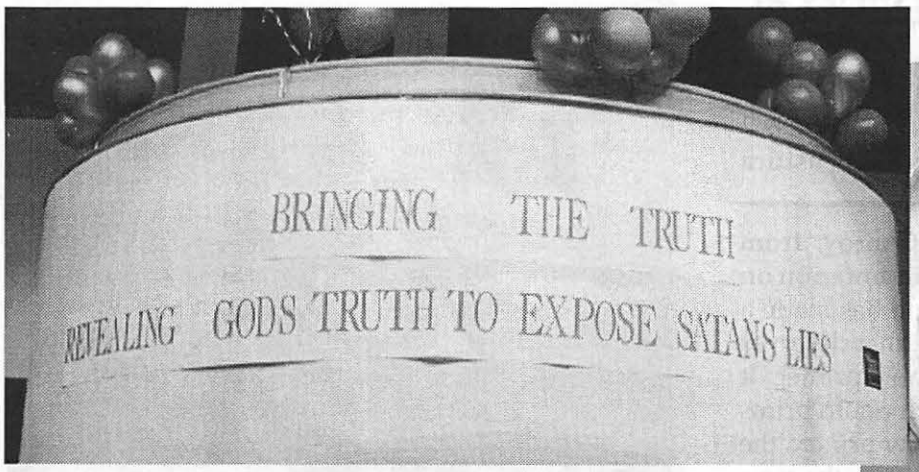
My thanks to each of you for taking a crayon and a few minutes from your daily drill to shed a little light on our relationship. And if that is not satisfying enough, think about how much more pleasant supper will be without me calling.

Remember That Ballot! Now don't forget to check and make sure you did not vote for more than one presidential candidate. The thought of someone holding your ballot up to the light to divine which squiggle you made first is not something I need to live through again. And, if you are a good trooper and wish to help the US Postal Service out of its looming deficit, enclose a self-addressed stamped envelope and I will send you an "I Voted" sticker.

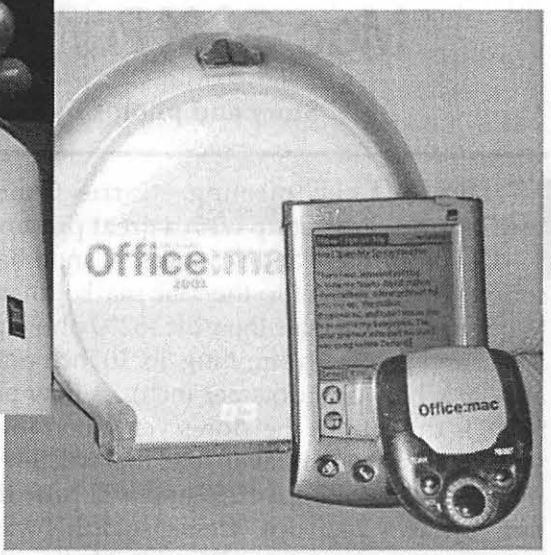
*—Lorin*

*Mystery Photo of the Month: Washington Apple Pi veterans know that the crew that runs the club bulletin board, the TCS, are collectively known as the "penguins." Some might even remember why they are called penguins. But do you know where this street sign is located? (Photo by Lawrence I. Charters)*

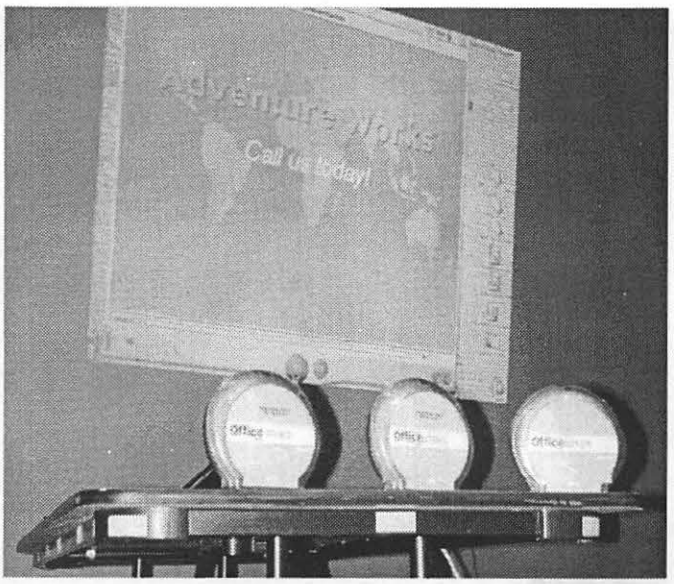
# February 2001 General Meeting Photos



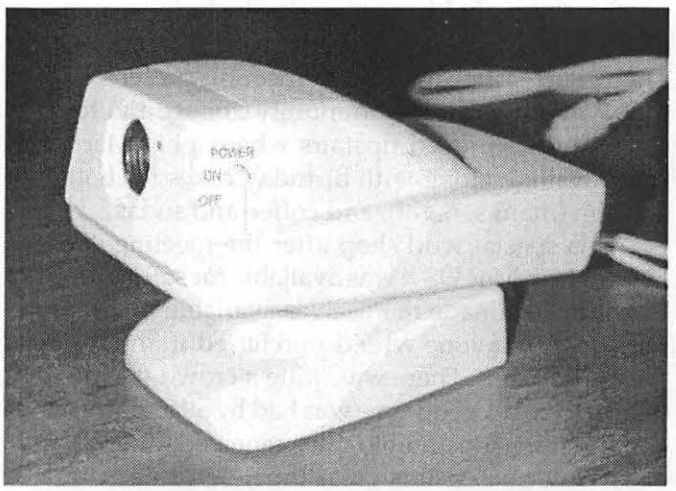

*This sign greeted Pi members when they came to the February General Meeting. A common reaction went something like: "That's right — Microsoft is going to be here." (Photo by Lawrence I. Charters)*




*The Pi Web site published this intriguing photo, calling it "Microsoft Office for Palm/Handspring." In reality, the big flying saucer is Microsoft Office 2001 for Macintosh, and the smaller flying saucer is a freebie radio Microsoft gave away at MacWorld San Francisco. Some claimed they were disappointed when they discovered it was a joke. (Photo by Lawrence I. Charters)*



*Microsoft demonstrated Office 2001 at the February General Meeting. When the Microsoft representative asked, "How many of you love Microsoft?," nobody raised their hand. He confessed he wasn't surprised, and then launched into an excellent demo of Microsoft Office. While nobody claimed to "love" Microsoft, he had no trouble giving away three copies of Office at the end of meeting drawing. (Photo by Lawrence I. Charters)*



*This, plus the accompanying circuit board, is a piece of Apple-branded equipment. What is it? Send your guesses to: webmaster@wap.org. The most creative answers will be posted on the Pi Web site. (Photo by Lawrence I. Charters)*

# March General Meeting & Mac OS X Party

**Story and photos by Lou Pastura**

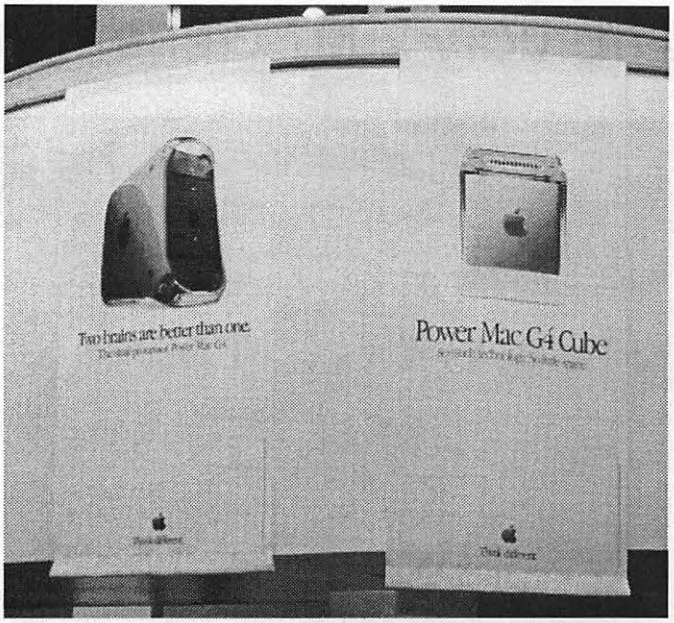
FIRST, THE meeting. Carrie Conroy, from Canon, was first up with a great presentation on Canon printers and scanners. Canon has made a serious commitment to the Mac market that deserves to be supported. I use their BJC-8200 photo printer. It is fast and produces stunning 8 x 10 inch photo prints at 1200 x 1200 dpi (dots per inch). A new printer, the S800, is due out in the stores very soon (by the time you read this it will be available) that will be even faster than the already zippy 8200 and will raise the resolution to 1200 x 2400 dpi. Carrie said this was her first user group presentation. We didn't believe her — she did a *great* job!

Next up, J.D. Mankovsky, a senior engineer with Apple, did his usual amazing job of presenting great amounts of both technical and practical information in a very accessible way. Even more amazing, he does this while holding the attention of a widely varied and truly outspoken audience. He walked through a Mac OS X install and patiently answered question upon question with the skill and good humor we've come to expect from this old friend of the Pi.

Speaking of old, meeting day included a birthday celebration for J.D. as well as for our own Jon Thomason. After the formal meeting presentation in the Northern Virginia Community College auditorium, the festivities moved upstairs where a big Mac OS X cake awaited, along with birthday cakes for both J.D. and Jon (thanks, Beth!), and coffee and sodas.

This special workshop after the meeting was the place where Mac OS X was available for sale and where Pi volunteers made themselves available to install the new OS for anyone who'd purchased it and brought their computer. There was quite a crowd (as the photos attest) and a good time was had by all as new friendships were made and old ones renewed.

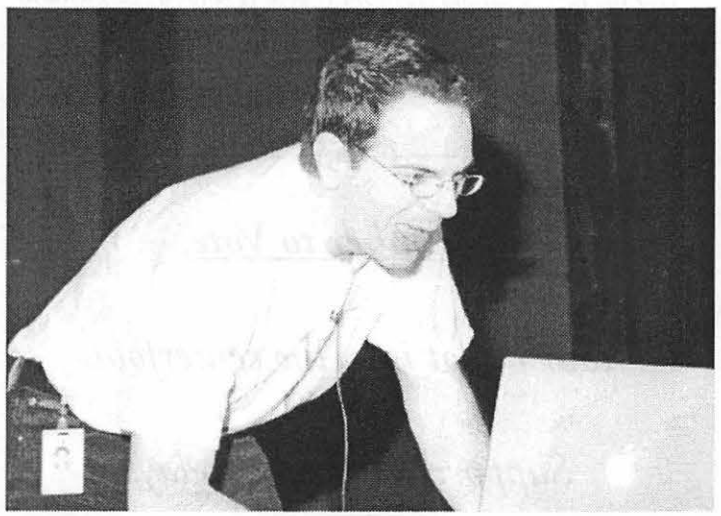
If you missed this great time, don't despair. We get together every month to share answers to questions and hear from vendors, and we'll be doing it next month, too!. It's fun and educational, and you might make a new friend. Come join us! ■




*This is the sight that welcomed everyone who walked in the door. No doubt about it: this is Mac country! (Photo by Lou Pastura)*

*Carrie Conroy, representing Canon, is either praying for inspiration or wishing that the old annoying guy with the camera would go away. (Or possibly praying that she owned JD.'s PowerBook G4 on the table in front of her.) (Photo by Lou Pastura)*

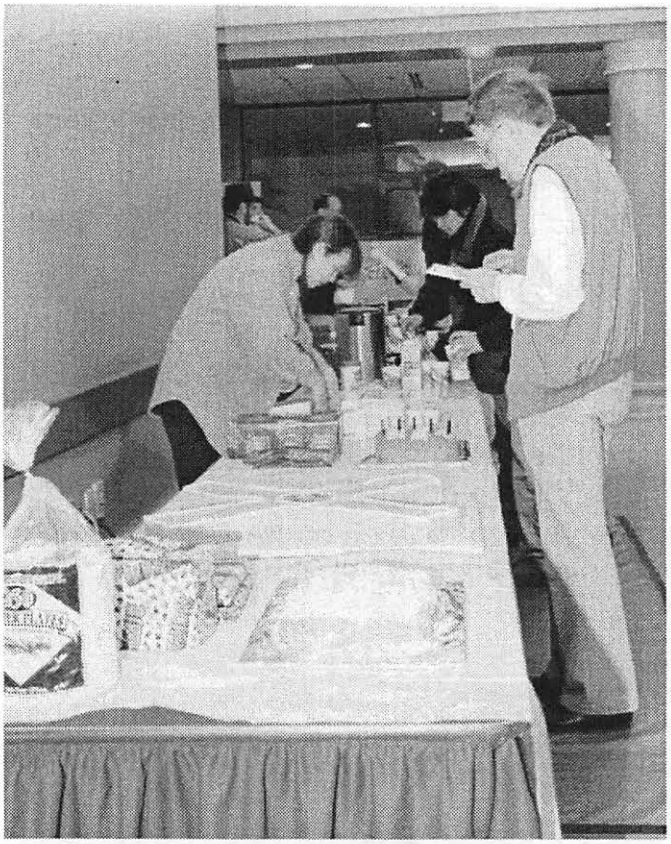
*Carrie Conroy explains to the crowd why Canon is so much better than the competition. And she did such a good job, we believed her. (Photo by Lou Pastura)*



*J.D. Mankovsky swears he was never in the Navy. The (mostly inaudible) language he used when the projector briefly acted up suggests otherwise. (Photo by Lou Pastura)*

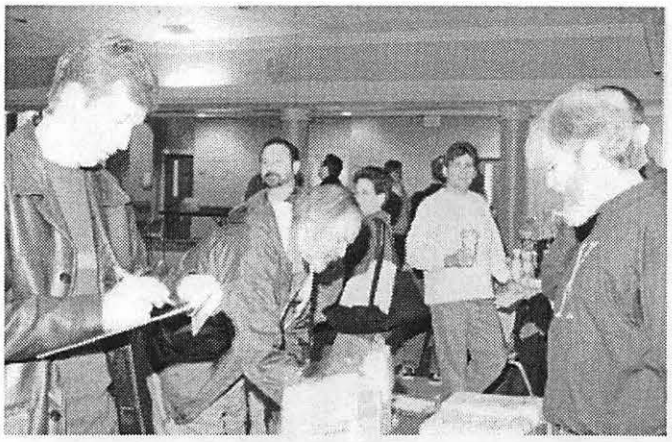
*JD listens patiently to a loooong question, wondering "THIS is why I went to college?!?" (Photo by Lou Pastura)*

*Jon Thomason, Software Architect for Washington Apple Pi, ponders the question: "What am I doing here...this is hardware...I'm a software guy?!?" (Photo by Lou Pastura)*

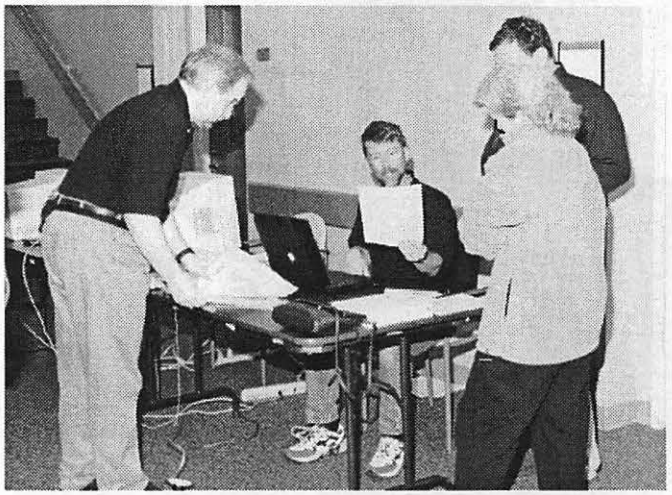


*Pi Office Manager Beth Medlin (on left) prepares to feed the masses. David Harris (right) appears to be reading the menu ("What? No Chinese?"). (Photo by Lou Pastura)*

*Kinda reminds you of Father Time welcoming the New Year Baby, although this baby came with a T-shirt instead of a diaper. Also worth noting: the System 7.5 box weighs more (excluding the T-shirt), mostly because 3.5" floppies (remember those?) weigh more. (Photo by Lou Pastura)*



*Lou Dunham (right) does a brisk business for our friends at MacUpgrades. Our thanks to him and his colleagues! (Photo by Lou Pastura)*



*One of numerous installation stations staffed by Pi volunteers. Our thanks to each and every one of you! (Photo by Lou Pastura)*

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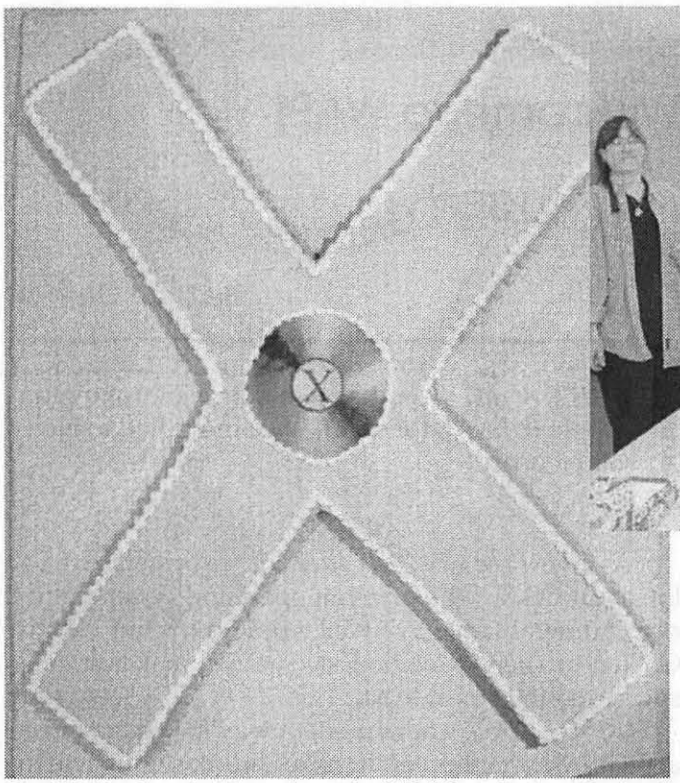
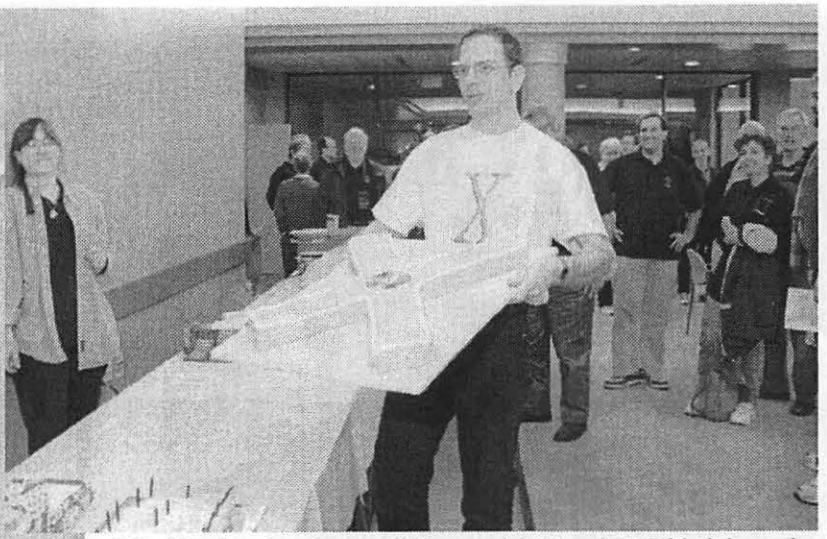
***Remember to Vote.***

*Your ballot is in the centerfold.*

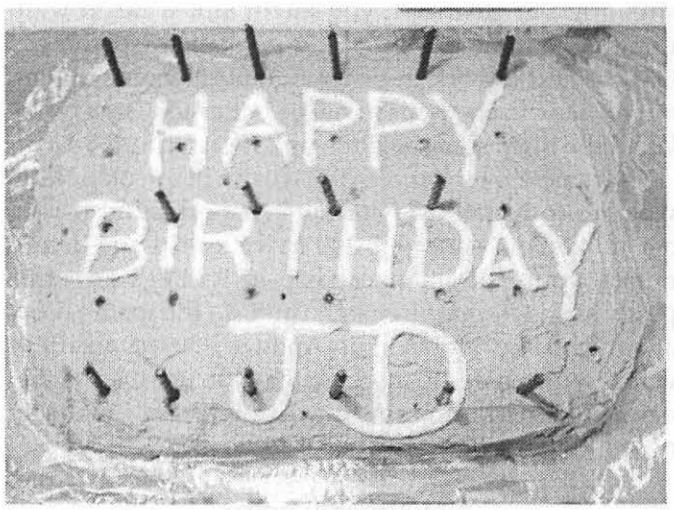
*Support WAP, vote today!*



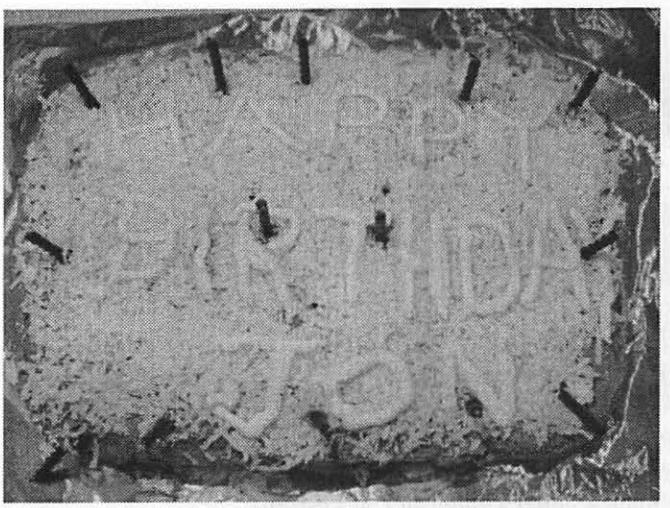
The OS X cake...is this cool, or what?!? (Photo by Lou Pastura)



J.D. Mankovsky shows off the special Mac OS X birthday cake. "Wait'll Steve Jobs sees this!" Note Beth Medlin, along the wall, pretending to be invisible. (Photo by Lou Pastura)

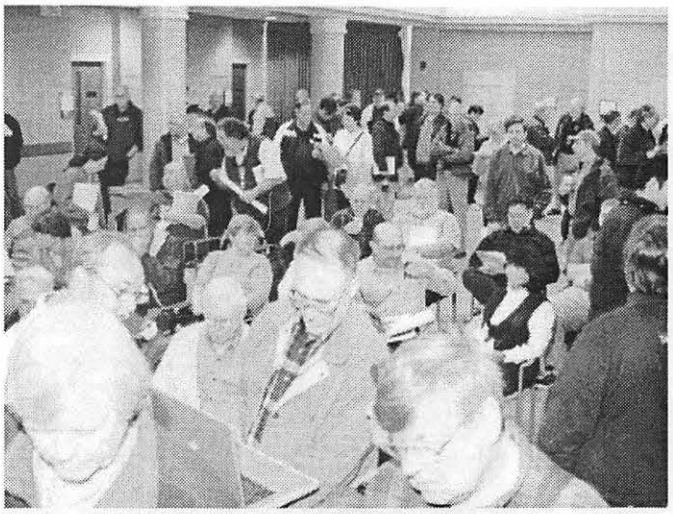



Just to let JD know we appreciate him! (Photo by Lou Pastura)

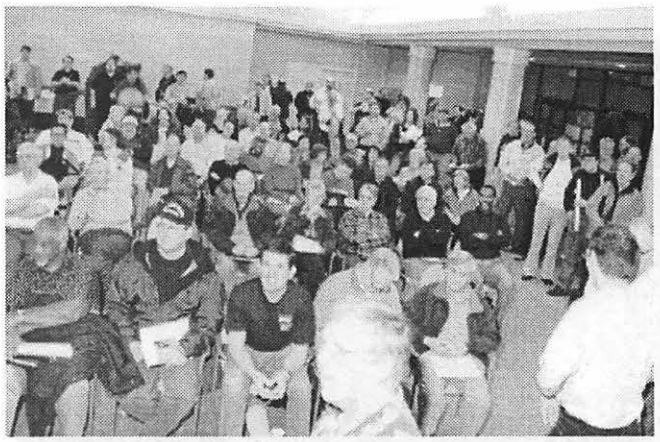


Just to let Jon know we'd be lost without him! (Photo by Lou Pastura)

What a crowd! There's gotta be a seat around here somewhere! (Photo by Lou Pastura)



*Note new Ti PowerBook in foreground. A number of members brought their newest acquisition...hardware lust and envy rampant throughout the room! (Photo by Lou Pastura)*



*People! People everywhere! Everyone's watching the stage except for one guy filling out a form because he just won a Canon scanner. (Photo by Lou Pastura)*

*WAP's new Pi Fillings CD is available.*

*Call today for Version 8.*

# Welcome to WAP!

## WHY USER GROUPS, ANYWAY?

**By Dave Ottalini**

FIRST of all— Thank you for joining Washington Apple Pi (WAP for short). We are thrilled to have you on board!

### OS X

As a new member, I'm sure you've been hearing a lot about OS X. Who gives an operating system a Roman numeral, anyway? Well Apple did - but calls it OS Ten to keep us all honest. The 3X2 makes it look spiffier on the box at least.

OS X is Apple's new, modern way for you to interact with your computer. It makes the jobs you have to do easier, faster and more fun. It will make you more productive. It is modern, stable, reliable and visually stunning. All that said, you might still want to wait until the Summer to install it. As with all new things, OS X is still a work in progress (and always will be) but for new users, it may well be better to wait a bit to let all the bugs show and the updates come on board.

As a new member of WAP, we can help you decide whether to install OS X or not - just ask! And if you decide you do want to install it, we'll help you determine if your equipment can handle it (there are some pretty stringent requirements) and do the installation at our Tuesday Night Clinic. And we'll help you afterwards with classes to teach you how to use it - and the newly updated programs like AppleWorks - that can now run natively under the new OS.

### Why are you here?

We hope it's because you have a love for the Mac just like we do - and are willing to invest a little time learning, helping and giving. Learning by coming to our clinics, tutorials or doing reviews. Helping with the many ongoing projects we have. Giving by returning some of what we're investing in you as a member back to members who are even newer than you are.

Remember you ARE Washington Apple Pi. And we can't move forward without everyone's help. This is a great club that has so much to offer. We are thrilled to have you as a member. Welcome! ■

# Penguins At Kitty Hawk

A Prehistory of the Web-Based TCS

©2001 Jon C. Thomason

WELL, WE'VE done it. For twenty years Washington Apple Pi has hosted a bulletin board system (the "TCS") for its thousands of members to meet online and share ideas. This past December the TCS took a long-awaited step and became an easy-to-use, interactive web site. And having reached this goal, there's a nice opportunity to take a look at where we now stand, where we've been through the years, and why.

*The Amazing Pengocycle™ Patent Pending*

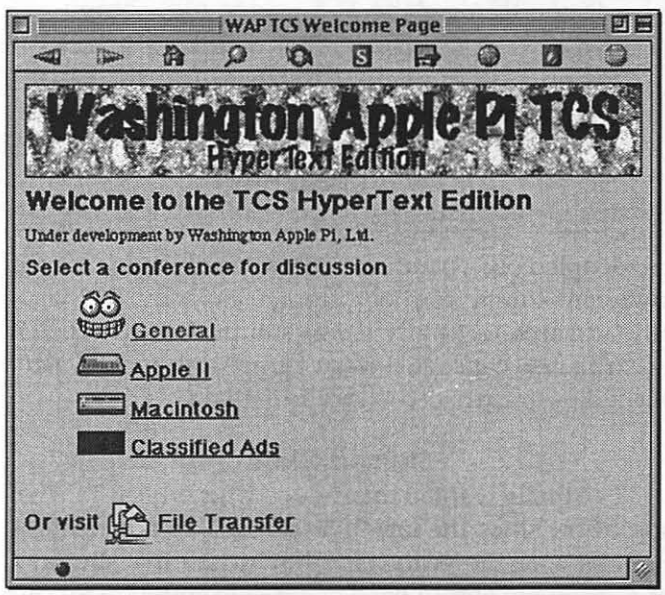
## A Family History

At the beginning, the TCS was like all other computer bulletin boards of its day. It consisted of a single, small computer with a floppy drive, talking to a modem and answering calls with a textual command-driven interface. A team of the Pi's most clever wizards spent years expanding it to use multiple machines working together, and enabling it to handle more than one call at a time.

To help give you some perspective, this was before the first Macintosh existed! Our members all used Apple II computers, which made history by creating the personal computer industry. At the time only the filthy rich could afford hard drives, and a 1200 bps (bits per second) modem was considered hot stuff. There were few national online services: CompuServe and The Source led the list. Both were strictly text-based back then, were extremely hard to use, and cost upwards of $20 per hour to fumble around. So tiny, local hobbyist boards like the TCS were *de rigeur*.

But time marched quickly, and rapid advancements in storage and communications technology drove constant, albeit resource-limited volunteer efforts to improve our system. Exciting new dial-up bulletin boards began to arrive, sporting graphical user interfaces. These required expensive proprietary software to use, but they had undeniable sex appeal. And the national online services were improving too, bringing us America Online and Prodigy at less than $10 per hour (but only during evenings and on weekends, mind you).

Washington Apple Pi has made a difficult decision to stay the course with the TCS and continue to improve it through stepwise evolution. For countless members this system has remained the nerve center of the Pi community, long after technology had clearly moved on. After all, it was never the technology that made the TCS successful: it was the community. And by maintaining only our own custom software we were able to anticipate and navigate many of the economic hazards which have hit other groups since then. But behind the scenes we've always played "what if", and we've always looked for opportunities to leap forward. My name is Jon. I joined the Pi's fabled TCS crew in 1986 as some sort of scrappy whiz-kid teenager. The organization was nearing a turning point, and many of our traditional hobbyists became swamped with Pi business details or simply wandered off. I became entrusted with ever-increasing portions of the system, until I stopped and rewrote all the software from the ground up in 1991. This rewrite got us out of some dead-end hardware we could no longer obtain parts to repair. It also added some oft-requested features,




*The first incarnation of the TCS on the Web, circa 1994. This prototype was once featured on the cover of the Journal, and was demonstrated at the March 1995 general meeting. This experiment led to the creation of the TCS Explorer Internet service, but the web-based TCS prototype itself was never completed.*

## Birth Announcement

Washington Apple Pi introduces a new way to put you in touch with our community bulletin board, the TCS. Just drop by using your web browser, and you'll be finding your way around in no time.

http://webtcs.wap.org

Now open for all members with TCS Classic service, or TCS Explorer Internet service. In other words if you've paid the optional $20/year fee for 24-hour online tech support, you're in. Just enter your mailbox name (that's your e-mail address minus the "@wap.org" part) and your TCS password.

Not yet a TCS participant? Stay tuned to the web site for future announcements, or take the word of your fellow members and upgrade your membership for $20.

http://store.wap.org

If you think of the TCS as dry, old, complicated, text-only tedium, then you'll get a kick out of the web interface. Never before has perusing, searching, and posting messages been so fast and fun. Try it today!

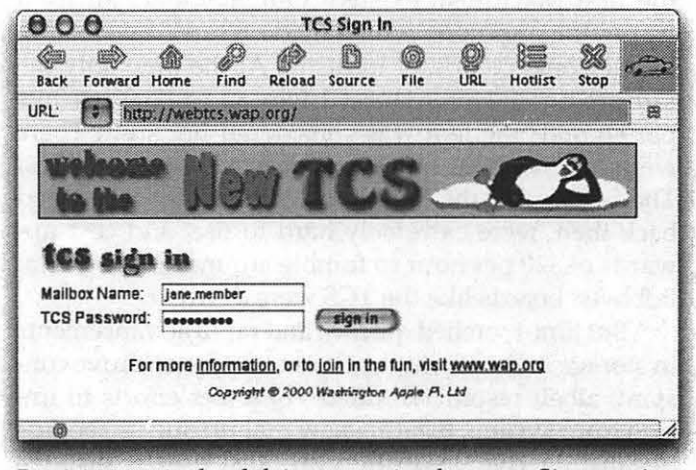
quadrupled our potential modem speeds and removed awkward limits from our storage capacity. But visually, and architecturally, it was still the familiar TCS. It wasn't a new concept, it wasn't graphical, and it wasn't Mac-like—for reasons I'll try to explain.

### Stained Glass

I've really wanted to produce a "graphical TCS" of some sort since the late 1980's, and I've had various notions over the years as to how to do that. But at a minimum we would need client-side software for our members to run at home, and that's a major stumbling block. You see, it's one thing to write and maintain custom software that runs on a single carefully-selected, centrally-administered server. But it's something very different to write and maintain software that gets distributed widely to our members and to the world—to ensure that this software runs on everyone's various and sundry equipment, and always plays nice with other software and I/O devices—to say nothing about having to support multiple platforms of radically different styles and display characteristics.

At one point a Pi member had produced an unofficial but full-featured offline reader program for the TCS, using a combination of Apple's enigmatic HyperCard software and the scriptable commercial telecommunications program Microphone II. We were all mystified. It was brilliant! Many people adored it and used it daily. Many more people couldn't get it to work. I wanted to collaborate with this guy to make a new version by adding support on the server side (and I use the term "server" with some reservation). But by the time he'd uploaded a working version—which was the first any of the TCS crew had heard of it—he'd pretty much completed his experiment and was ready to move on.

We came under pressure for several years to dump the TCS in favor of the commercial FirstClass BBS software, which we refused to do. In part, it was too expensive. In part, it fueled the ongoing resentments and division between our Apple II vs. Macintosh parishioners. But mostly we looked into the face of a full-blown cultural repotting and we realized that the TCS community would never resurface on the other side. We'd be following the crowd, and pandering to the whim of the moment—which isn't by itself a bad thing. But goodness knows there was no chance that *we* would've been *the group* to succeed at being trendy over the long haul. We opted for continuity, and to serve our stable member base at the risk of losing the expensive so-called "power user." Please note that the major groups that went the other route are now defunct. Note fur-




*Participating in the club is now easier than ever. Sign up, sign in, and sound off!*

"Central to the impressions I've been hearing, I suspect, is the perceived warmth of the visual design. In part they're also influenced by the speed, flow, and behavior of the system, but I think the whimsy is a key part of it. I believe this helps to offset the sometimes caustic discussions people have encountered on various boards over the years."

*With point-and-click simplicity, it's easy to find something that meets your interests.*

ther that the people who left us to follow those shiny things are now scattered to the four winds. And witness that our good friend and neighbor the Twilight Clone BBS, which earned the attentions of all our best and brightest Mac hobbyists back then, went from bustling to busted within a matter of *weeks* after they expanded their services onto the Internet. Their discussion boards simply dried up.

So we've had some pretty vivid "don't"s presented to us, and we've had a lot of time to ponder our "do"s. As I mentioned earlier, I rewrote the TCS in place (i.e. still on the Apple II equipment we had, still using a language called BASIC) in the early 1990's. This allowed us to sustain the parts that worked, while allowing us to escape 9600 bps modem speeds, 140 megabytes of hard disk storage, and our seeming to have to hand-crank a doddering fleet of 30 megabyte full-height disk servers. But in my design back then, I was careful to architect a structure that was beyond the task at hand. This made the programming much more difficult and obscure, but it laid the groundwork for radically different future directions. This new implementation had to take into account what I expected at the time would be a custom Mac program that would run on the file server and serve as the back-end to something like that mysterious, genius HyperCard stack.

But I never located a taker to write or to collaborate on the client side of a graphical user interface bulletin board, even for any one platform. So I never had reason to further develop the server side. There's just a line one doesn't cross as a volunteer, interesting challenge or no.

## The Big Break

Then one Saturday, crew member Jon Hardis ran in to our weekly maintenance gathering with a contagious fascination. He'd just been to a meeting at his office at the National Institutes of Science and Technology, and seen a program called NCSA Mosaic (which was the skeletal precursor to Netscape Communicator). Jon told me that day that *this* was going to be our client, and that it'd change everything. He couldn't have been more correct. Years later, the world would begin to call this approach an "intranet" solution. (Genius, you see, has never been in short supply.)

We talked to the crew, and we scribbled down notes, and we tinkered with HTML (HyperText Markup Language), and with CGI, and we puzzled through scary details like "does everybody have to connect to the Internet to do this, or can we set up our own modem pool?" We looked into bundling arrangements with local ISPs (Internet Service Providers), of which there were only two or three serving the area. At the time, they explained, upwards of 85% of their business was from Windows 3.1 users accessing text-only command-line Unix shell accounts. These accounts cost users from $15 to $28 per month, and any responses to Mac support questions were unhelpful at best. We began to realize that we could top that experience, and

for less money.

Our research eventually led to a plausible business case for setting up our own in-house ISP, which we called TCS Explorer. (Look for your Jan/Feb 1995 Journal.) Lawrence Charters and I stood on stage at a Pi General Meeting on March 25, 1995, to promote the idea. We presented the World Wide Web, with its coffee-pot-cams and its fish toys that tell time. There was no online shopping, as there weren't many real-world businesses with a presence there. To most members this service was a far-out curiosity, but to me it was also a path to my Holy Grail. We went on to demonstrate a fully-working TCS file transfer system and a half-implemented message base. This prototype was driven by Web server CGI (Common Gateway Interface) add-ons, hand-written in C++. It was hosted on a CERN httpd web server under Tenon Intersystems' clever BSD Unix environment within Mac System 7.1, running alongside AppleShare 3.0 on a gasping Quadra 700.

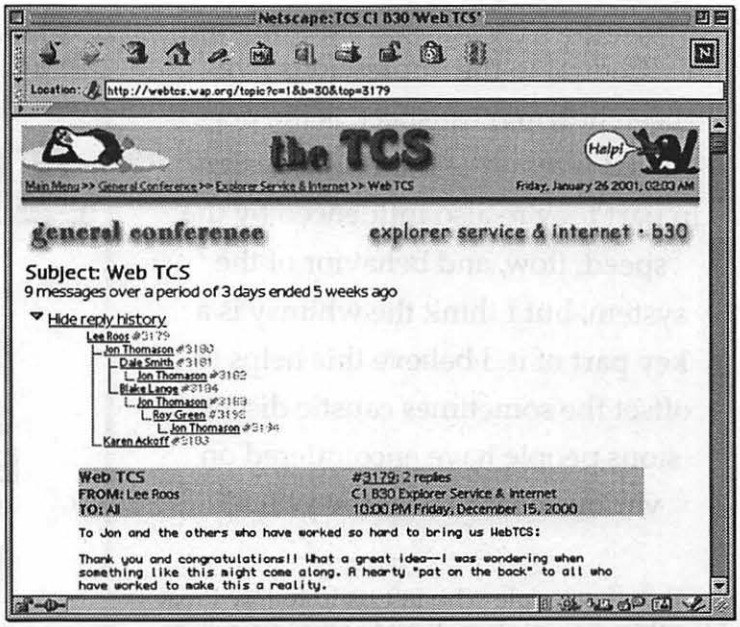
And believe it or not, this little dance number gave people a taste for the Web. Many of you prepaid into the capital costs and lined up to participate in this cooperative experiment. I wrapped up my semester and spent the summer scrambling to coordinate people's work and get all the pieces into place to construct a full-blown ISP and commensurate support processes from scratch. It was the darndest thing I'd ever been a part of, and it was a rousing success.

But then somebody noticed what we were accomplishing. And America Online, which happened to be putting together its first Web services too, offered me a job doing comparably interesting stuff with a salary and stock options. Needless to say they earned my full attention for the next few years, though I always felt somewhat guilty (and, curiously, short-changed) that I never got to complete my Web-based TCS prototype after we took the ISP portion online. I did connect the text-based system into the new dial-up Internet controller, and thus make the system available via telnet, but that was as much as I could offer toward an Internet-accessible TCS.

### Starting Over

Years later I got another chance at this project. I was smarter, the Web was well established, and the available tools and practices were no longer pre-primitive. I decided to take a sabbatical, roll up my sleeves, crack open some books, turn my basement into an experimental server closet, and finally see it through.

So we started over, with a different approach. How




*Online discussions spring to life with easily searchable messages, arranged by topic.*

many "Internet years" had passed since 1995? We had Apple's promises of a new Unix-based operating system, then called Rhapsody, and their industry-leading Web development toolkit known as WebObjects. The new system would need to run smoothly without a full-time staff, and it would need to share all data with the existing text-based system so that members could migrate from one side to the other at their discretion. We needed a new visual design, and a new interactive behavioral design that met people's traditional expectations and still offered new value. All this was deemed necessary to reinvent the TCS without "pulling a Twilight Clone," if you'll forgive the expression.

Probably my most central goal from the outset, apart from maintenance constraints, was for Nancy Seferian to design the layout and graphics. I had my heart set on Nancy's being the artist through whose eyes we all had the privilege of seeing the TCS. Nancy and I had joined the TCS in roughly the same era, and we had observed several of its cultural changes. In fact each of us had even taken a turn at the helm of the operation at one time or another. I figured that if I could express my TCS in software, Nancy could express hers in art. *This* would be the key to that delicate community transition.

Nancy cautiously agreed to take on this project, and to learn HTML in the process. She assembled a small team and they did most of their work via e-mail. They also spent many a sunny Saturday afternoon in the Pi

classroom, poring over details of human interface and wording, and dreaming up the colorful, friendly and whimsical world of the TCS that we now see in our web browsers. This allowed me to focus on programming, and on defining the feature set and core behaviors. We traded notes a few times, and then despite a few rain delays for untenable operating system bugs, we got it all working and online for members in December 2000.

### What Have We Learned?

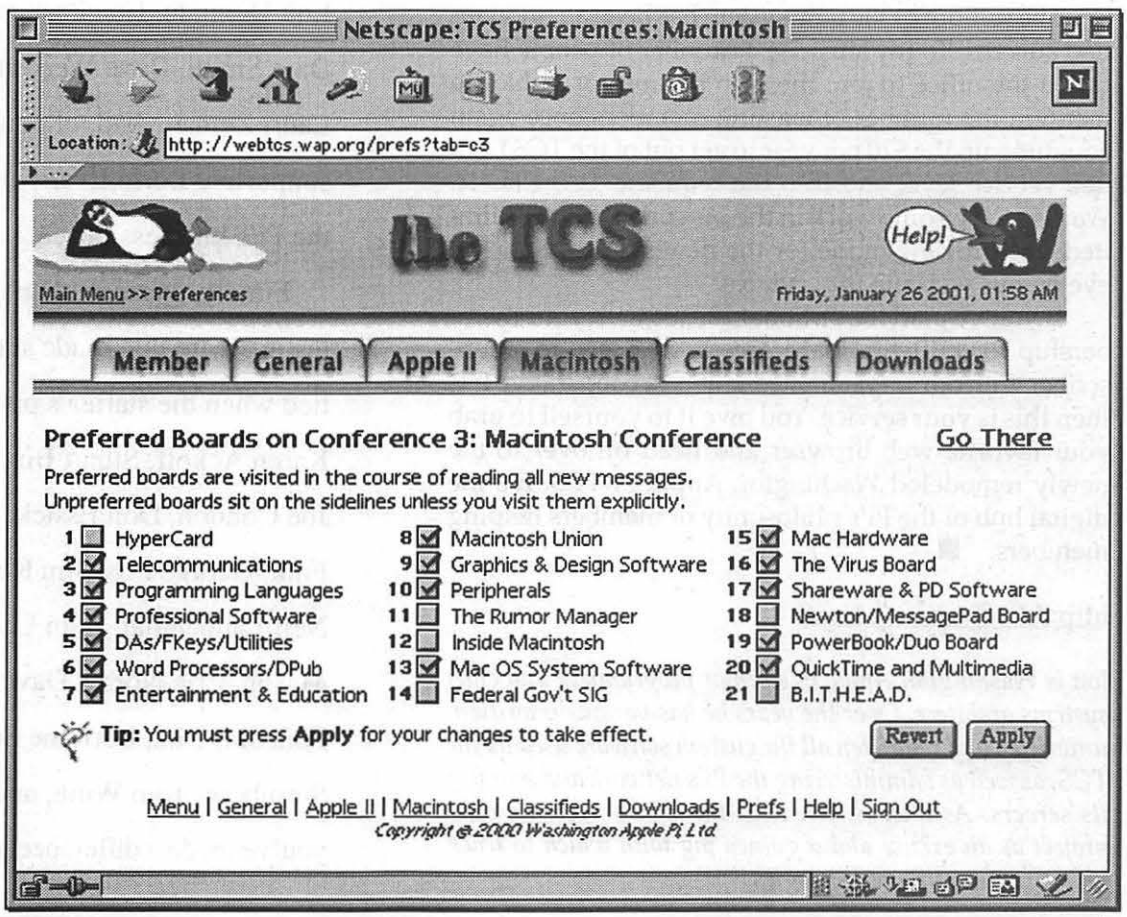
As of this writing, the web-based system has been online serving members for almost four months. We've made some software updates and solved some hardware snafus. And we've been watching usage statistics on the various service components that comprise the TCS. The results we've seen so far have been encouraging.

Our usage statistics confirm that not everyone is ready to stop using the traditional text-based system and switch over completely to the web. As we've observed for years, Pi members welcome and embrace change—provided *only they* select the terms and the schedule for such change! A substantial percentage of our long-time members will always choose to delay such decisions, and that's fine. That's exactly why we've waited this long for a viable split-system design approach. We can keep the old and the new interfaces online for as long as our members demand both.

Anecdotally, I've heard a lot of feedback along the lines of "I love the new TCS—it's so easy to use", elaborating into "I felt right at home" and/or "it's not at all like that $#!^%#@! confusing *%#&-?@%! text system". (Yes, to my surprise I've already heard more venting about the anachronistic text system just this year than I had for many years. I choose to think of this as a proud Irish eulogy.)

Central to the impressions I've been hearing, I suspect, is the perceived warmth of the visual design. In part they're also influenced by the speed, flow, and behavior of the system, but I think the whimsy is a key part of it. I believe this helps to offset the sometimes caustic discussions people have encountered on various boards over the years. And I can speak from several vantage points around the worst examples of such discourse to say that I'm convinced it'll also foster a calming of those. It already helps newcomers feel less like outsiders.

We've talked about maybe adopting a more polished, brushed metal appearance for the system. Myself, I'm hesitant to disturb this balance of tone. Who knows; maybe we can give it a shot and listen for your feedback. We do have many talented artists in this club,




*Customize the TCS to suit your needs. You're family, so make yourself at home.*

"At the beginning, the TCS was like all other computer bulletin boards of its day. It consisted of a single, small computer with a floppy drive, talking to a modem and answering calls with a textual command-driven interface. A team of the Pi's most clever wizards spent years expanding it to use multiple machines working together, and enabling it to handle more than one call at a time."

and all of our members know a good thing when they see it!

### Onward And Upward

The roll-out of the new system has been an unqualified success. To my surprise a number of people have called the office to join the club because of it! Not to mention the number of existing members once again coughing up the $20 per year to get out of the TCS Limited service level and into the requisite TCS Classic. We also have some work in the pipeline for a very limited free preview mode for the new system. Keep an eye on our web site for updates.

If you've paid the optional $20 fee with your membership for bulletin board access, or if you're a subscriber with our unparallelled low-cost cooperative ISP, then this is your service. You owe it to yourself to grab your favorite web browser and head on over to the newly remodeled Washington Apple Pi TCS! It's the digital hub of the Pi's philosophy of members helping members. ■

http://webtcs.wap.org/

*Jon is Washington Apple Pi's senior programmer and chief systems architect. Over the years he has variously written, unwritten and rewritten all the custom software used by the TCS, as well as administering the Pi's network and many of its servers. As always, Jon used the TCS's Web interface project as an excuse and a guinea pig with which to teach himself interesting technologies.*

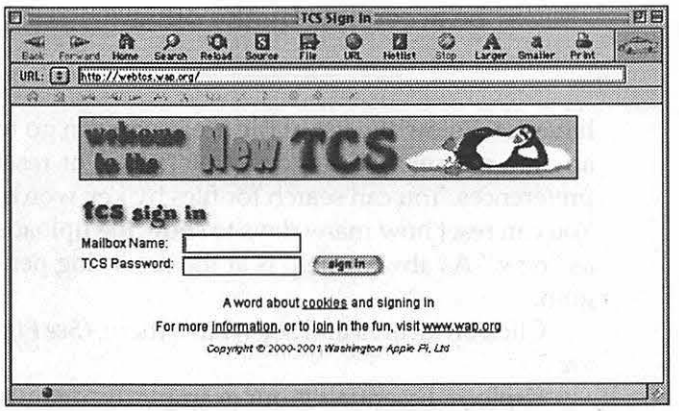
## Acknowledgements

This project wouldn't have succeeded but for the outstanding efforts of a small group of people, along with the help and patience of the greater organization.

I'd like to specifically thank (in alphabetical order) our all-star design and documentation team, consisting of Bonnie Ashbaugh, David Harris, and Nancy Seferian. Plus the rest of the crew who've helped make the tough decisions and kept the existing services running smoothly, Lawrence Charters, Lou Dunham, Lou Pastura, Paul Schlosser, Dale Smith, Dave Weikert, and Rick and Lauri Zeman. And, of course, the tirelessly supportive Lorin Evans and Beth Medlin at the Pi's business office.

Finally, warmest thanks to our beta testing team that made sure our shoes were tied when the starter's pistol was fired. Karen Ackoff, Stuart Bonwit, Paul Chernoff, Joe Cohoon, Don Essick, Pat Fauquet, Steve Fink, George Fox, Jim Kelly, Bob Klothe, Neil Laubenthal, John Ludwigson, Brian Mason, Eric Norby, Dave Ottalini, Scott Poit, Jim Ritz, Lorraine Schlosser, Richard Sternberg, Tom Witte, and Henry Yee. Folks, you've made a difference, and we appreciate it.

# The TCS Crew Proudly Presents...




**by David L. Harris**

SINCE I joined the Washington Apple Pi in 1987, the TCS has been the single most valuable service of the organization for me. Here I learned how to use my Macintosh. I downloaded software to use with it. I made friends with many like-minded (and not so like-minded) people. Jon Thomason refers to the TCS as our community center, available 24 hours a day, 7 days a week (well, almost).

I soon learned how to navigate the text-based system, and it eventually became second nature to me. But the text-based TCS is no longer "modern," and many people find it not worth the trouble to learn its idiosyncrasies. So now we present the long-awaited graphical user interface to the TCS, created by Jon Thomason, with the visual appearance crafted under the leadership of Nancy Seferian, aided by Bonnie Ashbaugh and me, as the design crew. The suggestions of a band of beta-testers also helped shape the system that you will see before you. If you are a TCS subscriber, have an Internet connection and a Web browser, you too can join the fun from anywhere in the world. Just have your browser set to accept cookies (see sidebar), type in your "mailbox name" and password, and click the sign in button.

For the time being, at least, both the text-based and Web access to the TCS will be available; anything entered by one means of access will be accessible by the other. There will be some things that you can do on the text system (e.g. Usenet newsgroups, e-mail) that will not be available via the Web. On the other hand, some things you can do via the Web (e.g. Find) that you can't do on the text-based TCS. If you have an Internet connection you will find it more convenient to get your e-mail and read newsgroups through applications designed for those purposes anyway.

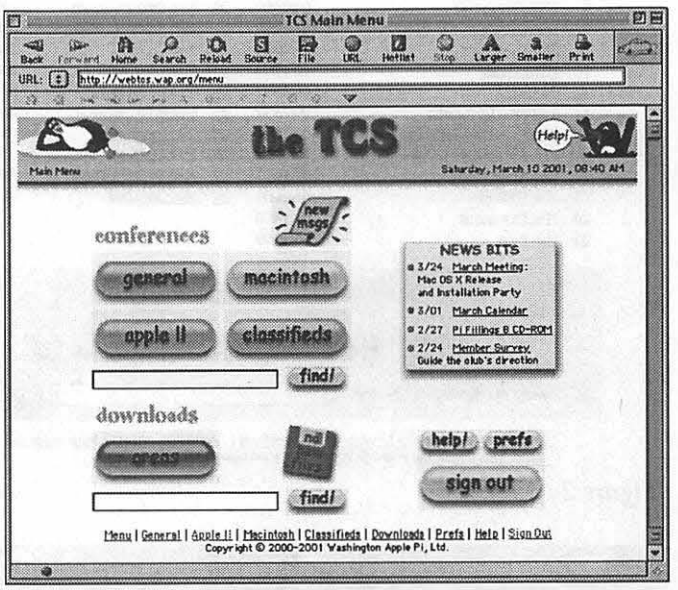



*Figure 1*

### Start at the Main Menu

Here's where you start your trip. (Since this is always a work in progress, the exact appearance may change over time.) Four message conferences are a click away, as is the area where you may download files to your computer. Enter keywords to find messages or file descriptions. Click "new msgs" or "new files," if any, to immediately access new messages, or files that have been uploaded (by way of the text-based system, for now) since your last visit. Read the latest news, change your system preferences. Get help in context for any page by clicking on the drowning penguin (general TCS help is not yet written—do I have a volunteer?). And do, please, sign out (you can use the links which appear at the bottom of every page) when you are finished.

### Where do you want to go today?

Let's be different and start with downloads. *(See Figure 2)*

The areas where you find files to download are presented here. What appears will depend on how you set your preferences. The screen shot shows the ones I

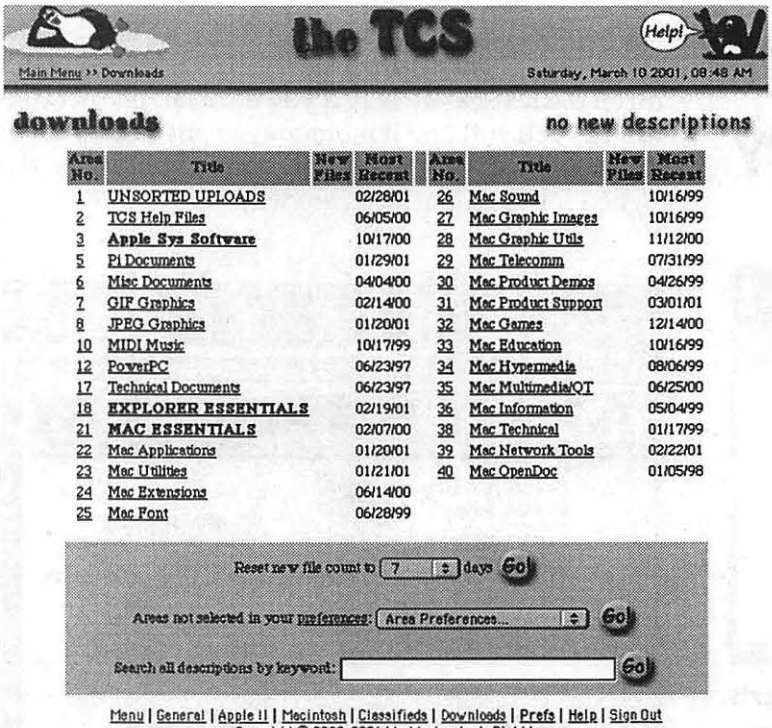



*Figure 2*

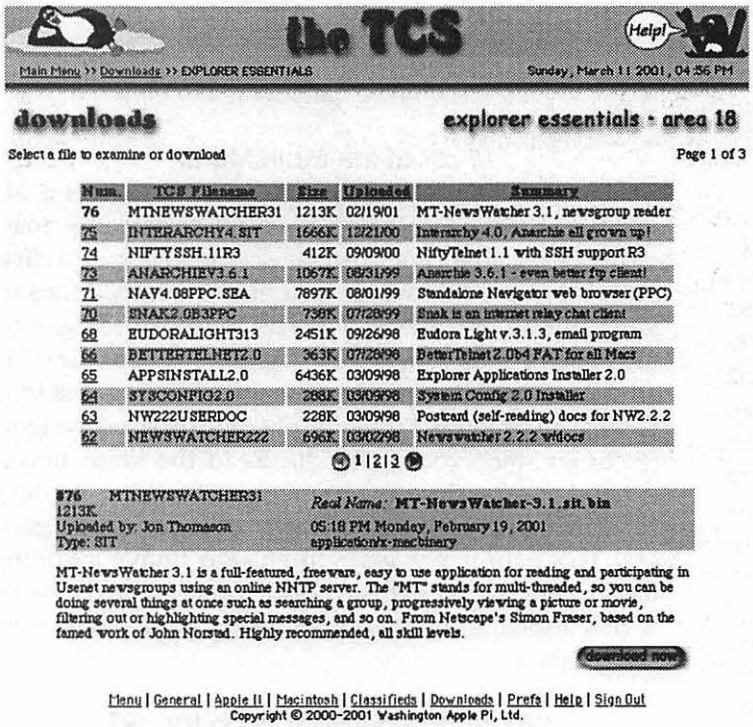



*Figure 3*

"For the time being, at least, both the text-based and Web access to the TCS will be available; anything entered by one means of access will be accessible by the other."

have set. Below the list of file areas you can go to an area not selected in your preferences, or reset preferences. You can search for files by key words. You can reset how many days to show file uploads as "new." As always, help is at the drowning penguin.

Click on an area and see what's there. *(See Figure 3.)*

Explorer Essentials is our example. By default, files in any area are sorted by file number, but you can change the sort order by clicking on the headers above the short descriptions. Go to the next page of descriptions by clicking on a number or arrow, shown after the list. Click on a file of interest to read a longer description below. Then "download now"! Or use the links at the bottom of the page to go to your next destination.

### Next!

Click the link to the Apple II conference: *(See Figure 4.)*

You can see that only two boards, or topic areas, are showing. There are no new messages (since you last looked) on those boards. To read messages on other boards on this conference, click the double arrow to select another board, or change your Apple II conference preferences to show more boards.

### I prefer

*(See Figure 5.)*

Here are all the message boards available on the Apple II conference. Click to insert a checkmark if you want to make that board visible on your next visit to the conference. There are two general kinds of preferences: conference and downloads, and member preferences. The other conference and downloads preference pages are similar to this one. To see member preferences, click on the Member tab: *(See Figure 6.)*

Here is member information, such as your e-mail address. You can also change your password.

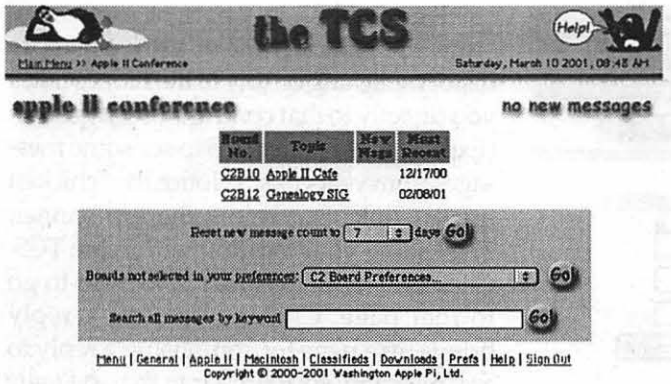



*Figure 4*

### Messages

Click on the Macintosh link at the bottom of the page:

*(See Figure 7.)*

Read all new messages on this conference by clicking on the "read all new messages" link at the upper right, or read new messages on any board by clicking on a number in the "New Msgs" column. Go to see what topics are available on any board by clicking on its number or name. Click on the drowning penguin to find help for any page. (Help for Conference 1 is shown in *Figure 8*).

Clicking on any board name or number brings you to a list of topics on that board. Shown in Figure 9 is

## Cookies and Web TCS

Since each loading of a Web page is otherwise a separate event, we have to use cookies, which keep track of some information about what you have done in a Web TCS session, in order to make the user experience coherent—for instance, which messages you have read—while on Web TCS. The cookies are small files that we send to your computer containing such information. Some browsers permit accepting cookies from only designated domains; you can tell them to accept only from webtcs.wap.org. In any case the cookies expire when you sign off of Web TCS, and vanish completely when you quit your browser.

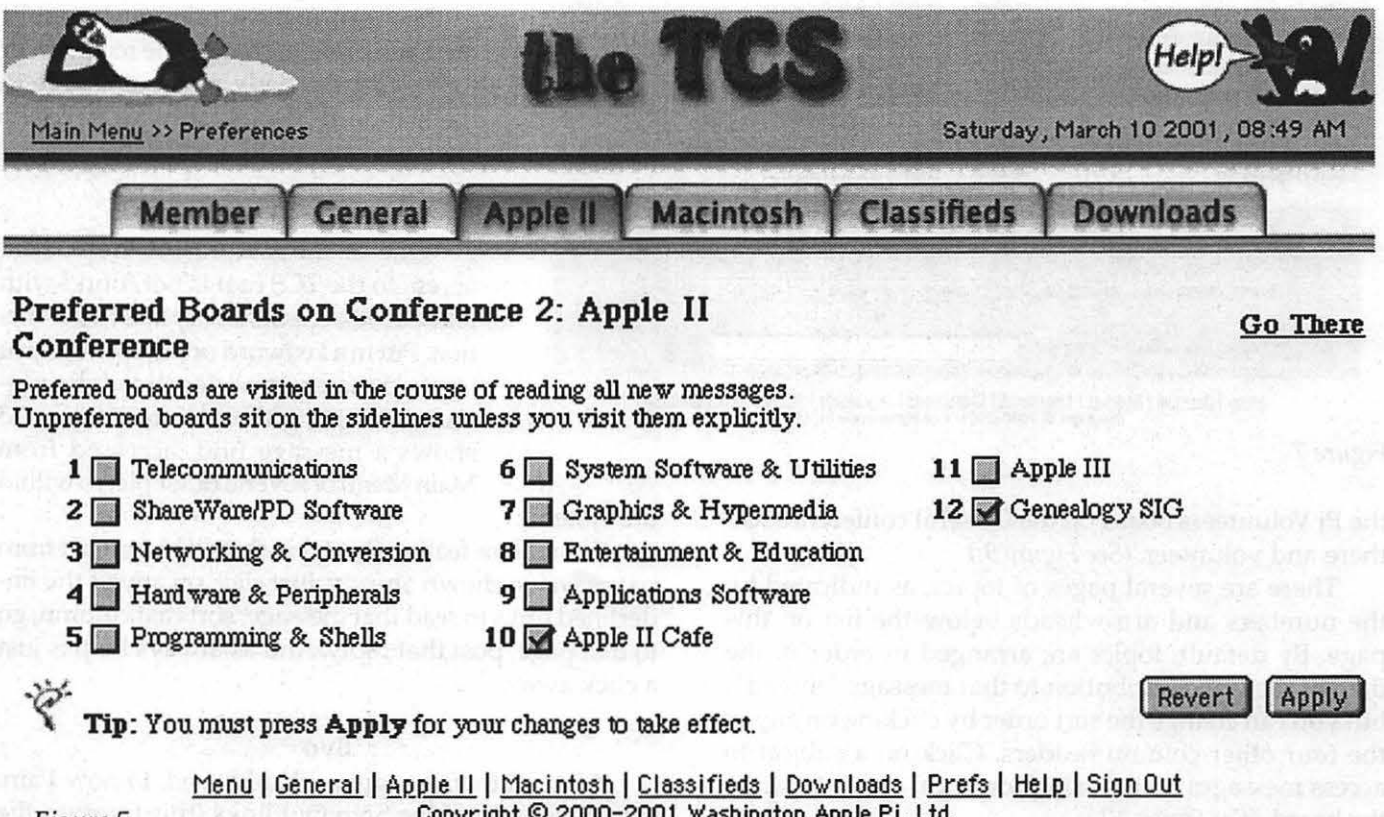



*Figure 5*

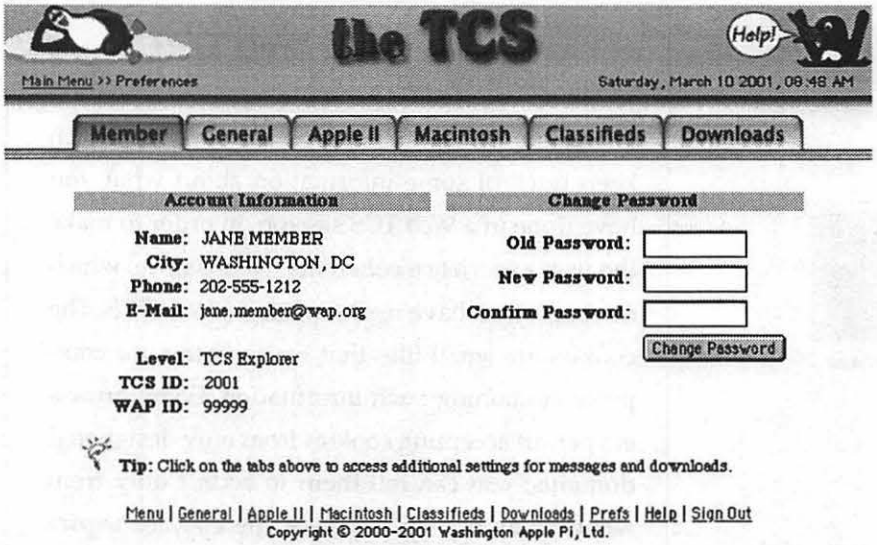



*Figure 6*

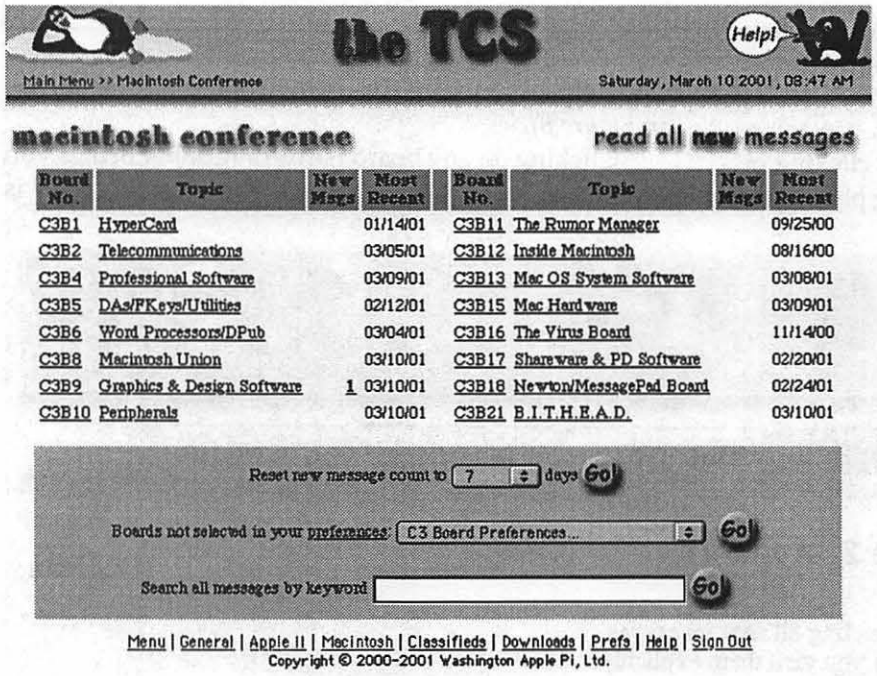



*Figure 7*

the Pi Volunteers board on the General conference. Go there and volunteer. *(See Figure 9.)*

There are several pages of topics, as indicated by the numbers and arrowheads below the list on this page. By default, topics are arranged in order of the date of the last contribution to that message "thread", but you can change the sort order by clicking on any of the four other column headers. Click on a subject to access messages on that topic, or begin a new topic on the board. *(See Figure 10.)*

Figure 10 shows part of a message "thread;" you can hide or show the reply history. Clicking on any of the names takes you directly to that contributor's message. (Explore areas of the TCS to see some messages from years past.) Notice the "chicken tracks" links just below the top banner. They show your location within the TCS. Click on any underlined link there to go to that page. Clicking on Post a reply brings up a page for composing a reply to any message, very similar to that in *Figure 11*, which is for a creating a new topic.

### Composing your opus

Figure 11 shows a typical message-composition page; enter a subject, a recipient in the To: field (or leave it to All), and type in your message in the area provided. You can make the message private, post it, or cancel it if you think better of the whole thing.

If you have posted a message and, after reading it, want to edit it, there is, of course, a button to click to make changes; *see Figure 12*:

You can make a previously public message private, change the recipient or topic, edit the body of the message in the standard Macintosh way, save the changes—or delete it entirely.

### Find it

One of the features of Web-based access to the TCS that is not found with text-based access is a very fast Find function. Put in a keyword or phrase, and you can find messages or download descriptions containing those words. *Figure 13* shows a message find, accessed from Main Menu or several other places within the system:

You will see features here that should be familiar from pages we've shown already. Just click on any of the underlined links to read that message, sort that column, go to that page, post that reply. And as always help is just a click away.

### Bye

After all this, you are probably tired. I know I am. Please use one of the Sign Out links (this frees up the

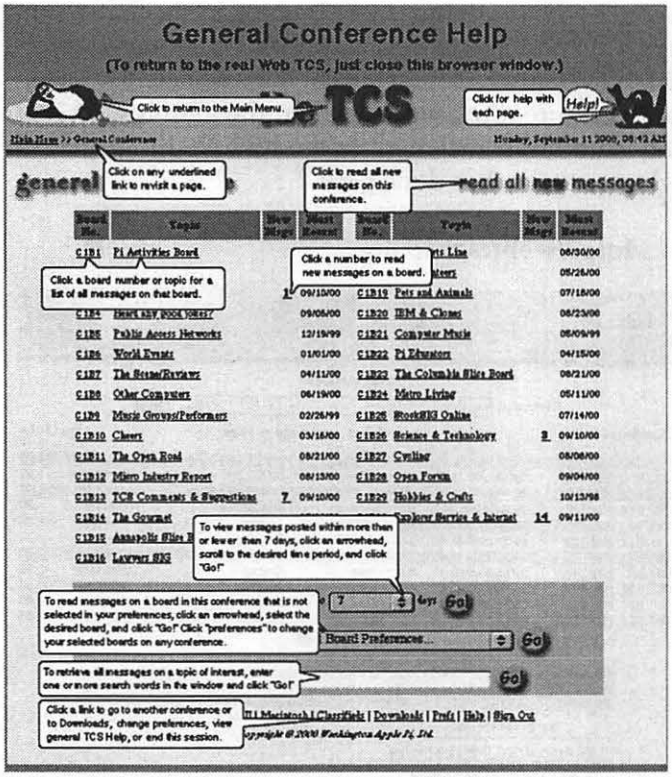



*Figure 8*

*Figure 9*

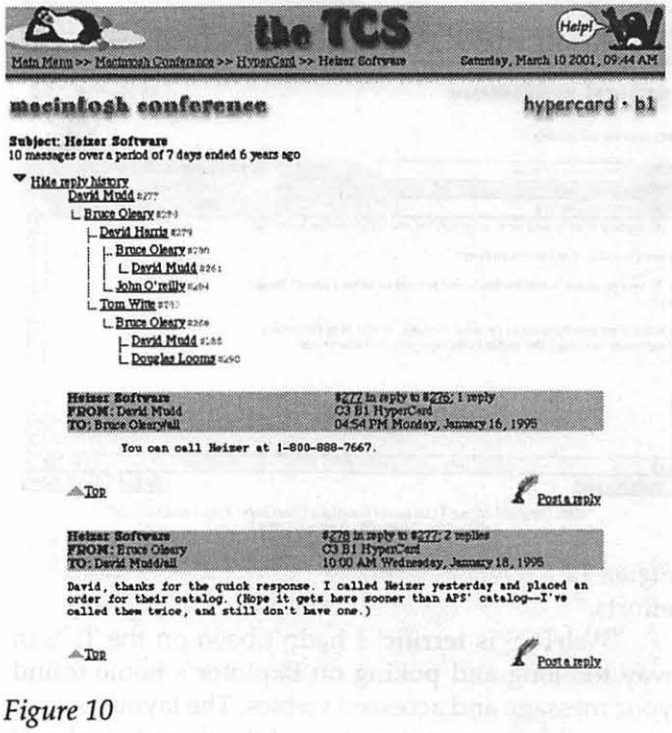



*Figure 10*

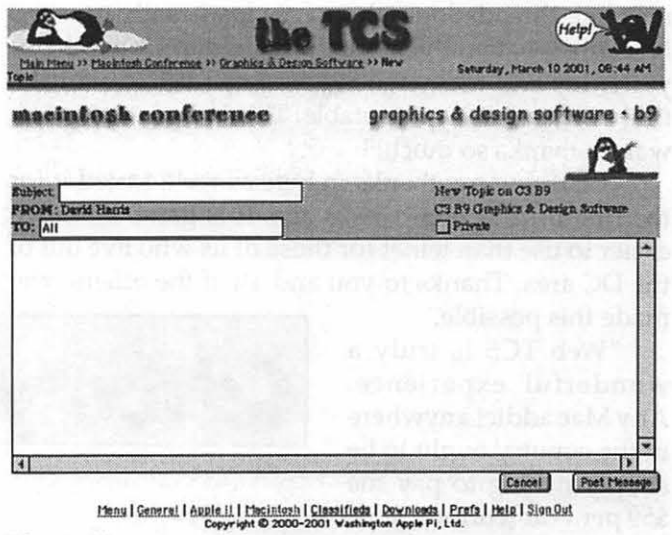



*Figure 11*

system for someone else). And come back again. *(See Figure 14.)*

### Details

What are the requirements for having full access to the Web-based system? You must be a Washington Apple Pi member, with TCS Classic or Explorer-level access, have Internet access, a Web browser, and be willing to accept our friendly cookies. By the time this article is published we may also have guest pass access, which will give others a limited view of the TCS, to see if they wish to sign up for the full experience. Others who have done so say:

### Testimonials

"Is this great stuff, or is it! Never expected to see the day. Thanks to Jon and ALL. Just can't get over it!!!!"

"Have finally been able to get to the TCS on the web. Don't know what took me so long. This is a wonderful thing you have done. Thanks very much for your

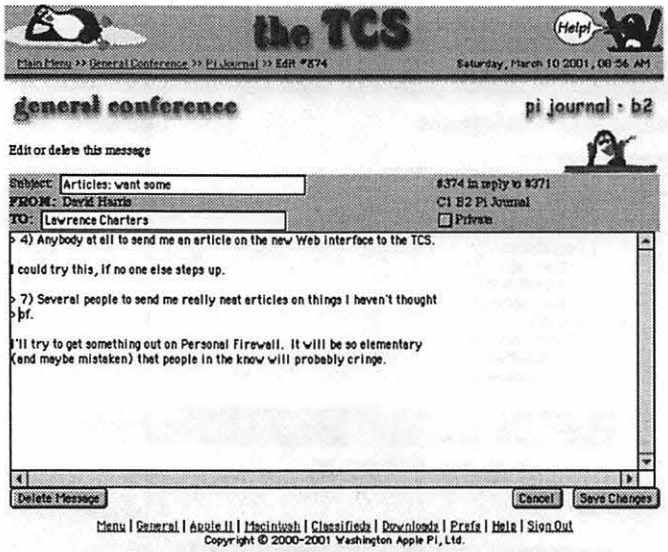



*Figure 12*

efforts."

"WebTCS is terrific! I hadn't been on the TCS in way too long and poking on Explorer's home found your message and accessed webtcs. The layout is easy, nice on the eyes, organization of the threads makes it so much easier to follow, plus however presentable the message threads look, the pages load really quickly! Not sure what you've been doing under the hood, but yesterday and today when I accessed WEBtcs for the first time, seemed quite stable. This is a great step forward—thanks so much!"

"I'll throw my thanks in here as well. I tried it for the first time several weeks ago. It is great. So much easier to use than telnet for those of us who live out of the DC area. Thanks to you and all of the others who made this possible."

"Web TCS is truly a wonderful experience. Any Mac addict anywhere in the country ought to be simply itching to pay the $59 per year [editor's note: $39 Pi membership renewal plus $20 TCS subscription] to be part of this resource. What a fitting beginning for the new millenium!"

And Jon Thomason speaks for the crew: "If there's one comment I keep hearing about the web-based TCS that I find truly rewarding, it's that people who'd (all but?) lost interest in the TCS years ago are suddenly jazzed about participating again. If that's even just a fad, I'll take it. If it's a bona fide vision of the future, I'm awestruck. On the assumption that the truth lies somewhere in the middle, I'm proud of what our team has done here."

**http://webtcs.wap.org** ■

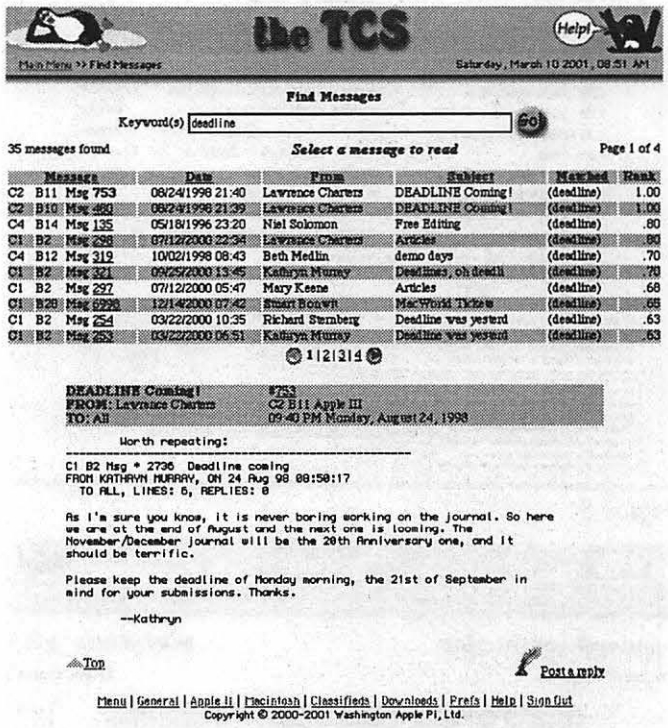



*Figure 13*

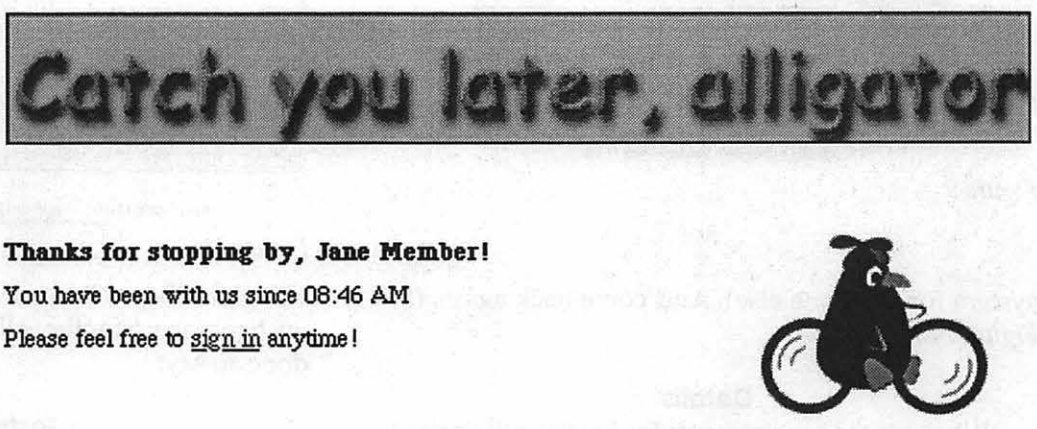



*Figure 14*

# Hitch your wagon to a star with TCS

## the same old same old NEW TCS!

**(and you'll be on cloud 9)**

Now you can revel in discussions of software, hardware, jokes, recipes, sports, cars, enjoy WAP comaraderie *while* asking questions and finding answers about your computer —

on the 'net

Join the penguins at

# http://webtcs.wap.org

All present TCS users—you have access now.

You need to be:

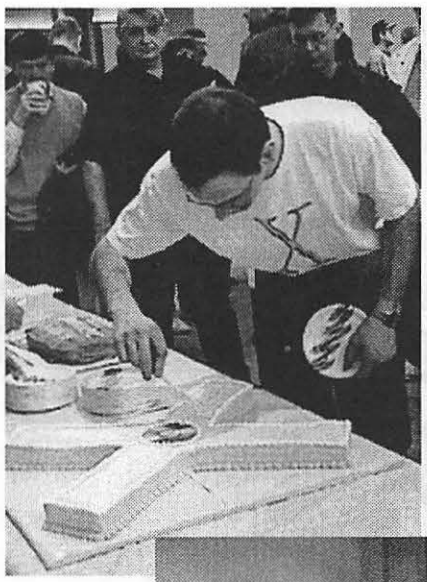
1. A Pi member ($49 first year, $39.00 renewal)
2. Have TCS access ($20.00 per year)

WAP members who aren't on the TCS—
Guest Passes available soon

For more information or to sign up:

Phone: (301) 984-0330 or
E-mail: office@wap.org

# More OS X Party Moments

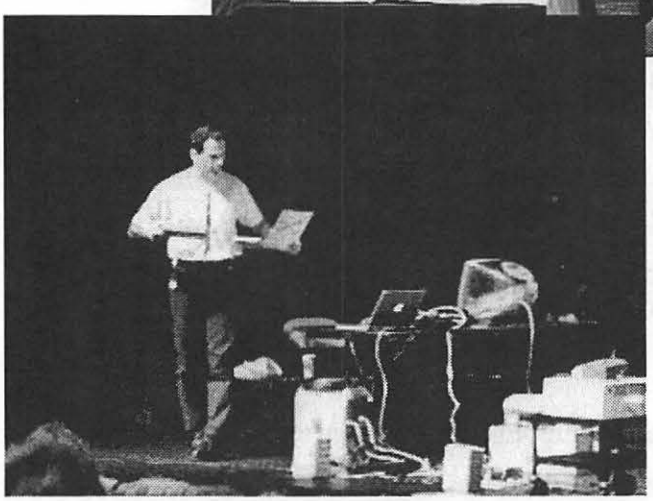


*Cutting the cake.*

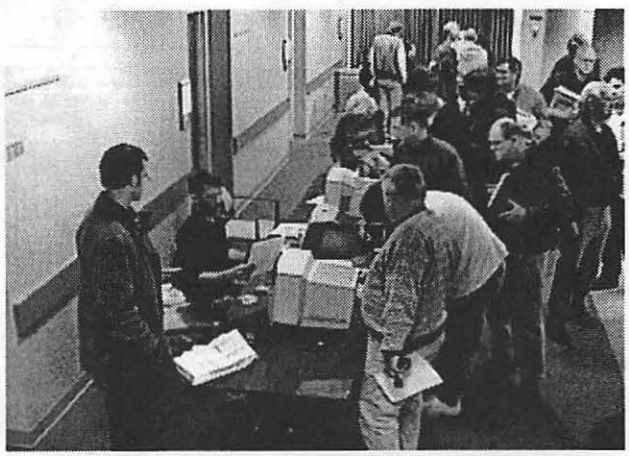
*Beth likes blue*

*She bought OS X!*

*Birthday boys*



*The demo*



*Installing OS X*

# Macintosh Computers in a Law Firm

by Dave Weikert

BOTH APPLE Computer and the Blumenfeld & Cohen Technology Law Group where I work, nurture a profound sense of design and style. Striking Apple designs include the iMac, iBook, PowerBook G3, the G4 Cube and the G3 and G4 Minitowers. The recent Macintosh computers, especially the iMacs and PowerBooks, complement our office design with their own peerless style. The offices will even look better as we take delivery of the G4 Cube and G4 Minitowers and Titanium PowerBook recently ordered.

Blumenfeld & Cohen's style is evidenced in the light, airy design, individual office layouts, color schemes, furnishings and a few, well placed curvilinear walls. Following figures exemplify some of our more contemporary, outstanding design aspects.

The main access for clients and visitors is through the lobby and reception area. Three additional entrances lead directly to corridors that conveniently access individual offices and conference rooms.

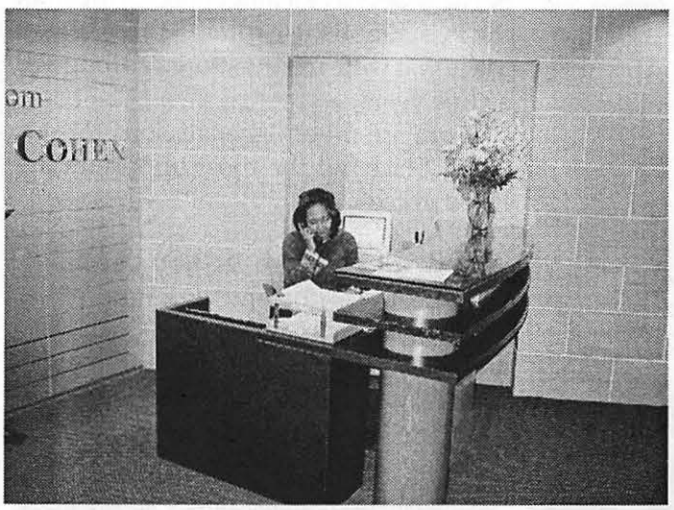


*Figure 1 – You can see the Bondi Blue iMac peeking over the stylish reception counter. Cedon is busy answering incoming calls.*

All Partners occupy offices overlooking Massachusetts Avenue. The contemporary work station furniture is fabricated from a light colored birch wood. The Attorney's offices have similar tables, guest chairs and workstation furniture as those found in the Partner's offices. They also occupy exterior offices with a view of the Washington skyline. Paralegal and other support staff are housed in interior offices; most of which are equipped as single workstations.

A "Delivery Tunnel" permits outside deliveries of mail, packages and supplies to the Administrative Support and Copier room and Central Files room without disrupting workspace corridor traffic. The tunnel also leads to a kitchen and seating area for sit-down lunches and for the monthly birthday parties *(see Figure 3)*.

*Figure 2 – Partners' offices include couches and overstuffed chairs as well as guest chairs and a table. The left edge of a workstation is visible at the right edge of the photo.*

There are three conference spaces for meetings and conference calls. The largest room can be subdivided with a built in, folding partition to create two rooms. Each conference room is equipped with 10/100BaseT Ethernet ports and power receptacles on sidewalls and in the floor.

### What? You Use Macs?

Believe it or not, computers from the dark side are almost non-existent at Blumenfeld & Cohen's, Washington, DC office. We have two PCs for the accounting department and a general utility PC for some other functions, which I will address later. All the other computers are Macs.

However, the San Francisco office, which is about a third of our size, only uses PCs and the OS from the

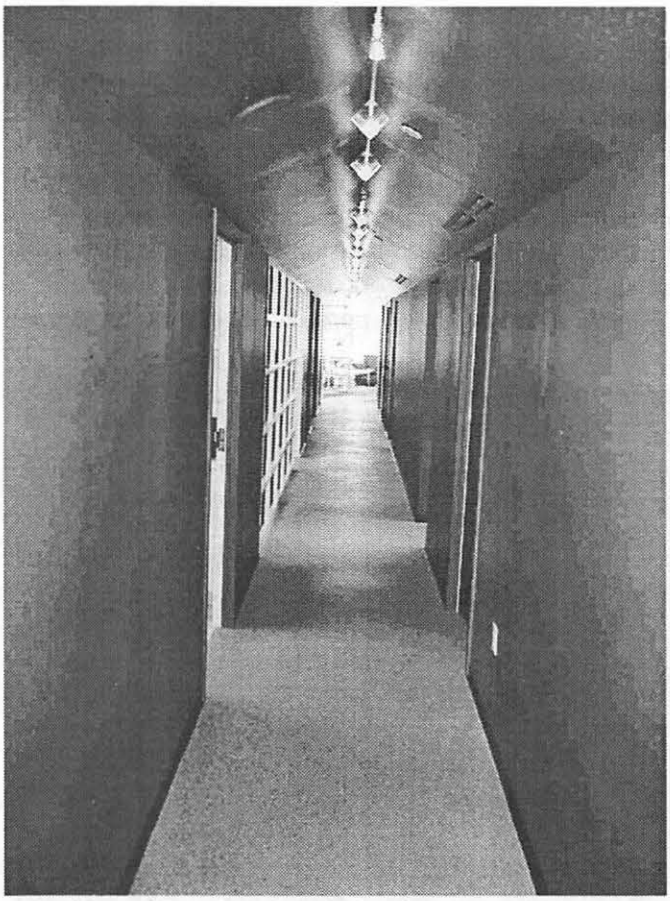


*Figure 3 – The first door on the left leads to the copy and supply area and the glassed grid area on the left leads to the kitchen and eating area. Doors on the right hand side of the tunnel lead to supply and file areas.*

Evil Empire. We installed our LAN and integrated with the Internet over a year ago. The San Francisco office is just now completing their LAN and their integration with the Internet. Could the reason be that they use PCs, Windows and a Windows NT server? One wonders...

With computers from the dark side so prevalent in most legal and business offices, how can Blumenfeld & Cohen's, Washington, DC office survive and even flourish with Macs? There are a number of reasons for this:

- The two senior partners like and support Macs without any reservations, having experienced problems early on with PCs when the firm started, especially trying to multi-task under early Windows versions.
- We choose to use software that produces document file formats and functions that are interoperable between Macs and PCs.
- A significant amount of our legal research is performed using a Web browser and that usually makes little difference whether used on a Mac or a PC.
- The Macs require less cost and time to maintain and support than the PCs.
- Macs have a number of functions not available on the PCs such as the Location Manager; critical to supporting attorneys on our LAN, on travel and at home.
- The User Interface for the Finder and all applications is consistent when developers follow Apple's guidelines; Microsoft apparently does not follow guidelines because each application in the Microsoft Office suite uses different conventions.
- The Macs, except for use of a two button mouse for Contextual Menus, are easier to use and more productive than the PCs.
- The Macs have a longer useful life than the PCs. We still use some G3 accelerated Macs that were manufactured as long ago as five years.

There are other lesser reasons for our using Macs but the most important are listed above.

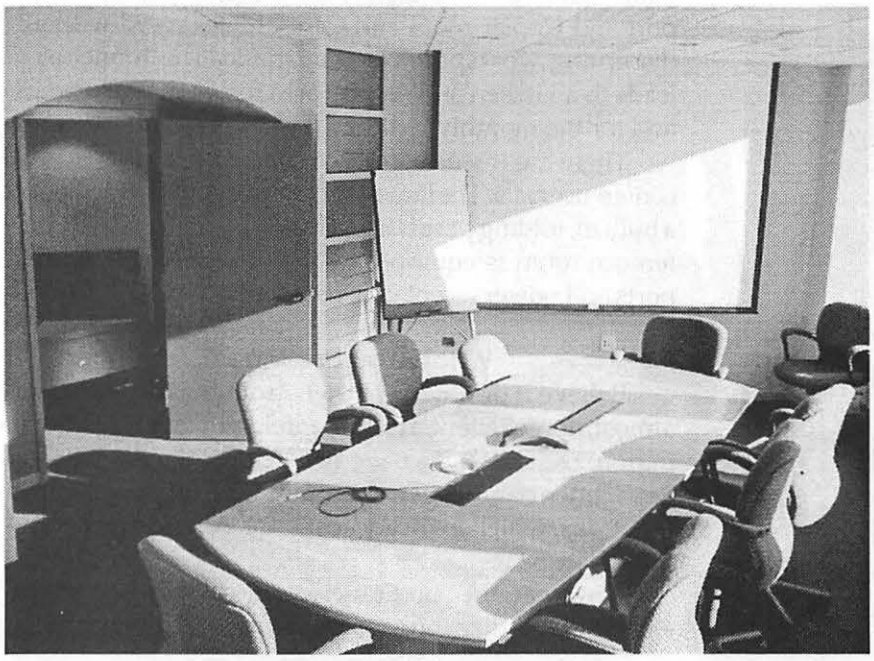


*Figure 4 – This is one of the conference rooms we use for clients and visitors. One slot in the table covers seven –10/100BaseT Ethernet ports connected to our LAN. The other slot covers two – four plug power strips.*

### What Software Do You Use?

Each Macintosh is running either Macintosh OS 8.6 or Macintosh OS 9.0.4 and is configured with a standard set of applications and utilities. The standard-

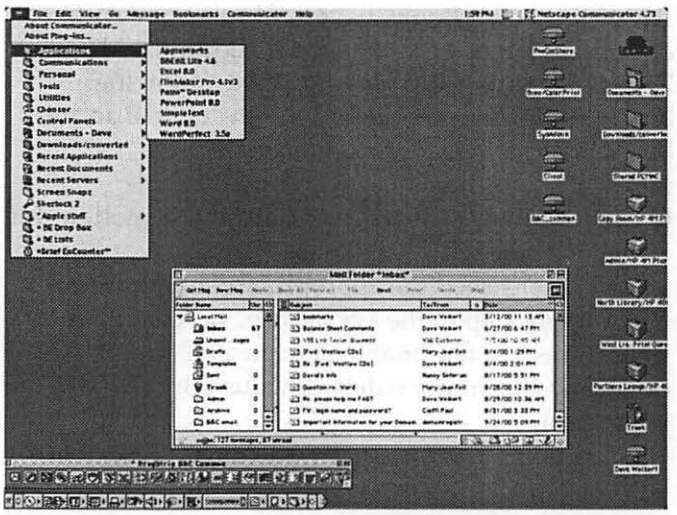


*Figure 5 – A screen capture of my Desktop. Note the accessibility of applications under the Apple menu in the upper left and the DragStrip along bottom left. The right side shows the mounted, shared folders (the ones with the "tail"), Desktop Printers, folders and hard disk.*

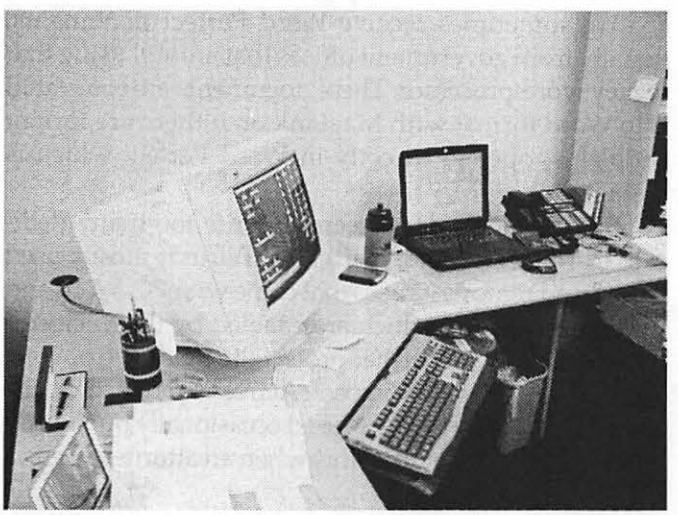


*Figure 6 – A docked PowerBook with monitor, keyboard and mouse. The Palm cradle, hub and USB drive were not connected at the time this picture was taken.*

ized configuration makes it easy to create a master disk image for installation on all computers. It also standardizes each computer so users and system administrators can operate any Mac without having to adjust for differences or fumble around to find something that they know should be installed.

Under the Apple Menu, we have created an Applications folder, a Communications folder, Utilities folder and an Apple Menu items folder that collects the Apple System Profiler, Calculator, Key Caps, Scrapbook and Stickies. The Chooser, Control Panels folder, Sherlock and Network Browser are all directly accessible under the Apple Menu and not in any folder. In addition, the use of leading spaces and the degree sign force the Menu items and folders into a pre-selected order.

The Applications folder contains aliases to AppleWorks, BBEdit Lite, Brief Encounter, FileMaker, Microsoft Office and Word Perfect.

Adobe Acrobat Reader, Mail Siphon II, Netscape Communicator, ZTerm and three specialized legal research applications, Premise, Westlaw and LEXIS/NEXUS, have aliases in the Communications folder. We use Netscape Communicator for e-mail rather than a dedicated client such as Eudora.

The Utility folder includes aliases to DropStuff, DragStrip, MacLink, GraphicConverter, Norton AntiVirus and Stuffit Expander.

Except for the Systems folder, the Apple folders are moved to a folder positioned at the bottom of the "list view windows" to reduce clutter. That includes the Apple Applications folder, the Internet folder, the Utilities folder and other Apple goodies.

The applications and utilities under the Apple Menu are duplicated on a single click Launch Bar. We use DragStrip rather than the Apple supplied Launcher to control icon size, bar position and application positions inside the strip. Some of our users prefer to use the Apple Menu to launch applications and some prefer the DragStrip so we provide both on all setups.

### What Software Do You Use Most Often?

Our primary general office software is Microsoft Office 8.0. We use Word heavily, Excel moderately and PowerPoint occasionally. Any document we receive can either be read or modified in Word 8.0 or translated with MacLink into Word 8.0 documents. Since many other law offices use Microsoft Office on their PCs, the advantage of a compatible file format and function makes it easy on both them and us.

Brief Encounter is a legal time and expense recording program used in conjunction with Brief Accounting for billing clients. When connected to the LAN, Brief Encounter requests updated information such as labor category rates, matters (client jobs) from the Brief Accounting server and reports accumulated time and expense data. Brief Encounter can be used even when not connected to the LAN. Attorneys that are on travel can e-mail time and expense reports in a format that can be imported into the Brief Accounting server. Brief Encounter has a multi event timer so those attorneys can track how much time they spend on all matters. Obviously, Brief Encounter is used daily.

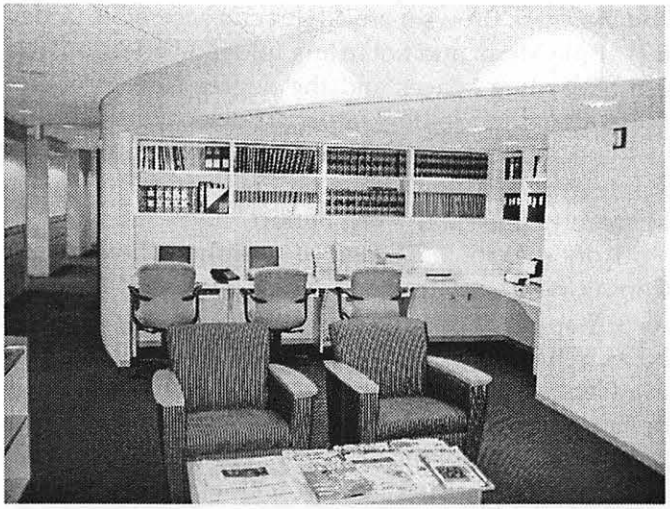


*Figure 7 – The Research Library includes reference material and computers that access the Internet. The PowerCenter Mac clone at the right side of the iMacs will be replaced by an iMac. Note the niche the research library computer area occupies formed by a cutout of the curvilinear interior wall.*

Netscape Communicator, often in conjunction with Acrobat Reader, is used daily for Web research and for e-mail. Premise, Westlaw and LEXIS/NEXUS are used by the attorneys and by the paralegal staff when performing research for the attorneys although the paralegal staff are using the Web-based versions more and more instead of the dedicated applications.

Mail Siphon II is particularly useful for our Road Warriors (attorneys on travel and limited to a dial up modem connection). Mail Siphon retrieves the titles and first 30 or so lines of all of the messages on the Mail Server. Since the mail is not downloaded but just displayed, the attorney can see what messages exist much more quickly than if they were downloaded. You can reply to any message seen in Mail Siphon and Mail Siphon also lets you delete mail you do not wish to download such as SPAM or UCE. Attorneys often send each other messages with large attachments (500 Kbytes to 2000 Kbytes). Try downloading a 2-Megabyte file over a 56K modem that often operates at much less than 56K and you can readily see the worth of Mail Siphon while on dial-up.

All Attorneys use Palm Organizers and the Palm Desktop application is installed on all Attorneys' Macs for daily use. The Palm Desktop application and Palm Organizer are synchronized so information entered in either is available on both. Support staff installations include Claris Organizer, which was used as the model by 3COM to program the Palm Desktop application.

All of the PowerBooks have multiple configurations controlled by the Macintosh OS Location Manager. These include a setup for each of the following:

- TCP/IP for the office LAN with static IP address
- TCP/IP for a generic LAN with DHCP
- TCP/IP for home use with DSL or Cable
- Remote Access and PPP dial up via modem for travel or home use.

The user selects the appropriate configuration during an early step in the OS startup. Try changing configurations in a reasonable time on a PC running Windows and it is immediately obvious why the Mac OS is superior.

The utility software most used is Stuffit Expander and MacLink.

### What Else Do You Use?

BBEdit Lite, AppleWorks and FileMaker Pro are used only occasionally by only a few staff and by the System Administrators, who maintain a database, create drawings and clean up garbled text.

We sometimes receive Word Perfect documents, usually from government offices that are still using that legacy word processor. These documents are translated into Word format with MacLink or, if there are format problems, opened directly in Word Perfect which is installed on all Macs.

Since vandals don't seem to write too many dedicated viruses for Macs, Norton AntiVirus is mostly used to find and remove viruses that come with PC, Word and Excel files, most of which are enabled by the Microsoft macro function. To further protect the Macs, we operate Word and Excel with Microsoft Active-X and macros disabled. GraphicConverter is used occasionally but mostly by the System Administrators when an attorney needs a file converted.

When troubleshooting suspected directory problems, Apple's Disk First Aid is used as a prelude to running Disk Warrior, our primary tool for correcting damage. Norton Utilities (Disk Doctor and Speed Disk) and TechTool Pro are also used if required. The System Administrators also use programs such as Mac TCP Watcher or AG Net Tools for checking the network and Apple Profile Manager and Newer Gauge suite for checking computer configuration and performance.

VirtualPC with Windows 98 is installed on a few computers that need that capability. Virtual PC is required to execute a run time version of a program called RecordMate, which is programmed in Microsoft Access. We could run RecordMate on a PC but the users primarily need programs that are part of our standard Mac

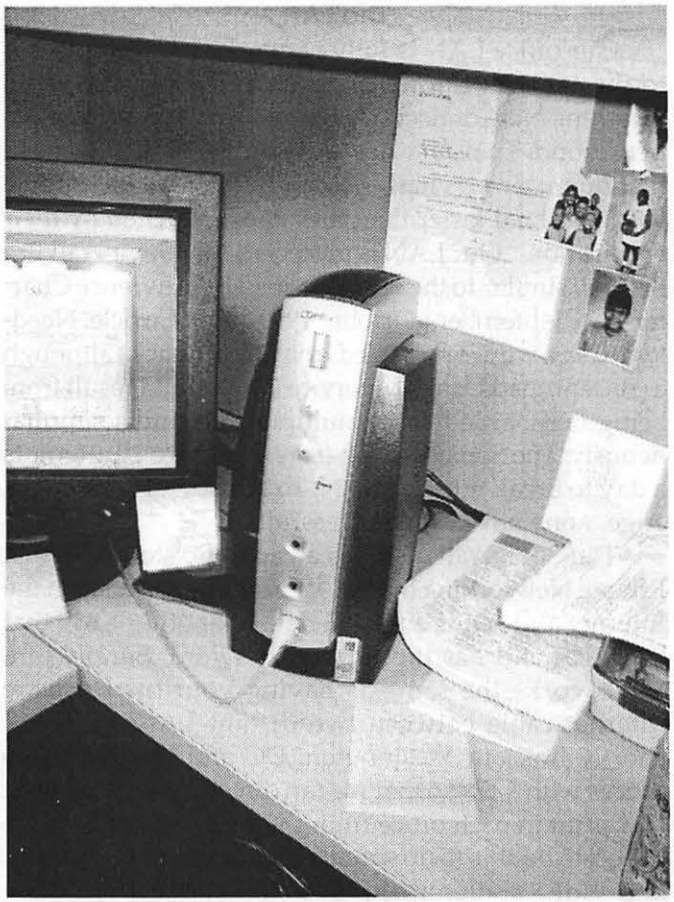


*Figure 8 – The iPaq and monitor with the silver and black motif, the only selection available.*

setup. Why buy two different computers when one with emulation works well. Besides, we are stubbornly Mac centric where there is no advantage to switch.

We ran a PC program called TABS (Time And Billing System) under SoftWindows in DOS Mode before our recent change to Brief Encounter. While TABS is an excellent program, and has been available in a Windows version for years, our Mac-centric users were very unhappy with the slower speed and inconvenience of running the program under emulation, and the even slower speed of the Windows version running under emulation.

To properly evaluate that Brief Encounter and TABS generated identical billing data, we planned to use both during an overlapping two-month changeover. Results were so good at the end of the first month that we decided to stop using TABS and SoftWindows immediately. Everybody in the firm is pleased with the change to Brief Encounter.

### Tell Me about Your Computers

All attorneys have 1999 (Lombard) or 2000 (Pismo) PowerBook G3s equipped with 128 or 192 MB of RAM. They all have Bookendz docking stations on their desktops connected to a 17-inch monitor and a 4-port or 7-port USB hub that connects to a full size keyboard, a one or two button mouse, Palm Organizer cradle and external USB floppy or ZIP drives. The PowerBooks then become the primary computer for attorneys whether at their desks or on travel. This bypasses the problem of synchronizing desktop and laptop computers.

We also ordered our first 2001 Titanium PowerBook (Ti Book) with 500 MHz G4 processor and 256 MB RAM for delivery in March 2001. The larger screen size coupled with lighter weight lead us to believe that the Ti Book will be popular with our attorneys. A vendor has already announced they are designing a docking station for manufacture and all other necessary peripherals for docking already exist. *(See Figure 6.)*

The Paralegal staff uses beige G3s with 128 MB of RAM although their G3s will be replaced with G4 Minitowers in March 2001. Our Office Administrator also uses a beige G3, which will be similarly replaced by a G4 Cube at the same time.

The remaining administrative support staff use PowerMac 7500s upgraded with a Newer (R.I.P.[1]) G3 Accelerator Card. This gives a CPU speed somewhat faster than the beige G3s but the native PowerMac 7500 memory access and hard drive access are slower. Thus PowerMac 7500s are not quite as capable as our 266 MHz CPU G3s. Overall, the PowerMac 7500 computers perform quite well for four to five year old computers. We have had only two failures since they were purchased and that was a power switch on one and a CD ROM drive on another. However, the PowerMac 7500s, even with G3 Accelerator Cards, are reaching the limit of their usefulness. They mostly have 2-GB SCSI hard drives and many have less than ten-percent free space. SCSI drives cost more than ATA drives used in later computers. It is not attractive to replace the SCSI drives with larger ones considering the computers age and other limitations. We are eagerly waiting for Apple to release a low cost G4 Cube priced similarly to the middle iMac level or an iMac with a 17-inch monitor. If either happens, we will start to selectively replace the 7500s.

Our administrative assistant and the receptionist use iMacs. There are also two iMacs in the Research Library for use in research and an additional one is on order. *(See Figure 7.)*

The two System Administrators have beige G3s and

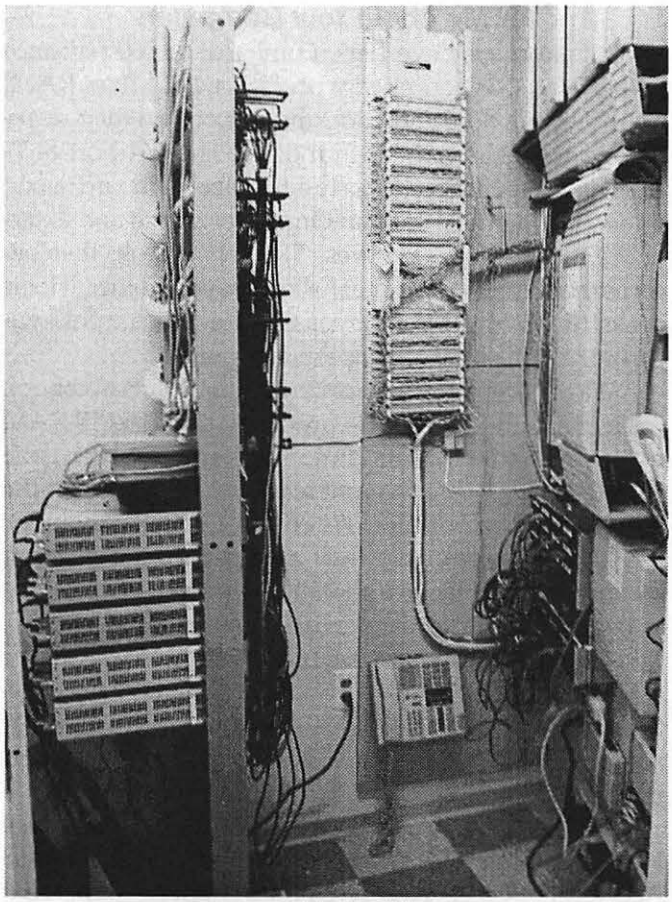


*Figure 9. The five bay switches can be seen on the left-hand side underneath the patch panels. The firewall is between the bay switches and patch panel and the telephone system is on the far right.*

there are no current plans to replace either the System Administrators or the G3s ;-).

By the way, the accountings PCs manufactured by Compaq are called iPaqs and use the Windows 2000 Professional OS. These cute little buggers have the same Universal Serial Bus (USB) interface as recent Macintosh computers and no parallel or serial ports. They are much more cheaply made than the iMac and have nothing of the iMac style, however the accountants are happy to have them instead of their three year old PCs. *(See Figure 8.)*

We use a three-year-old PC running Windows 2000 Professional primarily for two things. It is useful for running .exe files that may for some reason not run well under VirtualPC. The PC is also imperative for translating mail that we sometimes receive in the Microsoft Outlook unique mail format instead of the "open standards" that Microsoft claims to support. Message in this format can be forwarded to a mailbox named "outlookrepair" and retrieved from the PC using Microsoft Outlook.

### The LAN

Our office LAN is fully networked and connected to the Internet through a high speed DSL line from Rhythms NetConnections that is runs at 7.1 Megabits per second. Transfer rates on incoming mail are so fast, that our attorneys have observed that attachments often download faster than they can be opened by their applications. Our LAN is protected by a SonicWall Pro firewall similar to the one described by Lawrence Charters in a September / October 1999 *Journal* article. Needless to say, we are protected from most attacks although a concentrated Denial of Service (DoS) could result from being bombarded from multiple computers simultaneously. The SonicWall log flags about 5 to 20 attempts a day to break into our LAN. To the best of my knowledge, none have been successful.

The SonicWall also has a capability to do Virtual Private Networking (VPN). VPN opens a tunnel on the Internet and sends encoded data to another LAN that has VPN and has the correct password. Simply put, VPN works the same as having your own private Internet cable between two distant LANs. We will shortly link our Washington, DC and San Francisco offices with VPN so that we can directly exchange files, and print in each office from the other. Over time we expect to be able to do simultaneous document markup and video conferencing over the connection. Once linked, the San Francisco office can run their Brief Accounting client programs and access data from the Brief Accounting server in our office. The VPN interface between our LANs also permits update and reporting of Brief Encounter data from San Francisco with the Brief Accounting server.

Distribution of the LAN to individual offices is through 100BaseT Ethernet premise cables connected to five 24-port Bay Networks 10/100 auto sensing, auto negotiation switched hubs via patch panels. Each office has four jacks that permit flexibility of placement of the computers.

Six Hewlett Packard LaserJet printers (two – 4MPlus, two – 4000N and two –4050N) are accessible on the LAN from any Mac or PC. The printers are distributed around the primary corridor in dedicated print cubicles. The two LaserJet 4050N printers are addressed through a print queue running on the Blue and White G3 server. In addition to the networked printers, the Accounting iPaqs are each connected to a dedicated Brother 1250 Laser printer through a USB interface. The Brother 1250 Laser printers are located within each accountant's office to maintain control over sensitive information. We have a Color LaserJet 4550N on order for delivery in

March 2001 along with a Hewlett Packard scanner with an Automatic Document Feeder (ADF).

### Our Servers

We maintain a Blue and White G3 AppleShare IP (ASIP 6.2) file and print server which is backed up onto DDS 4 tapes every evening. Users are responsible for keeping files that they need to have backed up on their own folder on the server.

A beige G3 minitower hosts an SMTP mail server that processes only outgoing mail. We added this because our ISP outsources mail and the contractor limits attachment sizes to 5 MB. With our own server, we can send attachment without size limits.

The remaining server is another beige G3 minitower, which runs Brief Accounting, a law practice oriented, server based accounting system created by a small Canadian firm located in the suburbs of Vancouver. Brief Accounting is written in cross-platform Acius 4D server database and may be served on either Macs or PCs. The cross-platform Brief Accounting client software is also available for Macs and PCs. This is perfect for us because our two DC office accounting personnel have PCs, our Office Administrator has a Mac and the San Francisco office administrator/accountant has a PC. We have a single integrated accounting system but data elements such as clients and banks are different. However all of the differences are accommodated in the Brief Accounting server.

Two interesting side notes: The Brief Accounting and Brief Encounter developer, David Fisher-Fleming of Pan Pacific Professional, does all his development on Macs. He is also the original owner of a beautiful red MG TD roadster that looks immaculate. He flew down from Canada to install Brief Accounting and to teach our personnel how to use the program. It is unfortunate that Brief Accounting and its companion Brief Encounter are not better known as it is multi-platform and includes the functions of other PC only legal accounting systems. Brief Accounting information may be found at:

< http://www.briefaccounting.com>

And, of course, the link to David's MG TD:

< http://www.briefaccounting.com/mg/dff.htm >

The servers are centrally located in the System Administrator's office where they are directly accessible for monitoring and update *(see figure 10)*.

We contract for our POP mail with Cedant. We get 75 "free" mailboxes with the amount of disk storage we require. Cedant has recently added a Web-based mail function, which we are currently investigating. There is no extra charge for the Web-based mail but most of the attorneys' mail must be downloaded to their computers anyway so this may be of limited use except while on travel.

Blumenfeld & Cohen were one of the first dozen or so law firms with a Web site, on line since 1995. Periodic design changes have been made as Internet standards have evolved. We are currently updating our site content and design so you may find that the site has changed substantially if you have previously visited us. Stop by for a visit and an expanded description of our firm.

Cedant hosts our Web site at:
<http://technologylaw.com>.

The Cedant network connection provides a bandwidth-on-demand connection with Frontier Global Center, a Tier 1 provider servicing such giants as Yahoo! Netscape, and USA TODAY. Cedant is linked to FGC by a fiber optical cable–making it unnecessary to link to the Internet through an OC3 or T3 Telecom cir-

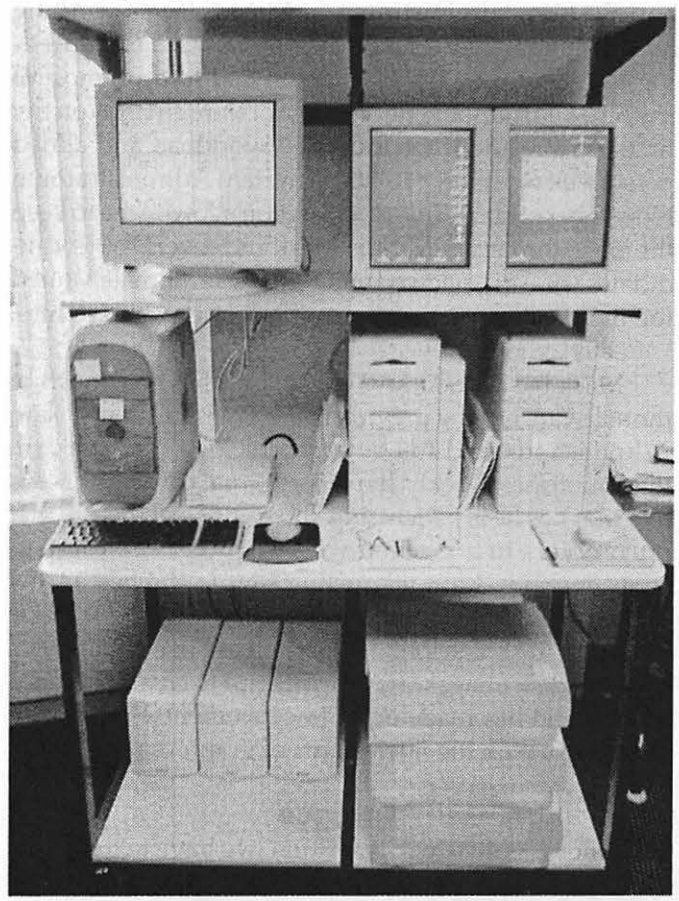


*Figure10 – The servers are arrayed on a LAN workstation so they may be easily accessed. The LAN workstation has rollers so it may be moved away from the wall to access the backs of the servers. On the bottom shelf, left, there are three APC UPS units and, on the right, three unassigned 7500/G3s.*

cuit... no telecom circuit means that downtime-causing circuit failure is virtually eliminated!

### Network and System Support

When I started with Blumenfeld & Cohen, about two and a half years ago, the DC office was about one-third the size it is now, networked with AppleTalk and interfaced to the Internet via dial-up modems. At first, I worked on a part-time basis just two days a week, approximately six hours a day. By summer of 1999, my workload had grown to about three, six-hour days per week as we added personnel. Although the AppleTalk network was inadequate for our needs, we knew that we would soon move to a new office that we could configure to our specifications. As the firm grew, we relocated to the new office in late fall 1999. As planned, our new location included an Ethernet LAN and a high speed dedicated connection to the Internet.

By this past summer, with the increase in personnel and System Administrator functions, I was working about 7 hours a day for four days a week and often needing to catch up on the weekend. I had to drop most of my other business clients because of the demands on my time. As a result of the increased workload and added personnel, we hired a full time System Administrator in November of 2000. This new position allowed me to keep the job in the family. My son Mark and several other candidates were interviewed and Mark was ultimately hired for the position. (No, I did not interview or hire him. ...Really! ...Honest!)

Mark has a good knowledge of Macs and much of the software having previously been a part-time System Administrator and full time graphic designer at a firm that publishes weekly housing journals. The attorneys like Mark as he is patient and shows none of the ego that often occurs in a position where nobody else can perform your job. I am instructing him to the best of my limited ability on the mail servers, firewall and the like. He has made some innovations and enhancements such as using disk images and AppleScript to create standard installs and has made other improvements. Mark is instructing me on the finer points of graphics programs.

### Epilogue

Since this article was written, we have taken delivery of the G4 Cube, G4 Minitowers, iMacs, HP Color LaserJet 4550N, HP scanner with ADF and UPS s. We expect delivery of the Ti PowerBook within the next few days. I could not resist adding one more picture, the G4 Cube which is now configured and in use *(see Figure 11).* ■

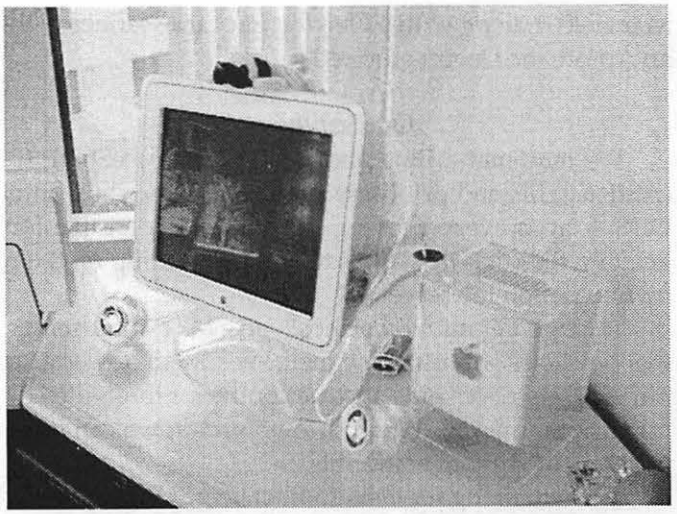


*Figure11 – The watchdog on top of the G4 cube keeps careful track of any interlopers that may steal inside to pine over the Cube.*

### The Author

*Dave Weikert is a part-time System Administrator and Consultant to Blumenfeld & Cohen. Dave designs and configures networks and Macintosh computers and provides installation, operational and maintenance support. Dave agrees that he is a Mac bigot and avoids PCs whenever possible. The majority of Dave's knowledge derives from working on the Washington Apple Pi TCS Crew with the experts such as Jon Thomason, Lawrence Charters, Rick Zeman and Lou Dunham. He also has been a regular service provider at the Tuesday night Macintosh Clinics.*

*Mark Weikert, full time System Administrator with Blumenfeld & Cohen took and processed the digital pictures and his wife Michele edited and helped rewrite the final drafts.*

[1] Newer Technology, Inc. filed for Chapter 7 bankruptcy in late January 2001. Newer was a leading designer of memory and acceleration products for Macintosh and led the way with many technical innovations and firsts including G3 and G4 accelerators for many later model Macintosh Power Mac computers. Notable Newer Utility freeware includes GURU, Gauge PRO and SpellTools.

# DigiCam 101

## (A Megapixel is *not* a Huge Pixel!!!)

**By Lou Pastura**

OK, OUR erstwhile Macintosh editor has convinced me that there's enough interest in this subject to warrant an article or two. I guess your response will determine whether he's correct...and whether I'm the right person to do the writing. What I hope to do in a few pages is give you an overview of the issues to consider as you contemplate moving from the world of traditional film photography and processing to digital imaging. Please bear in mind that I am only lightly touching on issues about which entire books have been written. At the end I'll point you to some Web resources for more detail from **real** experts.

### Why digital?

*Improved Results:* Right off the bat, I will personally **guarantee** that going digital will make you a better photographer. Pretty strong opening statement, huh? Think about it this way: one of the big differences between a run-of-the-mill snap shooter and a "pro" is the latter's willingness to expose multiple rolls of film to achieve the best possible image. With a digital camera, the playing field is leveled. You can take multiple images of a subject (with no expense for film, processing or printing) and decide later which one looks the best. My office wall is the repository for a number of prints that cause visitors to suggest that I'm a "great" photographer. I ordinarily don't go out of my way to explain that the four photos on the wall were painstakingly chosen from a cache of several hundred. When you take that many, **some** of them have to be good! With care and practice your knowledge and skills will improve, as will your batting average (that's the true difference between an amateur and a pro), but in the meantime, you can obtain outstanding results with the law of averages as your photographer's assistant.

*Immediate Feedback:* This benefit of "going digital" is twofold. The first relates to the previous item. When you take a picture, you can immediately review the results, erase it if you don't like it, and shoot again, as needed. The other feedback is for your subjects. Imagine the reaction of a group of children gathered around you to look at a picture of them that you've just taken, and that immediately appears on your camera's LCD screen. And that reaction is not limited to children...adults are not immune. (Adults, however, will complain more about how they look and want you to re-shoot the photo!)

*More Fun:* Take the reaction discussed in the previous paragraph and add the ability to easily and quickly put your images to use in a wide variety of ways:

- Email pictures of the kids to the grandparents
- Personalized greeting cards and postcards
- Personalized T-Shirts
- Novelties, e.g., cups, key chains, etc.

*More Uses:* Your only limit is your imagination. For example, I was having a problem with my gas fireplace. I tried to describe the mechanism to the customer service staff at the store with little success, and they needed to know the exact type of unit installed in order to resolve my problem. Of course the manuals and paperwork were safely filed away...so safely that I had no earthly idea where to find them. I took a picture of the mechanism, printed it and returned to the store. Problem solved. And remember: an image doesn't have to be printed to be useful. A photographic inventory of a valuable collection or of jewelry or household goods (an inventory for insurance?) can be easily and inexpensively stored on compact disc and archived in a safe place like a safety deposit box. And updating is also easy, fast and inexpensive.

### OK, digital it is...now what?

So now it's time to buy a camera. There are the traditional issues of point and shoot versus SLR (Single Lens Reflex) camera bodies, lens quality and speed and the camera's light sensitivity and size, weight and ergonomics. But there are also a whole slew of new things to consider such as resolution, internal storage (memory), image transfer, power options, viewfinder versatility, speed, focal length flexibility and archival storage. Let's review the traditional issues first and then move on to new issues raised in the digital world.

*Point and Shoot Versus SLR:* This one is easy. If you're currently using a point and shoot camera and you're happy with it, you'll likely be just as happy with a point and shoot digital. If, on the other hand, you prefer Single Lens Reflex with lots of buttons, option and controls, be prepared to spend more for the privilege. Note

that higher end (and higher resolution) point and shoot cameras will have a large subset of the features of the SLRs.

*Lens/Glass:* Just as your Mac's monitor is critical because it's the key interface between you and your machine, the lens is the part of the camera most critical to your success. All the gee-whiz camera features in the world will not help a picture that starts out unclear or distorted because of problems with the glass. This is not to say that some problems can't be corrected in the virtual darkroom of your computer, but this can be both frustrating and time consuming, and the correction is almost never as good as a well-shot original. Further, the result of any editing you do in the computer to either correct or enhance your image will be improved by a higher quality original. Look for the highest quality lens available in your price range. Glass is always better than plastic...but take care: all glass is not created equal. If in doubt, stick with major camera manufacturers like Olympus or Nikon. Lens speed (the lower f-stop number the better) and optical zoom (higher is better) capabilities are also important considerations that I'll discuss in more detail below.

Disclaimer: For digital photography, I am an unabashed Olympus fan and my bias will show throughout everything I write on this topic, so be prepared! [Disclaimer #2: the Mac editor is a Nikon and Olympus fan, too, so you are mostly forgiven.]

*ISO, Lens Aperture (f-stop) and Shutter Speed:* These three specifications combine to determine how light sensitive your camera will be. This, in turn, translates into how well it will perform in low and bright light, how much you will be able to control depth of field (the amount of the image that appears in perfect focus), and how much you will be able to minimize image problems due to camera movement. ISO is a measure of the light sensitivity of your camera's image capture medium (film in a traditional camera, a charge coupled device in the digital arena). A higher number indicates more sensitivity. More sensitivity means you can shoot with the lens closed down to a smaller opening, increasing depth of field, or you can shoot with a faster shutter speed, which will help "freeze" motion and reduce or eliminate problems due to camera shake. Higher ISO settings can, however, introduce noise on some cameras. In film cameras this appears as graininess in the pictures. Digital images will exhibit pixels that are too bright, too dim or off-color. All of these can be fixed after-the-fact, but as discussed earlier, it's a pain and the results are never as good as taking a good image to begin with.

*Ergonomics (All the Features in the World won't Help, if You don't Carry the Camera):* Traditional camera designs have been limited by the need for two places to store film that have to be positioned so that the film moves from one to the other with the shutter opening in between. These limitations don't exist for digital cameras and designers have begun doing some interesting things. These may or may not be to your liking, so look around. From a portability standpoint, smaller and lighter is better, although you may sacrifice some features for that convenience. For some, the heavier feel of a camera shaped more like a traditional 35 millimeter SLR may have some appeal. There's also something to be said for a heavier camera being easier to hold steady...until it gets **too** heavy, and then the opposite is true. Bottom line: try out a number of different sizes and shapes. See what feels best to *you*. There are no rules here, only preferences and needs in terms of features and portability.

*Resolution:* Okay, this is an important item, but it's also an easy one, at least at the basic level. Resolution refers to the maximum number of individual picture elements (pixels) the camera's imager is capable of capturing. There are different levels of maximum resolution available, depending mostly on how much money you want to spend. The basic realistic choices for printed output are one, two, and three megapixels. Anything less than one megapixel is probably suitable only for display on a 72 dpi computer screen...which may be ok, if that's all you plan to do with your images. On the other end, with one exception, a high end "prosumer" offering from Olympus (remember, I said I liked them *a lot*?!), anything over three megapixels is going to lighten your wallet more than a brand new top of the line G3 with all the bells and whistles. Generally speaking, any camera capable of higher resolution will offer a photo by photo option to shoot at some or all of the lower ones.

Why might you want to choose a camera with lower resolution? They're less expensive or may be faster in terms of frames per second or have more features, such as an extremely long zoom lens. Why shoot at a lower resolution if higher is available in your camera? Perhaps you're out in the field and running out of storage space. Perhaps you know that the images you're capturing are going to only be used on the Web. Smaller images are quicker to upload. They're also quicker to store in memory and quicker to transfer to your com-

puter for storage or manipulation.

Having said all that, I confess that I almost always shoot at maximum resolution. Storage is cheap and the time isn't an issue for me. If space is a problem, I prefer to use a small to moderate amount of file compression (an option in all modern digital cameras) as opposed to giving up any resolution. I almost always reduce resolution and file size in PhotoShop before uploading anything to friends or the Web. Being a less than practiced pro, I need all the pixels I can get for postproduction work (cropping and editing).

Generally speaking, one megapixel will produce an acceptable 4x6 print. Two megapixels will go to 5x7 and three will be okay at 8 x 10. I say generally speaking because I've seen more than acceptable results beyond these limits, but final quality is very dependent on the quality of the camera (remember the earlier discussion about lenses?), printer and paper. There is also software that will enable you to boost the quality of prints from lower resolution files, but beginning with a bigger file will always produce better results than software tricks. (Note: Some cameras also boost apparent resolution by way of a hardware trick called interpolation. This has been the subject of much debate, with the purists heaping scorn on those who would resort to such dishonest hardware chicanery. I say try the cameras and see what you like. I've seen some outstanding photos from 2 megapixel cameras pushed to 4 and 3 megapixel cameras pushed to 6.)

Please bear in mind that quality is a very subjective and personal thing. Prints that delight me may cause you to ask yourself "Why would he settle for *that*?" Unless you're going to try to do this for a living, the person you most have to please is yourself (or your spouse, but that would be the subject for a different article in a different magazine).

*In Camera Storage/Memory:* This is another subject that's been hotly debated in various publications and on the Web. It's also pretty simple at the basic level. There are two issues: size and format. Regarding size, more is better, but more expensive in terms of media cost. (That was easy, wasn't it?) Regarding format, there are three major competitors, with more announcing products or developments every day: Smart Media, Compact Flash (Type I and II) and Memory Stick (a proprietary format from Sony). You really can't go wrong with any of these, so I wouldn't recommend basing your decision on the type of storage your prospective camera requires. Compact Flash Type II is the way to go if you want ***lots*** of space. IBM makes tiny hard drives for this format that max out at a gigabyte.

"What I hope to do in a few pages is give you an overview of the issues to consider as you contemplate moving from the world of traditional film photography and processing to digital imaging. Please bear in mind that I am only lightly touching on issues about which entire books have been written."

Needless to say, this is overkill for most of us. If you are interested in the micro-drive, be sure your camera supports it. It draws lots of power and some cameras can't handle it even though it physically fits. In the flash card realm, Smart Media and Memory Stick both max out at 64 megabytes, although higher capacities are coming. Compact Flash cards currently top out at 256 megabytes.

*Transferring Images to Your Computer:* OK, so you've taken these great pictures. Now you have to get them to your computer so you can print, edit, crop, enhance, email and so forth. When file sizes were smaller, serial transfer was sufficient. As file sizes have grown, USB connections have become more common. Make sure that whatever camera you buy is compatible with your computer, i.e., a USB camera connection won't work with a computer without USB. If your computer is a laptop with a PCMCIA slot, you're in luck. PCMCIA readers for Smart Media and Compact Flash are inexpensive and *fast*. My Wall Street PowerBook has 2 PCMCIA slots, each with a dedicated card so that I can just insert Smart Media or Compact Flash cards (my camera uses both) as needed. It's like having a port on your computer dedicated to your camera's storage device. There are also external USB readers that will accommodate either or both formats. The advantage to all of these external devices is that they don't require you to use precious camera battery power to do image transfers. They also don't require that the camera be tethered to the computer. Another external al-

ternative, albeit a slow one, is an adapter for Smart Media that plugs into you computer's floppy drive (if you have one in this modern day and age). I don't recommend this for a day to day solution, but it's handy on the road because it's portable and will enable you to transfer files almost anywhere there's a computer, provided you can get permission to install the driver, which is available in both Mac and Windows 98 flavors. (I haven't seen one for Windows 2000, but I haven't looked very hard, either.)

*Power (Without a Working Battery, this Thing is an Expensive Paperweight):* This is another area where traditional cameras, even "electronic" ones are very different from their digital cousins. In traditional photography, you put a battery in your camera and forgot about it for months or years at a time. In digital photography, you must constantly be aware of the charge status of your batteries. Without the battery, you have no flash, no zoom, no LCD display and, worst of all, no shutter!

The good news is that, at the basic level, this is another area where good advice is simple: Rechargeable Nickel Metal Hydride (NiMH) batteries are the way to go. With regard to size and shape, go with a camera that takes AAs. Other alternatives either don't work as well or are too expensive, at least right now. I originally did the right thing for the wrong reason. I looked for a camera that would use AA rechargeables so that, in a pinch, I could use alkalines. Dumb idea. Alkalines last such a short time in this application that they're just short of useless. I got lucky in that, unbeknownst to me at the time, Olympus (remember I said how great they were) uses a battery holder in the camera I selected that will take CR3 Lithium batteries as well as AAs. The Lithium batteries are terribly expensive, but they last a long time and are worth it to carry around to use in an occasional emergency. There are also external battery packs with longer life than 4 AAs. These ordinarily clip on your belt and plug into the camera's AC adapter jack.

Which brings us AC adapters. Most new cameras will accommodate one, and if external batteries or AC power are important to you, make sure yours is on that list. An AC adapter is useful if you're going to be doing a lot of work indoors in a setting where you can afford to be tethered to a wall outlet (for example, in a controlled environment like a studio), or if you're using the camera with a cable to transfer photos to a computer. Some models will include the adapter right in the box. Others will have one available as an option. There are also third-party adapters (which is what I have) that work just fine and tend to be less expensive than branded versions. Just make sure you get one guaranteed to be compatible with your camera. Incorrect voltage or polarization can cost you a lot to repair damage that can occur in milliseconds.

*Viewfinder Versatility:* This is an ergonomic issue that adds potential flexibility to how you can capture images. On almost all digital cameras, the LCD screen used to review photos in the camera's storage can also be used as a viewfinder. The down side to this is that using the LCD screen for this purpose discharges batteries at a high rate. This disadvantage is offset on some cameras because the LCD is attached in such a way that you can hold the camera in some truly unique positions to take photos you would not be able to frame in a traditional viewfinder. The over-the-heads-of-the-crowd shot at a parade or concert is a good example. On most cameras you take your best guess and fire the shutter release. On a camera with a swiveling LCD you have a much better chance of framing something that will actually be usable.

*Speed:* Just like batteries, speed (other than shutter speed) is not an issue you ever think about in traditional photography. Digital cameras, however, have three main areas where speed, or lack thereof, can be an important consideration:

- *Off to On:* The time it takes to "boot" the camera can cause you to lose shots, especially if your subjects are children or animals. This is less important in posed settings or settings where you have more control over your subject.

- *Shutter lag:* This one takes some getting used to. In a traditional film camera, you press the shutter release and instantaneously capture the picture. All digital cameras exhibit some form of delay here that you must adjust to. If you use autofocus or autoflash, the delay can be longer depending on the camera. Some cameras have a feature that enables you to set the focus and flash by pressing the shutter release half way. This speeds the camera's response to the final press of the button. One of the reasons I picked the camera that I did was because the shutter release delay was so small as to be imperceptible. Again, if you're shooting kids or animals, a delay can cause you to lose expressions and poses at a critical moment.

• *Speed in Saving to Memory:* Back in the good old days of film, you could shoot as fast as you (or your motor drive) could advance the film. A digital camera needs to store each image to free up the imager for the next shot. Some cameras are just faster than others. Others use internal memory to store pictures as you shoot (faster than transferring to a flash card) enabling you to shoot a series of pictures by holding down the shutter release, similar to what you would accomplish with a motor drive on a traditional camera. The number of pictures that can be captured and stored (and how fast this all happens) depends on the speed built into the camera, the size of the image file and size of the camera's internal RAM. Ordinarily, this "burst mode" shooting will not work with flash because the flash can't cycle rapidly enough to keep up.

*Focal Flexibility (or How Much Zoom is Enough?):* Most new digital cameras (take care because there are exceptions) have some capacity to "zoom" the lens from a medium or wide angle setting to moderate or extreme telephoto. Most are 2-3x. Some have a telephoto range that 35mm photographers dream about, as much as 10-14x. How wide a wide angle setting and how long a telephoto setting you want or need is a matter of what you plan to shoot and your own style. Being not much of a creative photographer, I follow the rule of "Get in close, and when in doubt, get in closer." A long telephoto helps with this because you can close in without invading personal space. It's also handy for nature photography because the wild critters will be long gone if you approach too near. Some new cameras even have digital stabilization for the long lens, which helps eliminate potential problems with camera shake that otherwise could only be resolved by using an external support such as a tripod.

As you shop for a camera you will also come across something called "Digital Zoom." This combination hardware and software trick involves reducing the resolution of the picture and filling the LCD and/or viewfinder with the resultant "larger" image. Since this can be accomplished after the fact in your computer, why would such a feature be popular? The short answer, at least among the digital photographers I know, is that it isn't. It might be useful if you're trying to coax extra extension out of a lens for pictures that will only be viewed on a computer, e.g., via the web (see earlier discussion on resolution), or if you're running out of storage space and need to squeeze a few last pictures on to a crowded memory card. Beyond that, I'm stumped. If any of you can think of a good reason, send me an email.

Why might you want to choose a camera with lower resolution? They're less expensive or may be faster in terms of frames per second or have more features, such as an extremely long zoom lens. Why shoot at a lower resolution if higher is available in your camera? Perhaps you're out in the field and running out of storage space.

Another option available for some cameras involves add-on lenses for wide angle, telephoto or macro work. If you're going to get into these, stay with major manufacturers of cameras and lenses. (See previous discussion on lens quality.) Olympus (there I go again) does a very nice job in this area.

*Archival Storage:* This is an important issue. It doesn't have an impact on your camera decision, but it is a critical issue: you have no negatives. If you lose the file, you've lost the picture forever. CD-ROM writers are becoming standard fare, and I advise you to get one if you're going to be at all serious about digital photography. Remember: it's not *if* your hard disk is going to crash, but *when*. If you're like me (and for your sake I hope you're not), backups to floppies or other media like Zip disks are just inconvenient enough that you probably won't do it thoroughly or consistently. Cataloguing and keeping track of all those pictures in a way that you can recall and view them in a useful manner is an issue better left for another article. Suffice it to say that it's something you need to think about and plan for.

*Other Gadgets (What else will I need):* Most of these items have been discussed elsewhere in this article, but I wanted to gather them all in a single place for your convenience and so that you clearly understand what you'll likely need or want in addition to the basic camera package. You need to look around carefully and aggressively. Some of these items may be included by

the manufacturer or by a reseller looking to add value and entice you to buy without reducing the price.

- *Extra Flash Memory*
- *Extra NiMh Batteries and Charger*
- *External Battery Pack*
- *AC Adapter*
- *Archival Storage*
- *Add-on lenses*
- *Tripod*

*Service:* This is a personal choice that I'm reluctant to make a recommendation on, but it's important enough that I want to encourage you to think about it and make your own decision. A digital camera can be a big investment, and repairs can be outrageously expensive. Ordinarily, extended warranties are cheaper than a repair. A warranty that covers incidental damage is better than one that doesn't. Keep in mind that you're going to be carrying this high tech gadget around, subjecting it to potential damage or loss.

*Web Sites:* As I mentioned earlier, this article really only skims the surface of topics that deserve a lot more attention. I've tried to give you an idea of what to think about and some of the alternatives, but I would never suggest you should read this and then run down to your local camera store. With that in mind, I'd like to refer you to some real experts who have taken the time and trouble to make a truly incredible amount of outstanding information available via the Internet.

- **www.shortcourses.com**: This is an outstanding site by Dennis Curtin that offers three terrific on line references. They are "Short Courses" in 1) Digital Photography, 2) Choosing a Digital Camera, and 3) Using Your Digital Camera. The course in Choosing a camera is a hundred times better than anything I've written here; in fact it was very hard to write my own article instead of just excerpting Dennis's work. I did everything I could to convey my experience and thought process, but I recommend highly that you look at what he's put together. Simply put, if you like anything here, you're going to **love** what he has to say. He also publishes for sale a series of camera manuals intended to be better than what the manufacturers provide. Suffice it to say, I've purchased two of Dennis's manuals one for each of the two digital camera models we have in the house. (Before you ask, yes, they're both Olympus!)

- **www.steves-digicams.com**: News, reviews, cameras, accessories and references to other sites. I can't say enough good things about this site. In my opinion, it's the best overall digital photo site on the web. Spend a little time here looking around. It'll be worth it.

- **lonestardigital.com**: Not as extensive as Steve's site, but has a GREAT list of links to explore if you've the time and the inclination.

- **www.dpcorner.com/index.shtml**: This one's by Arthur Bleich, a prolific writer and true expert. Lots of instructional material and reviews.

- **www.dpreview.com**: By Phil Askey, another prolific expert. News, reviews and discussion forums.

- **www.dcresource.com**, **www.imaging-resource.com**, News and reviews.

These are only a few of many, many online resources. Look around. If you find a favorite, email me and I'll include it in a future article.

So there it is, best summary I could muster. If you have any questions, send me an email at lou.pastura@wap.org and I'll respond to as many as I can. If I get enough, I'll compile them into another article. Also, if there's a topic you'd like to see covered in more depth, let me know and I'll try to do that as well, although if you read the web sites I identified above, you'll soon know more than I do!

One last word of advice: Searching for the "perfect" digital camera is fun. Taking pictures is more fun. Don't get so bogged down in the search that you miss the opportunity to enjoy your camera and take some great pictures. Also (thanks to Lawrence Charters for this one, because truer words were never spoke!), *just because some new camera comes out with some feature your camera doesn't have doesn't mean you have to get depressed and stop taking pictures.* Forget about it! Get over it, or you'll spend more time being depressed than using your camera. All cameras are good one way or another. Don't get carried away with the decision and the specs; have fun and take some pictures. ■

# Hotline–The hotline service is only for members of WAP. Please do not call after 9:00 pm or before 8:00 am.

| Name | Telephone | Heading | Subjects |
|---|---|---|---|
| **Apple General** | | | |
| Bob Sherman | 305-944-2111 | Communications | DBMaster |
| Ron Evry | 703-490-1534 | Hypermedia | Hyperstudio |
| Bernie Benson | 301-951-5294 | Miscellaneous | IIe Card for the LC |
| Harvey Levin | 301-299-9380 | Programming | Apple Script |
| Eric Sheard | 908-782-6492 | Spreadsheets | Advanced Visicalc (eves) 908-782-6492 (days) -2242 |
| Allan Griff | 301-654-1515 | Spreadsheets | Apple Works |
| Eric Sheard | 908-782-6492 | Spreadsheets | Visicalc (eves) 908-782-6492 (days) -2242 |
| Ken DeVito | 703-960-0786 | Telecomm | |
| **Apple //** | | | |
| Bernie Benson | 301-951-5294 | Accounting | Apple SSC (Super Serial Card) |
| Neil Laubenthal | 703-691-1360 | Apple IIGS | General |
| Allan Griff | 301-654-1515 | Apple Works | General |
| Ken DeVito | 703-960-0786 | Apple Works | General |
| Paul Campbell | 313-255-6497 | Apple Works | General |
| Ray Settle | 410-647-9192 | Apple Works | General |
| Allan Griff | 301-654-1515 | AppleWorks | General |
| Ken DeVito | 703-960-0786 | Beagle Buddies | |
| W. T. Cook | 410-995-0352 | Beagle Buddies | |
| Don Avery | 202-362-1783 | Beagle Buddies | |
| Dale Smith | 301-294-2287 | Communications | |
| Allan Griff | 301-654-1515 | Database | Apple Works |
| Morgan Jopling | 410-721-7874 | Database | Apple Works |
| Milt Goldsamt | 301-649-2768 | Database | Apple Works |
| Guy Durant | 202-575-0414 | Epson Printers | |
| Ron Evry | 703-490-1534 | General | |
| Harold Polk | 301-662-6399 | General | |
| Ken DeVito | 703-960-0786 | General | |
| Guy Durant | 202-575-0414 | Hard Drives | |
| Guy Durant | 202-575-0414 | Hardware | |
| Ron Evry | 703-490-1534 | Hypermedia | Hyperstudio |
| Bob Sherman | 305-944-2111 | Laser Printing | |
| Ron Evry | 703-490-1534 | Word Processing | AppleWriter |
| Allan Griff | 301-654-1515 | Word Processing | |
| **Apple // e** | | | |
| Morgan Jopling | 410-721-7874 | Upgrade | |
| **Apple // GS** | | | |
| Rich Sanders | 703-450-4371 | Drawing/Graphics | Deluxe Paint II |
| Dick Grosbier | 301-898-5461 | General | |
| Eric Grupp | 410-315-8331 | General | |
| Seth Mize | 410-766-1154 | General | |
| Rich Sanders | 703-450-4371 | Word Processing | Multiscribe GS |
| **Apple // GS** | | | |
| Ken Carter | 301-834-6516 | General | |
| **Apple ///** | | | |
| Dave Ottalini | 301-681-6136 | General | |
| Paul Campbell | 313-255-6497 | General | |
| Seth Mize | 410-766-1154 | General | |
| Robert Sambolin | 203-853-2512 | General Repair | |
| Steve Truax | 304-263-5749 | Integ. Packages | 3 Easy Pieces |
| Dave Jernigan | 540-822-5137 | Integ. Packages | 3 Easy Pieces |
| Paul Campbell | 313-255-6497 | Repairs | |
| Dave Jernigan | 540-822-5137 | | 3.5" Super Drive |
| Dave Jernigan | 540-822-5137 | | SCSI Drives |
| Steve Truax | 304-263-5749 | | Stemspeller |
| Dave Jernigan | 540-822-5137 | | Stemspeller (before 9 PM) |
| Carey McGleish | 313-332-8836 | | Word Juggler (evenings) |

| Name | Telephone | Heading | Subjects |
|---|---|---|---|
| **Cross Platform** | | | |
| Ken DeVito | 703-960-0786 | Transfers | MS/DOS-Apple-Mac |
| **IBM/Compatibles** | | | |
| Etana Finkler | 301-891-2821 | Illustration | General Can call until midnight |
| Tom Cavanaugh | 301-627-8889 | Printers | General |
| **Internet** | | | |
| Dan White | 301-843-3287 | General | |
| Walt Francis | 703-278-0041 | General | |
| Will DeKroney | 410-626-7716 | General | |
| Curt Harpold | 301-762-0887 | Programming | JAVA |
| Craig Contardi | 410-796-4562 | World Wide Web | Netscape Navigator |
| Seth Mize | 410-766-1154 | World Wide Web | Sailor |
| Jaque Davison | 703-644-7354 | World Wide Web | Web Site Builder |
| **Macintosh** | | | |
| Robert Sambolin | 203-853-2512 | | General |
| John Engberg | 301-262-9347 or 301-604-8348 | | Basics |
| Tho. Snowberger | 410-757-4656 | Contact Managers | Now Contact/UTD |
| Bill Waring | 410-647-5605 | Database | Filemaker Pro |
| Bob Wilbur | 703-426-0556 | Database | Filemaker Pro |
| Rick Shaddock | 202-321-2110 | Database | FoxPro |
| Harvey Levin | 301-299-9380 | Database | Helix |
| Bob Wilbur | 703-426-0556 | Database | Helix Express |
| Dick Nugent | 703-425-1056 | Database | FileMaker Pro |
| Elizabeth Mangan | 703-750-2710 | Database | Pro-Cite |
| Dave Weikert | 301-963-0063 | Databases | Panorama |
| Bob Wilbur | 703-426-0556 | Database | General |
| Blake Lange | 301-942-9180 | Desk Top Pub. | PageMaker |
| Eric Grupp | 410-315-8331 | Desk Top Pub. | Quark Xpress |
| Paul Schlosser | 301-831-9166 | Desk Top Pub. | Quark Xpress |
| Ron Johnson | 410-315-8764 | Drawing/Graphics | Adobe Illustrator 3.0 |
| Nancy Seferian | 202-333-0126 | Drawing/Graphics | Aldus Freehand |
| Bob Wilbur | 703-426-0556 | Drawing/Graphics | Canvas |
| Lloyd Olson | 410-544-1087 | Drawing/Graphics | ClarisDraw |
| Etana Finkler | 301-891-2821 | Drawing/Graphics | Freehand Can call until midnight |
| Nancy Seferian | 202-333-0126 | Drawing/Graphics | General |
| Neil Laubenthal | 703-691-1360 | Drawing/Graphics | General |
| Etana Finkler | 301-891-2821 | Drawing/Graphics | General Can call until midnight |
| Bob Wilbur | 703-426-0556 | Drawing | General |
| Blake Lange | 301-942-9180 | Drawing/Graphics | Illustrator |
| Etana Finkler | 301-891-2821 | Drawing/Graphics | Illustrator Can call until midnight |
| Blake Lange | 301-942-9180 | Drawing/Graphics | Photoshop |
| Dave Jernigan | 540-822-5137 | Foreign Languages | FlashWorks |
| Dave Jernigan | 540-822-5137 | Foreign Languages | Greek Tutor |
| Dave Jernigan | 540-822-5137 | Foreign Languages | Hebrew Tutor |
| Dave Jernigan | 540-822-5137 | General | |

# May 2001

| Sunday | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday |
|---|---|---|---|---|---|---|
| | | 1 Clinic<br>*Mac-Digging Deeper 1*<br>*Netscape Com e-mail* | 2<br>*Jazz up your Web Page*<br>WAP BoD | 3<br>*Mac-Digging Deeper 2*<br>*Web Pages Fast&Easy*<br>Columbia Slice | 4 *Intro to FileMaker Pro*<br>*Make Your Mac Sing 1* | 5 |
| 6 | 7<br>*Picture Here*<br>*WriteIt-SaveIt-PrintIt* | 8 Clinic<br>*Ride the I-Net Wave*<br>*Brush Up Mac Skills-1* | 9<br>*iVisit iMac 1*<br>*Scanner Intro* | 10<br>*Dwnldng/Installing*<br>*Brush Up Mac Skills-2*<br>Stock SIG | 11 *Advanced FileMaker Pro*<br>*Make Your Mac Sing 2* | 12 NoVa ComCol WAP General Meeting |
| 13 | 14<br>*Web Page How To's*<br>*Finder Basics* | 15 Clinic<br>*Web Pages Fast&Easy*<br>*Mac-Digging Deeper 1* | 16<br>*Picture Here*<br>*iVisit iMac 1*<br>Excel SIG | 17<br>*AppleWorks-Intro*<br>*Mac-Digging Deeper 2* | 18<br>*Adobe GoLive 1* | 19 |
| 20 | 21<br>*email with AOL*<br>*Surfing 101* | 22 Clinic<br>*Brush Up Mac Skills-1*<br>*Ride the I-Net Wave* | 23<br>Retired SIG<br>*Advanced AppleWorks* | 24<br>*Brush Up Mac Skills-2*<br>*Dwnldng/Installing* | 25 | 8-11 26 |
| 27 | Memorial Day 28 | 29<br>*Adobe GoLive 2*<br>Clinic | 30<br>*Simplify Your Computer Life*<br>*E-Mail* | 31<br>*Adobe GoLive 3* | | |

# June 2001

WAP Office Phone: 301- 984-0300
TCS 2400 bps: 301-984-4066;
TCS 14400 bps: 301-984-4070

| Sunday | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday |
|---|---|---|---|---|---|---|
| | | | | | 1<br>*Jazz up your Web Pages* | NoVa ComCol 2 Garage Sale |
| 3 | 4 | *Digging Deeper 1* 5<br>*Web Pages Fast*<br>Clinic | *Digital Cameras* 6<br>*Write It!*<br>WAP BoD | *Digging Deeper 2* 7<br>*Email with Netscape*<br>Columbia Slice | 8 | 9<br>Graphic SIG |
| 10 | 11 | *Internet* 12<br>*Brush Up Mac 1*<br>Clinic | 13 | *Downloading* 14<br>*Brush Up Mac 2*<br>Stock SIG | 15 | 16<br>Annapolis Slice |
| 17 | 18 | *Intro to Apple Works* 19<br>*Digging Deeper 1*<br>Clinic | 20<br>Excel SIG | 21<br>*Web Pages Fast*<br>*Digging Deeper 2* | *Intro to Apple Works* 22<br>*Picture Here* | 23 |
| 24 | *Web How To's* 25<br>*Surfing 101* | *Intro to FileMaker Pro* 26<br>*Digital Video*<br>Clinic | *Simplify Your Computer Life* 27<br>Retired SIG | *Advanced FileMaker Pro* 28<br>*iWant iMovie* | *AppleWorks Newsletters* 29<br>*Advanced Appleworks* | 30 |

*Unless otherwise noted, call the SIG chairs or Slice officers for meeting information. A list of the SIG and Slice chairs is on page 3 of every Journal. Calendar events in italics are tutorials, workshops or seminars.*

# Meeting Notices

**Annapolis Slice**
3rd Saturday; 9:30 AM; Severna Park Library on McKinsey Rd. (off Rt. 2), Severna Park, MD
Answering Machine: (410) 647-5605

**AOL SIG,** contact John Barnes at JDBarnes@aol.com or in the evening at 301 / 652-0667.

**Apple III SIG**
Quarterly on 2nd Saturday; 10:00 AM; WAP Office.

**Columbia Slice**
1st Thursday; 7:00 PM. Call for location
BBS (410) 964-3706

**DataBases (Mac) SIG**
Volunteers needed to restart this SIG

**Delmarva Slice**
At the campus of Salisbury State University, but will rotate throughout Delmarva area when appropriate. Email Shelly Wetzel form more information. <sawetzel@ssu.edu>

**Excel SIG**
3rd Wednesday; 7:30 PM; WAP office.

**FileMaker Pro SIG**
3rd Thursday; 7:30 PM; WAP office.

**Frederick Slice**
General meeting time, 2nd Saturday; 10:00 AM; United Methodist Church; 22 Main Street in Walkersville.

**Game SIG**
1st Thursday; 7:30 PM; Call for location.

**Genealogy SIG**
***Not meeting in July or August.*** Volunteer needed.

**Graphic Arts SIG**
2nd Saturday of the month

**Linux SIG**
Contact Will Byrd or Gregory Kelley (wbyrd@fred. net or grekell@earthlink.net)

**Mac Programmers' SIG**
Volunteers needed to restart this SIG

**Newton Developers' SIG**
Volunteer needed

**NoVa Education (Ed) SIG**
Call SIG chair for times & locations.

**QuickTime SIG**
2nd Tuesday of each month; 7:30 PM; WAP office.

**Retired SIG**
4th Wednesday of each month; 11 AM to 2 PM; each meeting will have a topic, but be run informally. WAP office.

**Stock SIG**
2nd Thursday; 7:30 PM; WAP Office. (Morris Pelham who chairs StockSIG is Sysop of the Investment/StockSIG board on the TCS. Contact him on that board.)

**Telecomm SIG**
Call SIG chair for times & locations.

**WAP Garage Sale**—coming June 2nd

**WAP General Meeting**
4th Saturday; 9:00 AM; Northern Virginia Community College, Annandale Campus, Community Cultural Center Auditorium.

**Women's SIG**
At the Pi Office at 6:00 PM dinner ($2) followed by 7:00 PM meeting/presentation. Call SIG chair or office for next meeting.

**Notice:** Plans change! Anyone with calendar information please call the Calendar Editor, Bill Wydro (301) 299-5267 or Beth Medlin at the WAP Office (301) 984-0300.

# Hotline–The hotline service is only for members of WAP. Please do not call after 9:00 pm or before 8:00 am.

| Name | Telephone | Heading | Subjects |
|---|---|---|---|
| Joan Jernigan | 540-822-5137 | General | |
| Dan White | 301-843-3287 | General | |
| Dick Grosbier | 301-898-5461 | General | |
| Russell Robinson | 301-739-6030 | General | |
| Eric Seidel | 540-667-5289 | General | Networking |
| Eric Seidel | 540-667-5289 | General | Hardware |
| Robert Sambolin | 203-853-2512 | General Repairs | Older Mac through SE30 |
| Neil Laubenthal | 703-691-1360 | General | |
| Tom Cavanaugh | 301-627-8889 | General | |
| Tom DeMay | 410-461-1798 | General | |
| Tom Witte | 703-683-5871 | General | |
| Bob Wilbur | 703-426-0556 | General | |
| Jim Kelly | 301-926-2949 | General | Applescript |
| Henry Miller-Jones | 703-478-3721 | Answering Syst. | Mac Commcenter,FAXcilitate, GV |
| Henry Miller-Jones | 703-478-3721 | General | Fax Software |
| Joan Jernigan | 540-822-5137 | Hypermedia | HyperStudio |
| Jerry Iler | 410-987-5432 | IIsi | General |
| Bill Geiger | 703-237-3614 | Integ. Packages | ClarisWorks |
| Sandy Kowalczuk | 410-268-3149 | Integ. Packages | ClarisWorks |
| Ray Settle | 410-647-9192 | Integ. Packages | Clarisworks |
| Henry Miller-Jones | 703-478-3721 | Integ. Packages | ClarisWorks |
| Joan Jernigan | 540-822-5137 | Integ. Packages | ClarisWorks |
| Jim Ritz | 301-770-1405 | Integ. Packages | MSWorks |
| Ray Settle | 410-647-9192 | Integ. Packages | MSWorks |
| Tim Childers | 410-997-0066 | Integ. Packages | MSWorks |
| Dave Weikert | 301-963-0063 | MacDisketeria | Disk Library |
| Dave Jernigan | 540-822-5137 | Mail List Manager | My Mail List Manager |
| Sandy Kowalczuk | 410-268-3149 | Miscellaneous | HyperCard |
| Blake Lange | 301-942-9180 | Miscellaneous | Hypercard |
| Tom Witte | 703-683-5871 | Miscellaneous | Hypertalk |
| Jeff Dillon | 301-434-0405 | Miscellaneous | MX-80 |
| Dave Jernigan | 540-822-5137 | Miscellaneous | Online Bible Mac |
| Dave Jernigan | 540-822-5137 | Miscellaneous | Soft Windows Mac |
| Rick Chapman | 301-989-9708 | Miscellaneous | Hypercard |
| Tom Witte | 703-683-5871 | Miscellaneous | Hypercard |
| Peter Combes | 301-445-3930 | Multi Media | Director |
| Peter Combes | 301-445-3930 | Multi Media | Language |
| Stuart Bonwit | 301-598-2510 | Multimedia | Quicktime |
| Tom Witte | 703-683-5871 | Multimedia | Quicktime |
| Joan Jernigan | 540-822-5137 | Multimedia | HyperStudio |
| Frank PappaJohn | 703-922-3851 | Music Notation | Finale |
| Henry Miller-Jones | 703-478-3721 | Networking | AppleTalk |
| Jerry Iler | 410-987-5432 | Older Claris | Genera |
| Henry Miller-Jones | 703-478-3721 | Online Services | AOL, CISI |
| Jerry Iler | 410-987-5432 | PB180C | General |
| Lester Morcerf | 410-987-0685 | Performa 550 | General |
| Tho. Snowberger | 410-757-4656 | Performa System | General |
| Rick Shaddock | 202-321-2110 | Pers.Contact Mgr. | ACT |
| Mel Benson | 410-647-6873 | Personal Finance | Dollars & Sense |
| Bill Geiger | 703-237-3614 | Personal Finance | Manage Your Money |
| Mel Benson | 410-647-6873 | Personal Finance | Manage Your Money |
| Clarence Goldberg | 410-263-5189 | Personal Finance | Quicken |
| Henry Miller-Jones | 703-478-3721 | Personal Finance | Quicken |
| Bob Wilbur | 703-426-0556 | Personal Finance | Quicken |
| Tom Cavanaugh | 301-627-8889 | Printers | General |
| Walt Francis | 703-278-0041 | Printers | General |
| Michael Hartman | 301-942-3717 | Programming | C |
| Michael Hartman | 301-942-3717 | Programming | General |
| Harry Erwin | 703-758-9660 | Programming | General (e-mail at herwin@gmu.edu) |
| Joshua Juran | 301-231-8622 | Programming | Perl, C, C++, Pascal |
| Michael Hartman | 301-942-3717 | Programming | Pascal |
| Charles Schindler | 410-437-4624 | Spreadsheets | Excel |
| Lloyd Olson | 410-544-1087 | Spreadsheets | Excel |
| Walt Francis | 703-278-0041 | Spreadsheets | General |
| Roger Burt | 301-424-6927 | Spreadsheet/Chart | ClarisWorks |
| Bob Wilbur | 703-426-0556 | Spreadsheet | ClarisWorks |
| Dave Jernigan | 540-822-5137 | Spreadsheet | ClarisWorks |
| Mark Pankin | 703-524-0937 | Spreadsheet/Chart | Excel |
| Dick Byrd | 703-978-3440 | Spreadsheet/Chart | Excel |
| Rick Shaddock | 202-321-2110 | Spreadsheet/Chart | Excel |
| Tom Cavanaugh | 301-627-8889 | Spreadsheet/Chart | Excel |
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| Lloyd Olson | 410-544-1087 | System | Mac OS |
| Neil Laubenthal | 703-691-1360 | System | Mac OS Modems General |
| Henry Miller-Jones | 703-478-3721 | System | Mac OS |
| Bernie Benson | 301-951-5294 | Telecomm. | Modems Hayes Smartmodem |
| Henry Miller-Jones | 703-478-3721 | Telecomm. | ProTerm |
| Henry Miller-Jones | 703-478-3721 | Telecomm. | General |
| Henry Miller-Jones | 703-478-3721 | Telecomm. | MacTCP, Free PPP |
| Dave Jernigan | 540-822-5137 | Utilities | Conflict Catcher, Retrospect, Stuffit Deluxe, Tech Tools |
| Henry Miller-Jones | 703-478-3721 | Utilities | General |
| Jaque Davison | 703-644-7354 | Virtual Reality | Alien Skin Texture Shop |
| Jaque Davison | 703-644-7354 | Virtual Reality | Bryce 2 |
| Jaque Davison | 703-644-7354 | Virtual Reality | Specular Logomotion |
| Jaque Davison | 703-644-7354 | Virtual Reality | Virtus - 3-D |
| Jaque Davison | 703-644-7354 | Virtual Reality | Virtus Walkthrough Pro |
| Dave Jernigan | 540-822-5137 | Word Processing | Word Perfect |
| Charles Schindler | 410-437-4624 | Word Processing | WordPerfect |
| Eric Grupp | 410-315-8331 | Word Processing | WordPerfect |
| Bob Wilbur | 703-426-0556 | Word Processing | WordPerfect |
| Walt Francis | 703-278-0041 | Word Processing | General |
| Tim Childers | 410-997-0066 | Word Processing | Hebrew |
| Tom Cavanaugh | 301-627-8889 | Word Processing | MS Word |
| Joan Jernigan | 540-822-5137 | Word Processors | Claris Works |
| Dave Jernigan | 540-822-5137 | Word Processors | Word Perfect |
| Henry Miller-Jones | 703-478-3721 | WWW | Netscape Navigator |
| Craig Contardi | 410-796-4562 | WWW | Netscape Navigator |
| **Macintosh & Apple** | | | |
| Ginny Spevak | 202-244-8644 | Miscellaneous | Dvorak Keyboard |
| Mike Spevak | 202-244-8644 | Miscellaneous | Dvorak Keyboard |
| Bob Sherman | 305-944-2111 | Telecomm. | General |
| Dale Smith | 301-294-2287 | Telecomm. | General |
| John Barnes | 301-652-0667 | Telecom | AOL |
| Dale Smith | 301-294-2287 | Telecomm. | TCS |
| Nancy Seferian | 202-333-0126 | Telecomm. | TCS |
| Paul Schlosser | 301-831-9166 | Telecomm. | TCS |
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| **Networking** | | | |
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| Douglas Ferris | 301-924-4180 | Networking | Windows |
| Dave Weikert | 301-963-0063 | Networking | Mac/AppleShare |

## *We're updating the hotline!!*

To have any changes or additions made, simply call the office during normal business hours or send the information via e-mail to Jim Ritz at <jim.ritz@tcs.wap.org>.

Let us know if any of this information is incorrect. Thanks.

# New User: How to Stop Computer Freezes

© Pat Fauquet

APPLICATIONS freeze your computer or quit unexpectedly because there is not enough RAM allocated to them. Now I know you just bought this computer, or you just added RAM, or you have lots of hard drive space, so perhaps a quick lesson in how a computer works is in order here.

RAM stands for Random Access Memory. See Figure 1. These are chips that are installed on the motherboard of your computer. When your computer is on, the System Folder and any programs that launch or started are copied from your hard drive to the RAM chips. When your computer is turned off, the RAM chips are emptied of all data.

The hard drive (Figure 2) of your computer is used to store things. It contains the System Folder, all the applications (or programs) on your computer and your documents (files). You can see what is on your hard drive by clicking its icon on the desktop.

When you start your computer, the contents of the System Folder are copied onto your RAM chips. When you launch a program like AppleWorks, the program is copied onto the RAM chips. When you start a letter or other file, the file is written to the RAM chips. When you save the file, a copy of it is written to the hard drive.

*Figure 1.*

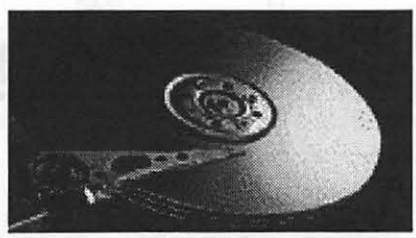


*Figure 2.*

When you quit a program, it is erased from the RAM chip. When you close a file, it is erased from the RAM chip. When your computer freezes, or when you turn your computer off, everything is erased from the RAM chip until the next time you start your computer.

When programmers write computer applications, they decide how much RAM the application will need to work. Since RAM costs money, and since programs that use less RAM sound better to the general public, the programmers often underestimate the amount of RAM a program will need to operate. If an application freezes your computer, you can change the amount of RAM allocated to it to stop the freezes.

### Step 1

Since we know you have been using the application that just froze your computer, it will be listed under the Apple menu in "Recent Applications." See Figure 3. We do not want to re-launch the applications, so instead of pulling down to "Recent Applications" then

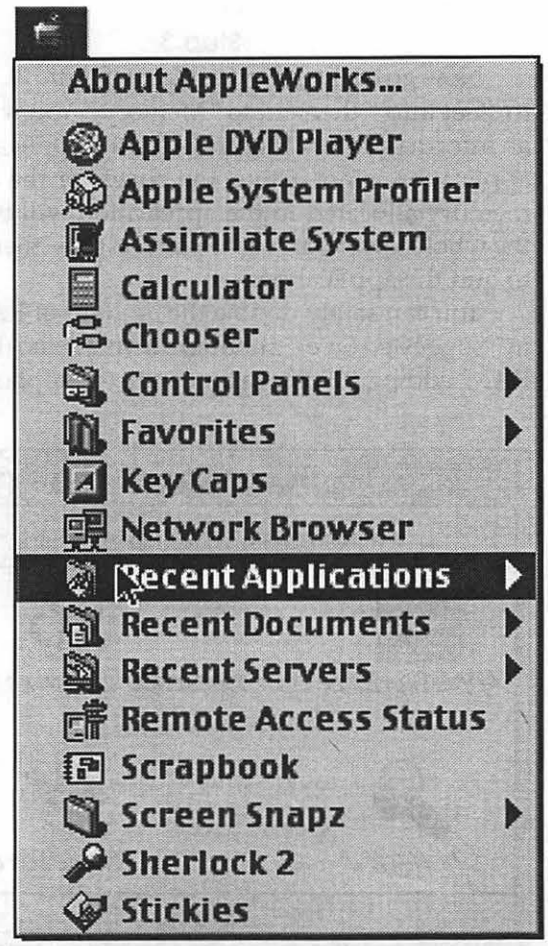



*Figure 3.*

out to its name, simply pull down the Apple menu until "Recent Applications is highlighted, then click the mouse button.

This will open the "Recent Items" window (Figure 4) on your screen. It will have icons in it for the last programs you have used on your computer. These icons are aliases. Notice that the name is written in italics. Icons that are not aliases will have names written in "normal" text.

### Step 2

We need to find the original icon associated with the alias in the "Recent Itèms" window. Click one time on the alias icon of the application that quit or froze. Do not click two times because that will open the application. You cannot change the memory setting of an application that is open. When the icon is highlighted by clicking only one time, go to the File menu of the Finder. Choose "Show Original." See Figure 5. This will open another window on your screen (Figure 6). In it will be the icon of the program that we are looking for.

### Step 3

Now go back to the File Menu (Figure 7). Pull down to "Get Info," then out to "Memory." You will now see an information box (Figure 8) for the application. If the application is not active, the boxes for the amount of memory allocated to the application will be white. If the whole lower part of the panel is gray, then you need to quit the application.

You can safely double the amount of RAM shown in "Suggested Size," although, if you do not have much RAM, adding 1000K at a time until the application stops

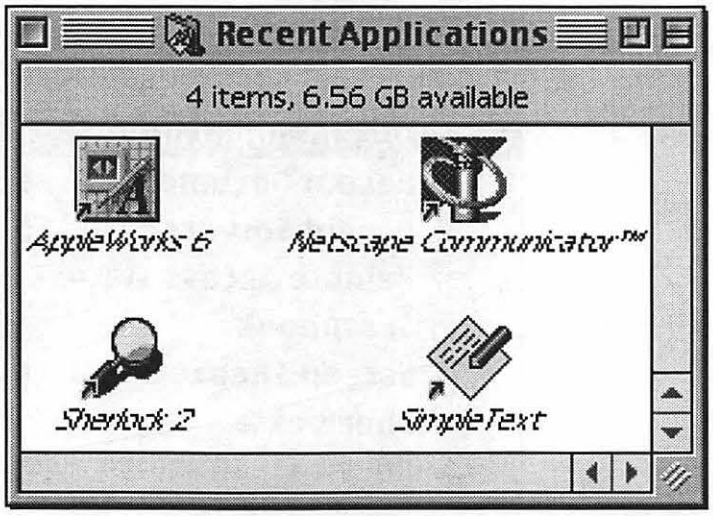



*Figure 4.*

*Figure 5.*

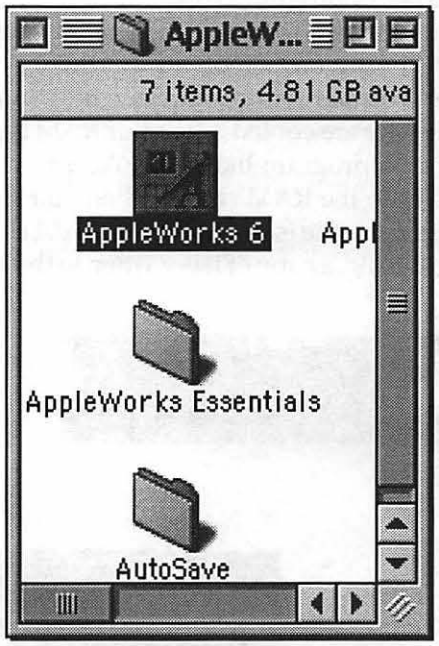



*Figure 6.*

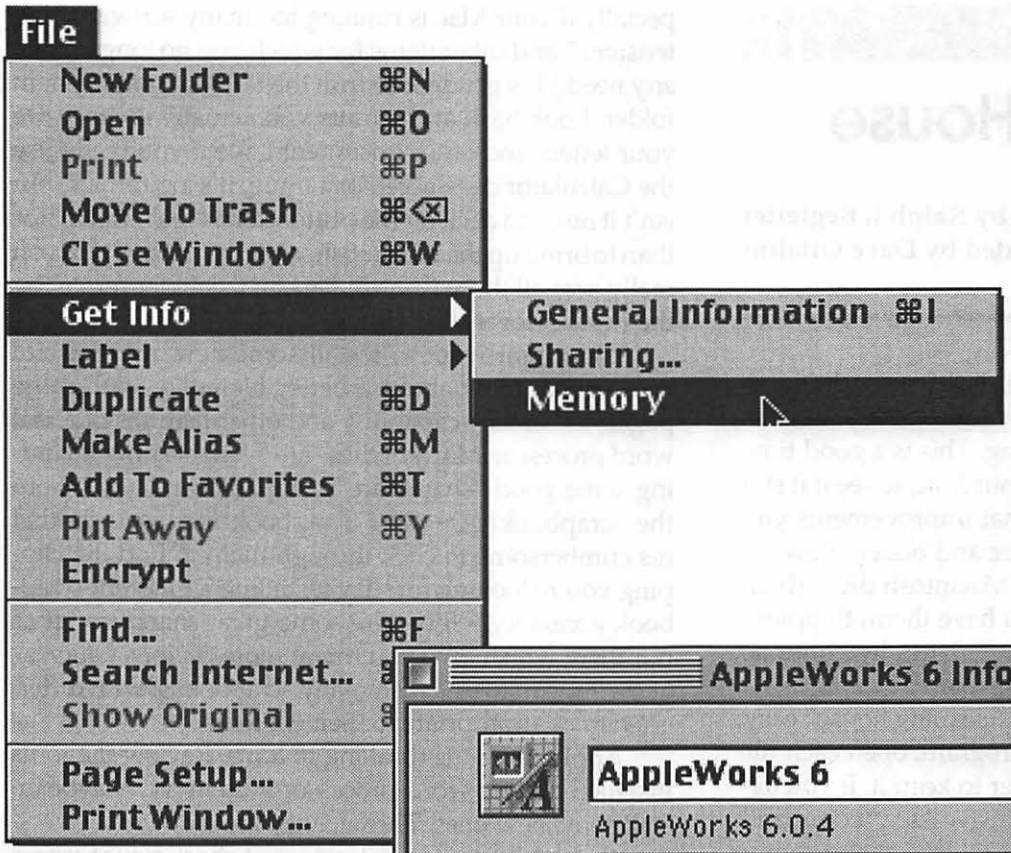



*Figure 7.*

freezing may allow you to use slightly less RAM. In any case, Apple recommends changing the number in the "Minimum Size" box to the number shown in "Suggested Size."

One of the new features of OS X is that the user will not longer have to manage application memory preferences. This alone may be reason enough for new users to consider upgrading their operating system. ■

*Pat Fauquet teahes many of the Washington Apple Pi Tutorials and is a frequent contributor to the WAP Journal.*

"Applications freeze your computer or quit unexpectedly because there is not enough RAM allocated to them. Now I know you just bought this computer, or you just added RAM, or you have lots of hard drive space..."

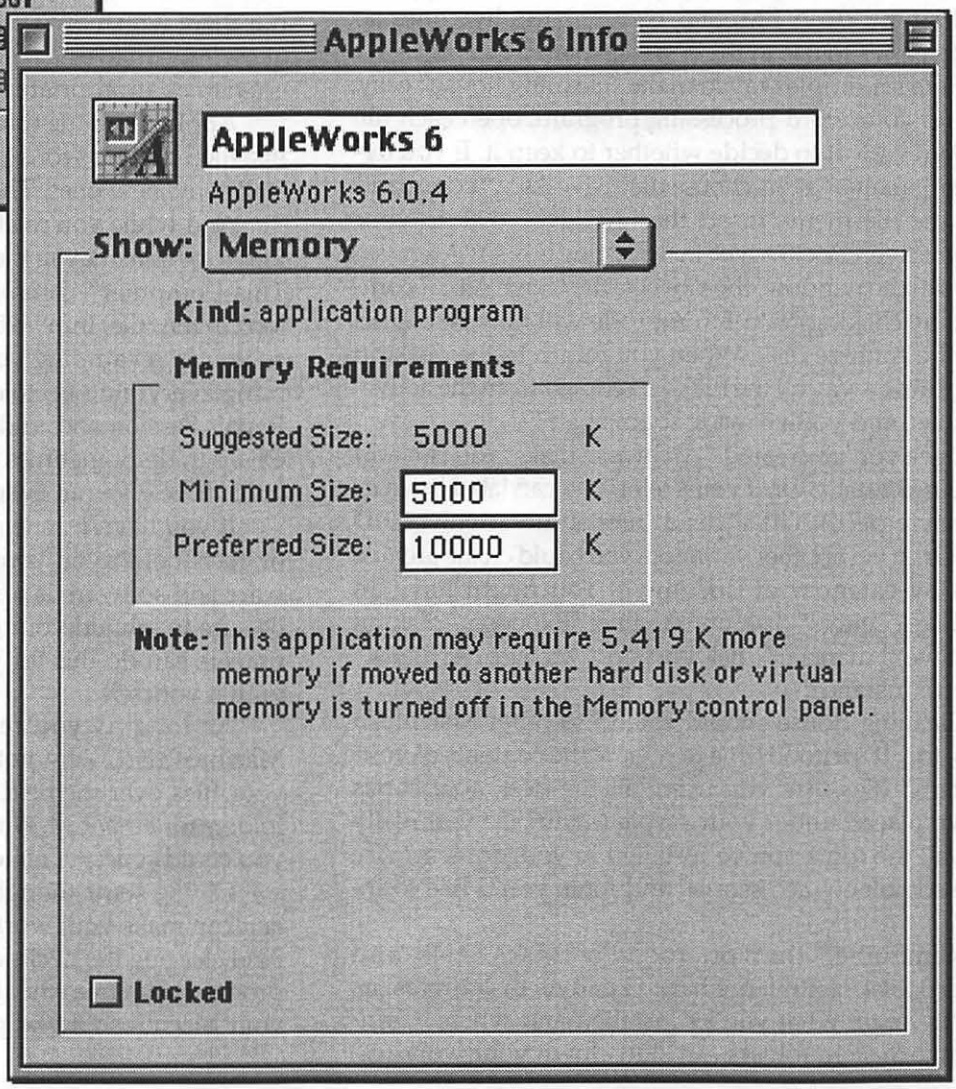



*Figure 8.*

# Cleaning House

**A MacNovice Column by Ralph J. Begleiter**
**Updated by Dave Ottalini**

IF YOU havn't done it recently, it's a good time to take stock of your Macintosh system – and your own growth in personal computing. This is a good time to review the way you're using your Mac, to see if it still meets your needs, and to see what improvements you can make to help you work faster and easier. Now's a good time to look through your Macintosh disks (both hard disk drives, Zips and (if you have them) floppies), weeding-out dead files and reorganizing live ones so they're easier to use in the coming year.

Here's a simple way to make "cleaning house" easy. Start up your word-processing program, open each file as you review it to decide whether to keep it. If you decide to "archive" a file, choose the "Save As..." command from the file menu; insert the "Archive" disk in your floppy drive; click "Drive" in the dialog box so "Archive" shows in the window; then *execute* the "Save As..." command by clicking "SAVE." Your file will now be copied onto the Archive disk. When you return to the desktop later, throw away all the files you copied from the active-files disk, and you've made space again!

Once you've created "Archives" disks, you can add to them annually. Or, if you prefer, you can label them *by year*, saving *all* of 2001's "dead" files on an "Archives '01" disk. Or, in yet another variation, you could create archive disks by category of document. You might have an "Archive/Letters" disk, an "Archive/Expenses" disk, an "Archive/Financial" disk and an "Archive/Artwork" disk, for instance.

Cleaning house should extend to other Macintosh areas, too. It's a good time to review the contents of your "System" files. Are you using all the desk accessories you've placed under your Apple Menu? Do you really need all the fonts you've installed in your System? Are there some new accessories and fonts you'd like to install?

Remember that on today's iMacs, G4s and PowerBooks - with large hard GigaByte disk drives, its easy to forget what you've installed and where. Cumbersome System folders can slow down your work (especially if your Mac is running too many software "Extensions" and other items for which you no longer have any need.) It's prudent to trim the fat from your System folder. Look back at the fonts you actually *use* to write your letters and other documents. See if you really use the Calculator desk accessory. (Sure, it's a gimmick, but isn't it *easier* to click on the buttons of a "real" calculator than to bring up the Macintosh *screen* calculator?) Do you really *need* all those Control Panels? Consider removing the Puzzle (for instance).

You might want to install some new, more useful accessories. How about a better Notepad, with more pages, a "search" capability and other features of a real word processor. Many of these are available now, including some good "shareware" notepads. And how about the Scrapbook? Are your Scrapbook files so large that it's cumbersome to click through them to find the clipping you're looking for? Try installing a different scrapbook accessory, - there are some great shareware ones out there which give you many more options - such as allowing you to establish many scrapbooks, with different names appropriate to their contents.

Apply the same thinking to fonts. Review the fonts installed in your word-processor System file. Maybe install some new ones. Throw away the old.

And while you're at it, why not check your System files to be sure they're the latest versions? Use the "About This Computer" command under the Apple Menu-or look in the "Get Info" window of the System file. As long as you're revamping your basic System files, why not bring everything up to date? Come to a Tuesday Night Repair Session and find out if your Mac can handle an OS upgrade. Sometimes just adding memory and a larger hard drive gives an even better performance boost.

If you havn't done so recently, run Norton Utilities or TechTool Pro on your Mac - make sure all the hardware and software is healthy. Defrag it if necessary and be sure to rebuild your desktop. Again - Our WAP volunteers can do this for you if you don't want to hastle with it yourself.

As long as you're reviewing the state of your Macintosh art, why not decide how you plan to store your files over the next year. You could create separate folders for Financial, Word Documents and Artwork. Or, you could separate materials on your disk by month.

Giving some thought to these housekeeping chores *now* can make your work easier over the next 12 months. And clearing the decks of old documents and computer programs can free valuable space on your hard drive and your Macintosh desktop! ■

# Beware the Trash!

**A MacNovice Column by Ralph J. Begleiter**
**Updated by Dave Ottalini**

IT'S ALMOST foolproof. But not quite. It's *almost* impossible for you to discard forever a document or folder by mistake. But not quite impossible. In fact, until you become familiar with the way your Macintosh desktop trash can works, you might find yourself throwing away documents you really want to preserve.

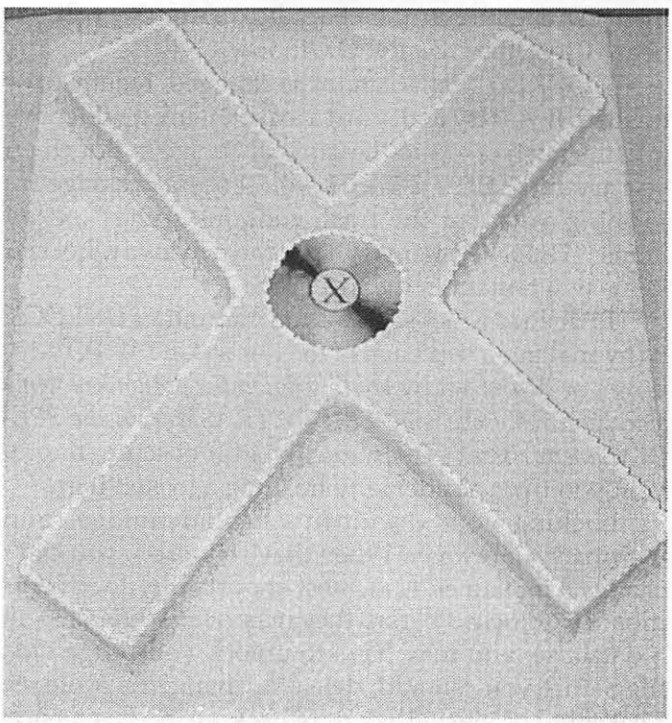
Remember a couple of simple rules about the Mac's trash can:

- The trash can is similar to any other folder on your desktop, in the sense that you can OPEN it and VIEW its contents at any time. Just double-click on the trash can icon or click on it and choose OPEN from the FILE menu.

Inside, you'll see the icons of anything you've recently discarded. These documents and folders haven't actually been erased by the Mac until their icons *disappear* from the trash can's open window.

- The trash can is different from other folders on your desktop because it has a special menu command *associated only with the trash.* This command is found in the SPECIAL menu, and it's appropriately called EMPTY TRASH.
- The trash can *never empties itself automatically* . Items you throw away *remain in the trash can until you EMPTY TRASH.* (When the Mac was first developed

# March 2001 General Meeting Photos



*By a great stroke of luck, March 24 was not only the long-scheduled date of the General Meeting but also the date Mac OS X first went on sale. The occasion called for a giant blue "X" cake in honor of Mac OS X's first birthday. The cake, and two companion birthday cakes for humans (not operating systems), rapidly vanished under assault from the hordes. (Photo by Lawrence I. Charters)*

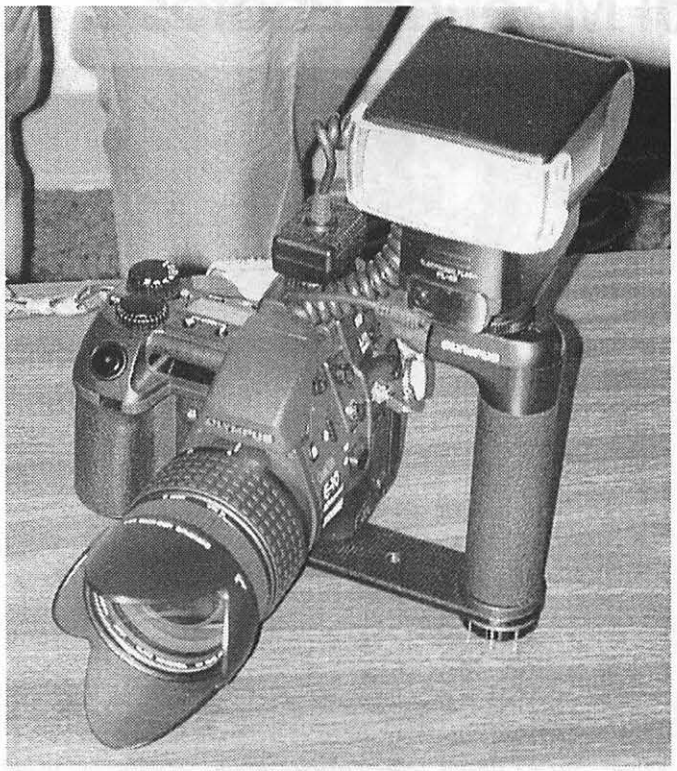
*While Carrie Conroy, representing Canon, prepares her demo in the background, a brand-new Proxima ultra-light projector blasts images up onto the auditorium screen. Apple senior engineer J.D. Mankovsky brought the projector to the meeting, and notice what he used to prop up the projector: a shipping container for a titanium PowerBook G4. JD pointedly ignored many suggestions to give away the box — and the PowerBook — as a drawing prize. (Photo by Lawrence I. Charters)*

in the 1980's, there were some circumstances when the trash emptied itself. Those bad old days are long gone.)

Discarding a document or folder is as simple as dragging the icon of that item into the trash can. You'll know your unwanted item has actually been dropped into the trash when your pointer (not the icon) is directly over the can and the can turns black. Release the mouse button and your trash disappears from view. (It hasn't been discarded forever yet. If you OPEN the trash can and look in its window, you'll still see the icon of your discarded document.) You'll know when your trash can has some items in it, because the can seems to "bulge" on the desktop.

Once you discard a document or folder from your desktop you should pause, think about what you've just done, and decide whether you *really* want to trash that item.

Your Mac allows you to protect yourself against inadvertent trashing of most documents and folders. You can protect yourself *against yourself* (or against others who might mistakenly trash something you want to keep). To prevent a document from being discarded by mistake, you may electronically LOCK it.



*Long-time Pi member Lou Pastura did a splendid job documenting the March General Meeting with his Olympus E-10 digital camera. This very flexible, very high-resolution, very well designed camera has everything a serious photographer could want, except its own Sherpa to carry it and its accessories. (Photo by Lawrence I. Charters, taken with a not quite so spiffy Nikon CoolPix 990)*

"The trash can is different from other folders on your desktop because it has a special menu command *associated only with the trash.* This command is found in the SPECIAL menu, and it's appropriately called EMPTY TRASH."

To LOCK a document, SELECT it on the desktop by clicking on it once. Then choose GET INFO from the FILE menu. (If you prefer using just the keyboard, type COMMAND-I after selecting the document.) A small information window will appear, containing, various pieces of "info" about your document.

In the lower left-hand corner, you'll see a small check-box labeled "LOCKED." You can lock your document by clicking in the check-box. (An "X" will appear.) Close the GET INFO window.

"LOCKED" items cannot be changed, renamed, or trashed. If you try to discard a locked item, it will move into the trash can (and the can will "bulge"). But when you try to EMPTY TRASH, you'll see a message informing you that the trash contains some "locked items." Unlocked items will be thrown away. Locked items will remain in the trash can.

To discard a locked item, you may either UNLOCK it (by making a trip back to the item's GET INFO window), or discard it by *holding down the option key while simultaneously choosing EMPTY TRASH from the SPECIAL menu.* That's intentionally a bit obscure, to prevent you from accidentally trashing a locked item.

Locking your documents has advantages and drawbacks, however. When they're locked, you can't change their names. And, most importantly, documents must be unlocked before they may be modified. So, in a database, you may have to unlock your large data file before you can add, delete or change its contents. That could bc viewed as a drawback, an inconvenience. Or, it could be seen as "protection" against inadvertent or malicious changes in carefully-prepared files.

Learning to use the trash can may seem a pedestrian chore. But, when the "trash" is your most prized Macintosh art, data or document, you'll be glad you familiarized yourself with the ways of the trash can. ■

# Setting Up A Network With A Firewall

By Edgar Durbin

THE YEAR 2000 ended on an upbeat for me, as I succeeded just before Christmas in connecting all the Macs in our home to a network that connected via a hardware firewall to the Internet using Verizon DSL service. The improvements I made in 2000 to our home computing system included:

- An Ethernet network connecting my Quadra 800 and laser printer upstairs to my wife's G3 Macintosh downstairs;
- An AirPort Base Station bridging a wireless network to the hardwired Ethernet;
- An iBook allowing me to connect to the Internet from anywhere in our home;
- A DSL bridge connecting me to Verizon Online;
- A SonicWALL firewall protecting my internal networks from Internet hackers;
- A new G4 Macintosh for me, to ultimately replace my Quadra 800.

Doing all that was not painless, but it was worth it. There are fewer delays to connect to the Internet, I can browse much faster, and I can compute and connect from any place in the house. Getting to this point involved several steps, some easy and others harder. You can set up an Airport wireless network using Airport cards and a Base Station very easily. If you have already set up a dialup connection to the Internet using the Remote Access control panel, the AirPort Setup Assistant will configure your Macintosh and the Base Station for you. Setting up an Ethernet network is easy, too. You just plug all the Ethernet capable computers and printers into a hub, open the AppleTalk control panel and set AppleTalk to Connect via Ethernet. If you want to share files between the computers on the network, turn on file sharing with the File Sharing control panel. If you want to browse via Ethernet, open the TCP/IP control panel, and set Connect via Ethernet. It's simple:

- To print you use Apple Talk;
- To share you use File Sharing; and
- To browse you use TCP/IP.

Well, it's really not that simple, or I wouldn't be writing this article. The Internet in particular can be a little frustrating, and firewalls finally prodded me to look into how networks work, since there are so many parameters in their configuration.

Networks are complicated, and it helps to sort out the pieces in two dimensions. First, networks can be sorted by type or suite or company. For example, there are different suites of protocols for networks built by IBM, DEC, Microsoft, Novell, Apple, Xerox, and the generic TCP/IP.

Second, protocols are divided into layers. There are several naming systems for protocol layers. The system developed by the International Organization for Standardization (ISO) is called the Open Systems Interconnect (OSI) Reference Model, and has seven layers. The US Department of Defense system has only five layers, merging OSI layers 7-5. The IEEE breaks OSI layer 2 into two layers, not shown in Figure 1. Also, this figure is a simplification, since some protocols span more than one layer. More on this when we discuss Ethernet, below.

AppleTalk is used for printing and file sharing on the Macintosh. It can be turned on or off with the AppleTalk Control Panel. You also select the port by which your Mac connects to the AppleTalk network: either via the modem port, the printer port, or the Ethernet port. For some peripherals AppleTalk must be turned off. For example, AppleTalk must be turned off for my Olympus digital camera to connect to my Mac via the printer port. I haven't learned more about AppleTalk than that, because Apple has made it simple for the user. TCP/IP, the suite of protocols used on the Internet, is not so simple, and so I have more to say about that.

Each layer of a network has a function, as indicated in Figure 1. A given layer in the OSI stack generally communicates with three other OSI layers: the layer directly above it, the layer directly below it, and its peer layer in other networked computer systems. A layer communicates with another in order to obtain the service it provides.

Communications are broken into pieces (called packets or datagrams or frames), each with a header containing addressing information. It's as though a book was sent through the mail page by page, each page wrapped in an envelope (datagram) with an address (header) on the outside.

For data to move across a network from one appli-

| OSI LAYER | | SERVICE | TCP/IP SUITE | APPLE | MICROSOFT | NOVELL |
|---|---|---|---|---|---|---|
| 7 | Application | File transfer, browsing, mail, network management, remote terminal session | FTP, Finger, HTTP, SHTTP, POP3, SMTP, SNMP, Telnet | | | |
| 6 | Presentation | Encryption, data conversion (e.g. BCD to binary, ASCII to EBCDIC) | | AppleTalk Filing Protocol (AFP) | Server Message Block (SMB) | NetWare Core Protocols (NCP) |
| 5 | Session | Start, stop session | DNS | AppleTalk Session Protocol (ASP) | Network Basic Input/Output System (NetBIOS) | Network Basic Input/Output System (NetBIOS) |
| 4 | Transport | Flow control, multiplexing, error checking and recovery | TCP, UDP | AppleTalk Transaction Protocol (ATP) | Network Basic Extended User Interface (NetBEUI) | Sequenced Packet Exchange (SPX) |
| 3 | Network | Routing to LANs and WANs | IP, DHCP | Datagram Delivery Protocol (DDP) | | Internet Packet Exchange (IPX) |
| 2 | Data Link | Transmit data from node to node | SLIP, PPP | | | |
| 1 | Physical | Cabling and electrical signals | Ethernet | Ethernet | Ethernet | Ethernet |

*Figure 1: Sorting of the TCP/IP protocols into OSI layers*

cation to another, it must move through each of the OSI levels. For example, when you request a web page, your browser application must send that request to the Application layer. It acquires a header and is sent to the Presentation layer, where it is again encapsulated within another protocol, given another header, and sent down to the Session layer. It moves on down to the Physical layer, where it is transported over the Ethernet cables. The concept of encapsulation is depicted in Figure 2.

I will not talk about each of the TCP/IP protocols, but will limit this article to those topics you may need to set up a home network like the one in my house. That work will involve the use of the three control panels I mentioned above: AppleTalk, File Sharing, and TCP/IP. In addition, setting up a SonicWALL firewall will lead us to several other topics.

First, note that both AppleTalk and TCP/IP run over Ethernet. This is indicated in Figure 1, and is reflected in the Connect via Ethernet setting that you make in the two control panels. Ethernet is a LAN protocol that operates at OSI layers 1 and 2. That is, it moves data around inside my house, but to get the data out to the phone company and onto the Internet, higher layer protocols (PPP, IP, TCP) are needed. Ethernet comes in various flavors, of which the most familiar is 10BaseT. The 10 means 10 MHz, the rate at which bits are transmitted. The T means twisted pair, the physical conductor of 10BaseT Ethernet. Other types of Ethernet include Gigabit Ethernet, 100BaseT, 10Base5 (ThickNet), and 10Base2 (ThinNet). The last two types use more expensive coaxial cable and connectors, and have been replaced for the most part by 10BaseT and 100BaseT. Gigabit Ethernet operates at one billion bits per second over optical fiber. An Ethernet frame is shown in Figure 3.

The IEEE (Institute of Electrical and Electronic Engineers) has broken the Data Link layer into two

# Washington Apple Pi
# Summer 2001
# Computer Show and Sale

an elegant, relaxed daytime gathering of old and new friends, old and new hardware, old and new software, all in the grand tradition of the late 20th century.

## June 2, 2001
## 9 a.m. to 2 p.m.

Check the Pi Web site in May for the lastest news.

WASHINGTON APPLE PI

Members: $5/person
Non-members: $6/person
Tables: $15 (plus deposit)
$30 with electricity

| System A | | | | | System B |
|---|---|---|---|---|---|
| 7 | | | | | 7 |
| 6 | | | | | 6 |
| 5 | | | | | 5 |
| 4 | | | Header 4 | Data | 4 |
| 3 | | Header 3 | Data | | 3 |
| 2 | Header 2 | Data | | | 2 |
| 1 | Data | | | | 1 |

*Figure 2: Encapsulation of protocols*

| LENGTH (bits) | FIELD NAME | FUNCTION |
|---|---|---|
| 64 | Preamble | Alerts receiving nodes that a frame is coming |
| 48 | Destination address | To: MAC address |
| 48 | Source address | From: MAC address |
| 16 | Type | Specifies the upper-layer protocol to receive the data after Ethernet processing is completed. |
| 368-12,000 | Data | |
| 32 | FCS | Frame check sequence to detect errors |

*Figure 3: Ethernet frame*

| **AppleTalk** | **iBook** | **G4** | **Quadra 800** |
|---|---|---|---|
| Connect via | AirPort | Ethernet | Ethernet |
| Current zone | <no zones available> | <no zones available> | <no zones available> |
| **AppleTalk address** | | | |
| Node | 174 | 128 | 92 |
| Network | 65114 | 65802 | 65664 |
| Network range | 0 to 65534 | 0 to 65534 | 0 to 65534 |
| **Addresses** | | | |
| This Macintosh | 65114.174 | 65802.128 | 65664.92 |
| Hardware address | 00 30 65 30 10 73 | 00 30 65 51 0E A8 | 08 00 07 2B D2 9C |
| Router | <not available> | <not available> | <not available> |

*Figure 4: AppleTalk Control Panel settings*

sublayers, the Logical Link Control (LLC) and Media Access Control (MAC). MAC addresses are hardware addresses that identify each node on a network. They are also known as Ethernet addresses. MAC addresses are 48 bits in length and are expressed as 12 hexadecimal digits. A hexidecimal digit can take the 16 values 0-15, and is written 0,1,2,3,4,5,6,7,8,9,A,B,C,D,E,F. The MAC address of the Ethernet card on the computer on which I am writing this is 00 30 65 51 0E A8, sometimes written 00:30:65:A8:51:0E. The first 6 hexadecimal digits, which are administered by the IEEE, identify the manufacturer or vendor. You can find the MAC address of your Mac from the TCP/IP Control Panel. Click the Info button in the lower left corner of the TCP/IP window, and the MAC address will be displayed as the hardware address. You needn't be concerned with the MAC address, since you don't have any control over it, with standard Apple software. It is set at the factory, and you don't reset it or enter it in any control panel or firewall configuration. Figure 4 gives the settings in the AppleTalk Control Panels for three computers on my home network.

The AppleTalk Control Panel is a view into OSI layers 1 and 2 on your Macintosh. When you open

| | LENGTH (bits) | FIELD NAME | FUNCTION |
|---|---|---|---|
| IP Header | 4 | Version | Version of the IP header |
| | 4 | IHL | Internet header length in units of 32 bit words; points at beginning of data |
| | 8 | Type of service | Quality of service, in terms of precedence, delay, throughput and reliability |
| | 16 | Total length | Total length of datagram, in units of 8 bit words; usually limited to 576 octets |
| | 16 | Identification | Aids in assembling the fragments of a datagram |
| | 3 | Flag | Controls fragmentation of datagram |
| | 13 | Fragment offset | Indicates where in the datagram this fragment belongs |
| | 8 | Time to live | Limits the time a datagram can stay in the internet system |
| | 8 | Protocol | Indicates the next level protocol used in the data portion of the datagram |
| | 16 | Header checksum | Error detection for the header only |
| | 32 | Source address | IP address of the author of the datagram |
| | 32 | Destination address | IP address of the destination to which the datagram is directed |
| | 32 | Options + Padding | |
| | Variable | Data | |

*Figure 5: Internet Protocol version 1, 1981*

the TCP/IP Control Panel, you're into OSI layers 3 and 4. The Internet Protocol (IP) is in layer 3 of the TCP/IP protocol stack. An IP datagram is shown in Figure 5.

The fields of the IP header you are most often concerned with are the Source Address and Destination Address. These are the To and From IP addresses. Since a 32-bit digital number is inconveniently long to write in digital format, IP addresses are written as four "octets" separated by periods. An octet can take $2^8$ =256 values from 0 to 255. E.g. the IP address for google.com is 64.208.34.100. Written in digital format, that is 00001000000110100001000101100100, which is harder to copy without error. IP addresses are assigned by the Internet Address Naming Authority (IANA) so that no two servers have the same address. The IANA has left some blocks of IP addresses unassigned, reserved for the use of private intranets, such as the private network behind my firewall. The unassigned IP number ranges are 10.x.x.x, 172.16.x.x-172.32.x.x, and 192.168.x.x, where x can have any value from 0 to 255. Therefore, there should be no servers connected to the Internet with an address in those ranges. Since $2^{32}$ = 4,294,967,296, the IP version 4 limit of 32 bit IP addresses means there can be no more than 4.3 billion IP addresses. With the growth in the internet and in the use of TCP/IP, this limit is being reached, so IP version 6, being introduced now, will use IP addresses up to 128 bits long.

The service provided by IP is transmission of datagrams, fragmentation of large datagrams when required, and reassembly of datagram fragments. The IP service does not include reliability (error detection

| | LENGTH (bits) | FIELD NAME | FUNCTION |
|---|---|---|---|
| TCP Header | 16 | Source port | |
| | 16 | Destination port | |
| | 32 | Sequence number | |
| | 32 | Acknowledgement number | |
| | 4 | Data offset | Total length of TCP header, in units of 32bit words; points to where the data begins |
| | 6 | Reserved | For future use |
| | 6 | Control bits | |
| | 16 | Window | Limit on the size of data field, in units of 8bits |
| | 16 | Checksum | Error detection for header and data |
| | 16 | Urgent pointer | |
| | 32 | Options + Padding | |
| | | Data | TCP data or higher layer protocol |

*Figure 6: Transmission Control Protocol Datagram*

and correction), flow control (adjusting transmission rate so slower nodes can keep up with faster nodes), or proper sequencing of datagrams to reassemble a long message. Those services are provided instead by a higher level protocol, the Transmission Control Protocol (TCP). A TCP datagram is shown in Figure 6.

The port fields in a TCP header are used by the firewall to correctly route messages from the Internet to the proper clients on the LAN. They are also used for messages going the other direction, from clients to servers that offer multiple services. A single server on the Internet can host more than one service. That is, it may serve files using FTP and web pages using HTTP and mail using SMTP. A client request is directed to the correct service by the destination port number, which is part of the request. The destination port is a 16-bit number (0 to 65525) in the TCP protocol. The TCP header also contains the source port number. Some port numbers (0-1023) are "well known", a list that is maintained by the IANA (Internet Assigned Numbers Authority). Some of these are shown in Figure 7.

Note that we have defined three different addresses used in the TCP/IP suite:

- At OSI layer 2, the MAC or hardware or Ethernet address. E.g. 00:30:65:51:0E:A8 for the Ethernet card in my computer.
- At OSI layer 3, the IP address. E.g. 142.155.40.17 for my firewall public side.
- At OSI layer 4, the port number, part of the TCP header. E.g. 80 for http and 23 for Telnet.

Which address is used depends on which service is being performed. En route to your Internet service provider, a datagram traverses several other devices, and depending on the function performed by each device, it is passed up to the layer at which the function is performed, then passed back down to the Physical layer for transmission to the next node. For example, an Ethernet hub is an OSI layer 1 device, so it just passes on the signals it receives from one node to all other ports on the hub, without any translation. However, a bridge, such as a Base Station, needs a MAC address to which to forward a datagram. This is a level

| PORT | SERVICE |
|---|---|
| 23 | Telnet |
| 20 | FTP (File Transfer Protocol) |
| 21 | FTP |
| 25 | SMTP (Simple Mail Transport Protocol) |
| 53 | DNS (Domain name server) |
| 70 | GOPHER |
| 79 | Finger |
| 80 | HTTP (Hypertext Transfer Protocol) |
| 107 | Remote Telnet |
| 109 | POP (Post Office Protocol) |
| 110 | POP |
| 144 | News |
| 194 | IRC (Internet Relay Chat Protocol) |
| 220 | IMAP (Interactive Mail Access Protocol) |
| 531 | Chat |
| 532 | Readnews |
| | |

*Figure 7: Example well known port numbers*

| TCP/IP | iBook | G4 | Quadra 800 |
|---|---|---|---|
| Connect via | AirPort | Ethernet | Ethernet |
| Configure | Using DHCP Server | Using DHCP Server | Using DHCP Server |
| IP Address | 192.168.114.4 | 192.168.114.2 | 192.168.114.5 |
| Subnet mask | 255.255.255.0 | 255.255.255.0 | 255.255.255.0 |
| Router address | 192.168.114.1 | 192.168.114.1 | 192.168.114.1 |
| Name server addr. | blank | 199.46.23.38 | 199.46.23.38 |

*Figure 8: TCP/IP Control Panel settings*

2 function. My firewall allows only packets to pass that pass certain tests, and those tests can be at levels 3, 4, or 5.

The TCP/IP Control Panel is the place where you set the IP address of your computer and of your ISP. Figure 8 shows the TCP/IP settings for three of the computers in my home network, which is shown in Figure 9. The possible settings for the Configure field are Manually, Using PPP Server, Using BootP Server, and Using DHCP Server. If I had a fixed IP address given me by my ISP and no firewall, I would Configure Manually and enter that IP address in TCP/IP. However, I am using a firewall, which defines a LAN on the "safe" side. The other side of the firewall is the WAN, or Internet side. The Configure Using DHCP Server setting in TCP/IP Control Panels means that all three computers, which are on the LAN, get their IP addresses from the firewall. DHCP stands for "Dynamic Host Configuration Protocol". DHCP's purpose is to supply you an IP address, from a pool held by the server. The alternative is for each client to have a fixed IP address, which would mean more IP addresses would be used. DHCP runs over UDP, utilizing ports 67 and 68. In DHCP's typical use, the server uses a requesting computer's MAC address to uniquely identify it. A DHCP lease is the amount of time that the DHCP server grants to the DHCP client permission to use a particular IP address. I didn't enter the values shown in Figure 8; they were provided by the firewall. For this to happen, I have to tell each computer, using the TCP/IP Control Panels, to look to the router (the firewall) at 192.168.114.1 for an IP address; and I have to tell the firewall to turn on DHCP. (I'll show where you do that later.)

The field Subnet Mask tells each computer what is local and what is remote. If a computer wants to communicate with an IP address that is local (on the LAN), it does so directly. If it wants to communicate with a remote IP address (on the Internet), it has to go via the router, whose address is given in another field in the TCP/IP Control Panel. The operation of a subnet mask is better understood if we rewrite it in binary notation. When we do that, 255.255.255.0 becomes 11111111.11111111.11111111.00000000. The 1 means "same as" and the 0 means "variable". The subnet mask is added to the router address, and the result is "Any

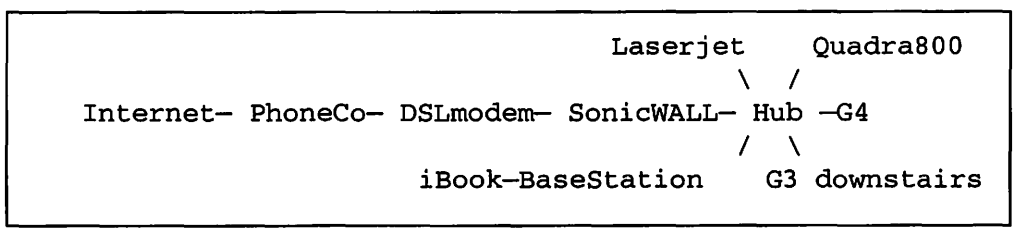



*Figure 9: My home network*

| AirPort | |
|---|---|
| AirPort ID | 00 30 65 30 10 73 |
| Base Station ID | 00 60 1D F2 42 C9 |
| | |
| **AirPort Admin Utility** | |
| Base Station name | LaGuardia |
| IP Address | 192.168.114.3 |
| Configure | |
| Airport tab | |
| Identity [Base Station name] | LaGuardia |
| Network name | LaGuardia |
| Internet tab | |
| Connect using | Ethernet |
| Configure TCP/IP | Using DHCP |
| Network tab | |
| Distribute IP addresses | Not selected |

*Figure 10: AirPort settings*

"Doing all that was not painless, but it was worth it. There are fewer delays to connect to the Internet, I can browse much faster, and I can compute and connect from any place in the house. Getting to this point involved several steps, some easy and others harder."

IP address that is same as 192.168.114.x where x is between 0 and 255 is on the LAN". With this subnet mask, there can be 255 nodes on the LAN.

The Name Server Address gives the location of the server that converts URLs (uniform resource locators, such as google.com and wap.org) to IP addresses. Domain names are easier to remember than IP addresses, and often contain trademarked terms, such as kodak.com or kleenex.com. A domain name server (DNS) is a server that either can translate a URL into an IP address or knows where to ask. Resolving URLs into IP addresses is an OSI layer 5 process.

You configure a computer using AppleTalk and TCP/IP Control Panels. To configure a Base Station, you use the AirPort application and the AirPort Admin Utility application. Figure 10 shows the settings for these applications on my network. Note that "AirPort ID" is the hardware address of the AirPort card in my iBook, the same as the hardware address that I read in the AppleTalk Control Panel. If I had AppleTalk set to Connect via Ethernet, the Hardware Address displayed would be for the Ethernet card in the iBook, which is different from the AirPort card. The Base Station ID is the hardware (MAC) address for the wireless network card in the Base Station. We will see below that the Base Station has another MAC address, for the Ethernet card it contains. While a Base Station contains a modem and can dialup to an ISP, that capability is not used in my network and my Base Station is not connected to a phone line. The RJ45 Ethernet port of my Base Station is connected to the firewall via a hub. My Base Station functions as a bridge from the wireless network to the wired Ethernet. As I noted earlier, a bridge operates at OSI level 2 and reads MAC addresses to send datagrams to the correct nodes on the Ethernet. I've given the same name to my wireless network and to my Base Station.

My firewall took some time to set up, though the large number of parameters to set there stimulated me to learn more about networks and how a Macintosh connects to them. The basic problem was that I needed an upgrade to the SonicWALL to allow me to connect using PPPoE. The firewall is like a computer that uses solid state flash memory instead of a hard disk. Whereas a computer application is updated by revising the software on the hard disk, the SonicWALL is updated by uploading new firmware to its flash memory. The updates are obtained from the http://firmware.sonicwall.com/ web site. The expanded update is a file with the extension .bin. This is not a compressed file; running Stuffit or BinHex or other decompression applications to expand it is unnecessary. It is ready to upload as is.

To get it into your firewall, you connect a computer to the private side (a.k.a. safe or LAN side, to distinguish it from the Internet or WAN side) of the firewall and navigate to the firewall with a browser. As SonicWALL comes from the factory, its address is http://192.168.168.168. It behaves like a web server, and provides HTML pages to show the settings currently

# MacWorld New York City 2001

# One-Day Bus Trip

# July 19, 2001

MacWorld New York will be held July 17-20, 2001. The Washington Apple Pi Bus Trip will be on Thursday, July 19th.

**New and Improved:** This year the bus will leave from two locations. Many members voiced a desire to have a Virginia as well as a Maryland pick up site, so we are arranging to have a bus leave from Micro Center in the Pan Am Plaza off Nutley Street in Vienna, VA as well as the Commuter Parking Lot in Rockville, MD. The price: **$65.00** per member. To reserve a spot, send an E-mail, with a subject line of "MacWorld Bus Trip," to:

**office@wap.org**

Comments from last year:

"What was not promised was that I would learn as much from my seat mate on the bus and my table mate at dinner as I did at MacWorld..."

"The day was a long one but worth it...a real treat for Mac enthusiasts...Thanks again for a great trip."

"The MacWorld Expo is a wonderful experience and everyone could benefit from attending as it offers something for everyone at every level of experience."

"I deeply appreciate the thoughtful way this trip was planned. Even as one of 100 persons traveling, I felt my individuality was respected."

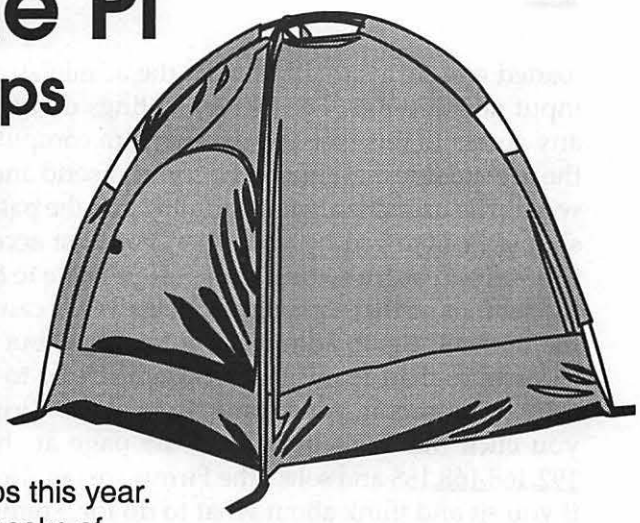
All I can say is, any of you that didn't go on the WAP Bus trip to MacWorld missed out on a wonderful opportunity! It was the best $62.00 I've spent in along time."

WASHINGTON APPLE PI

| | |
|---|---|
| **General button** | |
| Status tab | |
| Serial number (hardware address) | 00 40 10 0C DE 62 |
| Network tab | |
| Network Addressing Mode | NAT with PPPoE Client |
| LAN Settings | |
| SonicWALL LAN IP Address | 192.168.114.1 |
| LAN Subnet Mask | 255.255.255.0 |
| ISP Settings (PPPoE) | |
| User Name | |
| Password | |
| WAN Settings | |
| WAN Gateway (Router) Address | 10.1.1.2 |
| SonicWALL WAN IP (NAT Public) Address | 142.155.40.17 |
| DNS Settings | |
| DNS Server 1 | 199.46.23.43 |
| DNS Server 2 | 199.46.23.38 |
| **DHCP button** | |
| Setup tab | |
| General | |
| Enable DHCP Server | √ |
| Lease Time | 60 min |
| Client Default Gateway | 192.168.114.1 |
| DNS | |
| Specify manually | |
| DNS Server 1 | 199.46.23.38 |
| DNS Server 2 | 199.46.23.37 |
| DNS Server 3 | 0.0.0.0 |
| WINS | |
| WINS Server 1 | 0.0.0.0 |
| WINS Server 2 | 0.0.0.0 |
| Dynamic Ranges | 192.168.114.2 – 192.168.114.11 |
| Status tab | |
| DHCP Leases | |
| Current | 4 |
| Available Dynamic | 6 |
| Available Static | 0 |
| Total | 10 |
| Current DHCP Leases | 192.168.114.2 00:30:65:A8:51:0E dynamic [G4] |
| | 192.168.114.3 00:30:65:3A:65:ED dynamic [Base Station] |
| | 192.168.114.5 08:00:07:9C:2B:D2 dynamic [Quadra800] |
| **Advanced button** | |
| Intranet tab | |
| SonicWALL's WAN link is connected directly to the Internet router | √ |

*Figure 11: SonicWALL settings*

# Washington Apple Pi
## Summer Computer Camps
# 2001



Washington Apple Pi will be doing three different Camps this year.
The first will be 3 weeks of Youth Camp followed by 2 weeks of
Teacher/Parent Camp and rounded out with a week of half day camp for our Seniors.

**Who:**
Students must be age 14 and above for the Youth Camp.

**Class Size:**
Class size is limited to ten (10) participants in each session

**Price:**
$300.00 for each week of camp for Youth and Teachers/Parent Camp
$150.00 for the week of half days for Senior Camp

**When:**
The Summer Camps are one week computer camps.

Camp is from 9:00 am until 5:00 pm (Monday -Friday) for Youth and Teacher/Parent Camp.
Senior Camp is half day camp that runs from 9 am until noon.

For Youth and Teacher/Parent Camps, lunch each day will be from Noon until 12:45 pm.
Students are responsible for bringing their own lunch or bringing money to purchase lunch from a delivery restaurant.

**Session Dates.....**

**Youth Camp**
Week of July 23 through July 27
Week of July 30 through August 3
Week of August 6 through August 10

**Teacher/Parent Camp**
Week of August 13 through August 17
Week of August 20 through August 24

**Senior Camp**
Week of August 27 through August 31

WASHINGTON APPLE PI

loaded and forms to allow you, the administrator, to input new settings. The factory settings do not allow any access to this web site except from computers on the private side that supply the correct userid and password. The userid is always "admin" and the password should be changed by you when you first access the firewall and begin setting it up. It is possible to change the settings so that someone from the WAN can access the firewall, e.g. to administer it remotely; but that is less secure than requiring an administrator to physically be present in your home. To load new firmware, you click the Tools button on the page at http://192.168.168.168 and select the Firmware tab. Note that if you sit and think about what to do for 5 minutes or longer, your authentication expires, and you have to re-enter userid and password. To help you in configuring SonicWALL for DSL, there is an assistant, which you can invoke if it does not launch automatically, by clicking the Tools button on the page at http://192.168.168.168 then the Launch Wizard button at the Preferences tab.

Many of the settings on my firewall are shown in Figure 11. I haven't implemented several features of the firewall that other users, e.g. those with young families, may want to use. I haven't blocked access to any web sites; I haven't set up access privileges for different users; I haven't changed any of the allowed services (HTTP, FTP, SMTP, et al.) from their factory settings. The two features that you must use to connect to DSL with multiple computers, however, are NAT and DHCP. NAT is network address translation. I have as many as four computers on the private side, and they can all simultaneously be browsing. The WAN side of the firewall has the single IP address assigned to my DSL account. So if computer 1 asks for web page A and computer 2 asks for web page B, verizon.net sends both page A and page B to the same IP address. However, they are sent to different port numbers. The firewall looks up the port number in its translation table, and sends the page to the proper browser to display.

Note that the only settings I had to make for DSL were the router address, the DNS address, and NAT using PPPoE Client. I didn't have to install any software from my ISP. The instructions that come with Verizon service assume that you will not use a firewall, and involve the installation of software off a CD while your computer is directly connected to the DSL modem. This will install a couple of extensions and an application called Verizon Online on your computer. It may also overwrite any version of Netscape Communicator you have already installed, so you should save your Address Book and Bookmarks before installing. You should also record the settings for home page, incoming and outgoing mail servers, and mail address, since the installer will change them to the values for your Verizon account.

"Networks are complicated, and it helps to sort out the pieces in two dimensions. First, networks can be sorted by type or suite or company. For example, there are different suites of protocols for networks built by IBM, DEC, Microsoft, Novell, Apple, Xerox, and the generic TCP/IP."

I have reset my home page and my mail server preferences in Netscape back to Washington Apple Pi, so while I browse at high speed using the Verizon web server, I can retrieve mail from WAP and send mail from WAP. To send mail from wap.org while using verizon.net as my ISP, I have to first Get Mail, then Send Mail within 30 seconds. Otherwise, when I try to Send Mail I will get the error message that the mail was refused by wap.org because "We do not relay mail". The 30 second rule is in effect to prevent spammers from using the WAP mail servers. When I Get Mail, my Internet address is put on the list of machines from which Send Mail will be accepted, but it stays on that list for just 30 seconds. That is, the window of opportunity for any spammers using verizon.net is just open for 30 seconds, and is thus unlikely be used by anyone except the same user who logged on, giving a valid WAP password with the Get Mail requrest.

Verizon isn't the only supplier of DSL or high speed Internet service in the Washington area. You can look at the TCS Conference 3 Bulletin Board 2 or browse at dslreports.com to do your own market survey. I didn't look around much, and subsequently I learned from dslreports.com that Verizon has a bad rating from other users. As I write this, Verizon is 27th down the list of national DSL ISPs at http://www.dslreports.com/gbu. (There is a separate list for cable ISPs.) However, I chose Verizon because it had the lowest total cost (monthly fee plus startup fee plus equipment cost). The worst part of Verizon so far has been very long waits for telephone support. I think that has improved in the month that I have had DSL service, though. ■

# Macintosh Tutorials

## General Level Classes

**Mouse Mousse - (Part 1 of 5 Part New User Set)**

Your new pet needs care and training. This two hour class with one hour lab session will teach you how to tame the little beast! Tricks such as clicking, double clicking, pointing and dragging will be taught along with hints for care and feeding. If you own an iBook and would like to use that during the class, please bring it to class with you. This class may be re-taken for free by members if further training is needed.

**Prerequisite:** None.

**Number of Sessions:** One (2 hours of class time and 1 hour of lab time)

**Price:** Standard Members: $35.00, Associate Members: $50.00, Non-Members: $50.00

**Instructor:** Pat Fauquet

**Note:** Since most members can use the mouse effectively, this class is not required before taking Write It! - Save It! - Print It!

Call Office for dates

**Write It!- Save It! - Print It! - (Part 2 of 5 Part New User Set)**

This introductory class will focus on using AppleWorks to write, print, and save your first computer documents. Write It! will include elementary text formatting skills. Save It! will help you learn to save documents in a central location and then find them again. Print It! will help you set up your printer, preview your document, make choices about color, and paper quality.

**Prerequisite:** None.

**Number of Sessions:** One (2 hours of class time and 1 hour of lab time)

**Price:** Standard Members: $35.00, Associate Members: $50.00, Non-Members: $50.00

**Instructor:** Pat Fauquet

5/7/00 - 1 pm - 3 pm and Lab from 3 pm - 4 pm
6/6/00 - 1 pm - 3 pm and Lab from 3 pm - 4 pm
7/2/01 - 9:30 am - 11:30 am and Lab from 11:30 am - 12:30 pm

**Finding Your Way Around the Finder - (Part 3 of 5 Part New User Set)**

Your computer desktop fills with windows and icons quickly! Learn the secrets of the Finder to deal with them!

**Prerequisite:** None.

**Number of Sessions:** One (2 hours of class time and 1 hour of lab time)

**Price:** Standard Members: $35.00, Associate Members: $50.00, Non-Members: $50.00

**Instructor:** Pat Fauquet

5/14/00 - 1 pm - 3 pm and Lab from 3 pm - 4 pm
6/20/00 - 1 pm - 3 pm and Lab from 3 pm - 4 pm
7/6/01 - 9:30 am - 11:30 am and Lab from 11:30 am - 12:30 pm

**Surfing 101 - (Part 4 of 5 Part New User Set)**

Learn how to catch your first Internet wave! This class will give an introduction to the browser window, show you some great Internet sites, teach you how to make bookmarks to find your way back and send your first email messages.

**Prerequisite:** None.

**Number of Sessions:** One (2 hours of class time and 1 hour of lab time)

**Price:** Standard Members: $35.00, Associate Members: $50.00, Non-Members: $50.00

**Instructor:** Pat Fauquet

5/21/00 - 1 pm - 3 pm and Lab from 3 pm - 4 pm
6/25/00 - 1 pm - 3 pm and Lab from 3 pm - 4 pm
7/9/01 - 9:30 am - 11:30 am and Lab from 11:30 am - 12:30 pm

**Simplify Your Computer Life - (Part 5 of 5 Part New User Set)**

Are you tired of having to open so many folders to get to AppleWorks or the Internet? Do you save things only to lose them? Can you throw something away when the trash can is covered? This class will teach you how to make your computer easier to use!

**Prerequisite:** None.

**Number of Sessions:** One (2 hours of class time and 1 hour of lab time)

**Price:** Standard Members: $35.00, Associate Members: $50.00, Non-Members: $50.00

**Instructor:** Pat Fauquet

5/30/01 - 9:30 am - 11:30 am and Lab from 11:30 am - 12:30 pm
6/27/00 - 1 pm - 3 pm and Lab from 3 pm - 4 pm
7/13/01 - 9:30 am - 11:30 am and Lab from 11:30 am - 12:30 pm

**Brush Up Your Mac Skills**

This class is meant for the new user as well as the user who has just upgraded to a new computer and wants to learn more about the basic operation of the Macintosh. This class is also recommended for Macintosh owners who are new to Mac OS 8.0 and above or those who have never really learned all the things that the Mac OS has to offer to the computer user. In addition to start up, sleep and shutdown procedures, the student will learn how a computer works and common Macintosh terminology. The Finder and its basic operation

will be fully covered. This discussion will include the menu bar, Apple menu and the Application Switcher. Students will learn how to access and use the built-in help application on the Macintosh. Error messages, dialog boxes, icons, folders, and view options will be discussed. You will learn the basics of word processing and text formatting. Copying, cutting, pasting, dragging and dropping will also be covered. Basic system and mouse maintenance will be included. The fundamentals of searching for files will also be covered.

**Prerequisite:** None.

**Number of Sessions:** Two.

**Price:** Standard Members: $70.00, Associate Members: $100.00, Non-Members: $100.00

**Instructor:** Jim Ritz

5/8/01 and 5/10/01 - 1 pm - 4 pm each day
5/22/01 and 5/24/01 - 9:30 am - 12:30 pm each day
6/12/01 and 6/14/01 - 1 pm - 4 pm each day
7/3/01 and 7/5/01 - 9:30 am - 12:30 pm each day

**Ride the Internet Wave**

This three hour class, intended for users of all Internet browsers, will introduce you to the World Wide Web. Learn what the various buttons on the browser window do. Learn to customize the browser window to meet your visual needs. Learn how an Internet address works and how to deal with error messages that appear. You will learn how to use Sherlock, search engines, directories and metasearch sites to find the information you seek. Learn how to capture pictures and text from the Internet and how it print web pages. This class is appropriate for all users of the Internet including America Online customers. It is suggested that all participants enroll in one of the e-mail courses to complete their introduction to the Internet.

**Prerequisite:** 5 Part New User Set or Brush Up Your Mac Skills.

**Number of Sessions:** One

**Price:** Standard Members: $35.00, Associate Members: $50.00, Non-Members: $50.00

**Instructor:** Jim Ritz

5/8/01 - 9:30 am - 12:30 pm
5/22/01 - 1 pm - 4 pm
6/12/01 - 9:30 am - 12:30 pm
7/3/01 - 1 pm - 4 pm

**Introduction to AppleWorks**

This class will introduce the student to the integrated software package known as AppleWorks. The course will begin with an introduction to the fundamentals of the AppleWorks environment: the window layout, the help menu, and the universal commands. Each of the six modules (Text, Draw, Paint, Spreadsheet, Database, and Communications) will be treated separately but the emphasis will be on text and draw documents. The course will conclude with an examination of some basic integrated applications.

**Prerequisite:** 5 Part New User Set or Brush Up Your Mac Skills.

**Number of Sessions:** One

**Price:** Standard Members: $35.00, Associate Members: $50.00, Non-Members: $50.00.

**Instructor:** Pat Fauquet and Jim Ritz

5/17/01 - 9:30 am - 12:30 pm
6/19/01 - 9:30 am - 12:30 pm
6/22/01 - 9:30 am - 12:30 pm

**Web Pages Fast and Easy**

Want a web page, but don't want to have to buy new software, learn HTML, learn about FTP, and find a page host? Let Apple do it for you! In this three hour class you can make a web page and publish it on the web! Use that page to show off family pictures or items you want to sell on eBay, post a family newsletter, put your resume online for all to see, post an invitation to a party or even make a place to share files with other people. This class works best for people using Mac OS 9, but instructions will be given that will allow users of Mac OS 8 to also use the iDisk. Bring a few photos to scan and leave with your pages on the Web!

**Prerequisite:** 5 Part New User Set or Brush Up Your Mac Skills

**Number of Sessions:** One

**Price:** Standard Members: $35.00, Associate Members: $50.00, Non-Members: $50.00.

**Instructor:** Pat Fauquet

5/3/01- 1 pm - 4 pm
5/15/01 - 9:30 am - 12:30 pm
6/5/01- 1 pm - 4 pm
6/21/01 - 9:30 am - 12:30 pm
7/12/01 - 1 pm - 4 pm

**Introduction to Digital Video Cameras—Finding the Right Camcorder**

When you shop for a camcorder, the choices among features can seem overwhelming. This class will help you choose the right camera for your needs. Features such as automated controls, media format, image stabilization, low light shooting, batteries and accessories will be discussed. We will also discuss places to shop and how to get good prices on cameras, batteries and accessories.

**Prerequisite:** 5 Part New User Set or Brush Up Your Mac Skills

**Number of Sessions:** One

**Price:** Standard Members: $50.00, Associate Members: $75.00, Non-Members: $75.00.

**Instructor:** Pat Fauquet
6/26/01 - 1 pm - 4 pm

## Medium Level Classes

**The Mac—Digging a Little Deeper**

The Mac—Digging a Little Deeper will follow up on the concepts taught in Brush Up Your Mac Skills. You will learn more advanced Macintosh skills and terminology including contextual menus and advanced Finder options, the custom installation of software and updating software applications. Students will learn about memory error messages and how to deal with them. Hard drive organization, archiving and backup strategies will be discussed. An introduction to managing system extensions and control panels will be covered along with virus protection, system enhancements and Macintosh "housekeeping" philosophies. Students will learn how to use Disk First Aid, how to deal with system crashes and what causes them. They will also learn to use Sherlock to find files on the computer, to find text phrases in saved data, and to find items on the Internet.

**Prerequisite:** 5 Part New User Set or Brush Up Your Mac Skills

**Number of Sessions:** Two

**Price:** Standard Members: $100.00, Associate Members: $150.00, Non-Members: $150.00

**Instructor:** Jim Ritz
5/01/01 and 5/03/01 - 9:30 am - 12:30 pm each day
5/15/01 and 5/17/01 - 1 pm - 4 pm each day
6/05/01 and 6/07/01 - 9:30 am - 12:30 pm each day
6/19/01 and 6/21/01 - 1 pm - 4 pm each day
7/10/01 and 7/12/01 - 9:30 am - 12:30 pm each day

**Making your Mac Sing**

Making your Mac Sing will follow up on the concepts taught in The Mac—Digging a Little Deeper. In this hands-on class students will learn how to back up the essential data and settings files, then how to install, update and upgrade system software. They will learn the difference between clean and dirty system installations and when to use them. They will learn how to remove installed software, manage system conflicts, and troubleshoot crashes. Software such as Norton Utilities, Tech Tool Pro, Conflict Catcher, Spring Cleaning, and Disk Warrior will be demonstrated and used to fix computer problems. Hard drive initialization, partitioning, defragmentation and optimization will be discussed and demonstrated. Students are encouraged to bring their Macs to use in class to actually troubleshoot and update their own computers. iMac owners should bring their computer, keyboard and mouse. All others should bring only their CPU and modem. If students own Zip drives or Super Drives they should also bring those to back up important data.

**Prerequisite:** The Mac—Digging a Little Deeper

**Number of Sessions:** Two

**Price: Standard Members:** $100.00 Associate Members: $150.00, Non-Members: $150.00

**Instructor:** Pat Fauquet and Jim Ritz
5/4/01 and 5/11/01 - 1 pm - 4 pm each day

**iVisit iMac**

**Take a working tour of the software included on the iMac.**

This two part, six hour class will introduce the various pieces of software included with the iMac. Students will learn how use the assistants and templates included with AppleWorks to perform tasks such as writing a letter, making a computer address book, flyer or certificate, and printing an envelope. They will learn how to send and receive a fax from their iMac and begin using Quicken to balance their checkbook. They will learn how to make a favorites list in Internet Explorer, use the address book and send a file to someone using Outlook Express. They will also learn how to install and look up items in the World Book Encyclopedia, and to make a personalized start page on their computer. Strategies to win with Nanosaur and protect children with the EdView Internet Safety kit will also be shown. This class now includes the new Kid Pix Deluxe, a children's graphics and animation program.

**Prerequisite:** 5 Part New User Set or Brush Up Your Mac Skills

**Number of Sessions:** Two

**Price:** Standard Members: $100.00, Associate Members: $150.00, Non-Members: $150.00

**Instructor:** Pat Fauquet and Jim Ritz
5/9/01 and 5/16/01 - 9:30 am - 12:30 pm each day

**Networks and Networking - What does it all mean?**

AirPorts, Ethernet, Router, Hub, Server, Appletalk, LAN, WAN, etc. Do you want to have a better understanding of just what all of this means and how it works? If you do then this class is for you. This class will be a discussion of all these different topics as well as just how to create a network. Come learn the possibilities offered by the Macintosh platform to share not only printers, but also files, applications and even modems between two or more computers. Learn about the built in networking software in every Macintosh and various hardware and software options available to do even more. This class will cover AppleTalk and PhoneNet connectors, - switch boxes, serial port expanders, USB ports and hubs, ethernet, cards and transceivers. Hubs, routers and servers will also be discussed. Learn how to install network cabling without tearing down all the walls and learn how to determine what kind of cable to buy and how to put the

connectors on the cables.

**Prerequisite:** 5 Part New User Set or Brush Up Your Mac Skills

**Number of Sessions:** One

**Price:** Standard Members: $50.00, Associate Members: $75.00, Non-Members: $75.00.

**Instructor:** Pat Fauquet

Call Office to get on list

**E-mail with Netscape Communicator**

This class will deal specifically with the e-mail capabilities of Netscape Communicator. Students will learn how to send, receive, reply to and forward email. They will learn how to save mail into folders, how to use and manage the address books and how to send mail to groups of people. They will learn how to attach files to e-mail messages and how to deal with the attached files that they receive. Students will also learn where their email and address books are stored and how to back them up.

**Prerequisite:** 5 Part New User Set or Brush Up Your Mac Skills.

**Number of Sessions:** One

**Price:** Standard Members: $50.00, Associate Members: $75.00, Non-Members: $75.00

**Instructor:** Pat Fauquet, Jim Ritz

5/1/01 - 1 pm - 4 pm
6/7/01 - 1 pm - 4 pm
7/5/01 - 1 pm - 4 pm

**E-mail with Microsoft Outlook Express**

This class will deal specifically with Microsoft's Outlook Express e-mail application. Students will learn how to send, receive, reply to and forward email. They will learn how to save mail into folders, how to use and manage the address books and how to send mail to groups of people. They will learn how to attach files to e-mail messages and how to deal with the attached files that they receive. Students will also learn where their email and address books are stored and how to back them up.

**Prerequisite:** 5 Part New User Set or Brush Up Your Mac Skills.

**Number of Sessions:** One

**Price:** Standard Members: $50.00, Associate Members: $75.00, Non-Members: $75.00

**Instructor:** Pat Fauquet

5/30/01 1 pm - 4 pm

**E-mail with America Online**

This class will deal specifically with the e-mail capabilities of America Online. Students will learn how to send, receive, reply to and forward email. They will learn how to save mail into folders, how to use and manage the address books and how to send mail to groups of people. They will learn how to attach files to e-mail messages and how to deal with the attached files that they receive. Students will also learn where their email and address books are stored and how to back them up.

**Prerequisite:** 5 Part New User Set or Brush Up Your Mac Skills.

**Number of Sessions:** One

**Price:** Standard Members: $50.00, Associate Members: $75.00, Non-Members: $75.00

**Instructor:** Pat Fauquet

5/11/01 - 9:30 am - 12:30 pm

**Downloading , Installing and Using Files and Software From the Internet and from CD-Rom's.**

Learn how to find files and software on the Internet. Learn how download them, how to install and use them. Learn about Macintosh viruses, and how to combat them. This one session class is intended for students who have completed Ride the Internet Wave and an e-mail class and who want to learn more about the various software resources that are available on the Internet. These will include software, fonts, Sherlock and contextual menu plug-ins, Applescripts, and system resources.

**Prerequisite:** 5 Part New User Set or Brush Up Your Mac Skills.

**Number of Sessions:** One

**Price:** Standard Members: $50.00, Associate Members: $75.00, Non-Members: $75.00

**Instructor:** Pat Fauquet, Jim Ritz

5/10/01 - 9:30 am - 12:30 pm
5/24/01 - 1 pm - 4 pm
6/14/01 - 9:30 am - 12:30 pm
7/10/01 - 1 pm - 4 pm

**We Need a Picture Here**

Calling all people who don't want to be graphic professionals, but who would like to be able to put Photos, Clip Art, Draw, Paint, Vector, and Bitmap into an email, flyer or newsletter. In this three hour class students will be introduced the secrets of drawing and paint programs for the computer. They will learn how to use graphics from computer programs, clip art CDs and the Web to enhance their documents. They will learn how to re-size and re-color graphics that are "just about right" to make them "just right." Elementary retouching of photos will also be covered.

**Prerequisite:** 5 Part New User Set or Brush Up Your Mac Skills.

**Number of Sessions:** One

**Price:** Standard Members: $50.00, Associate Members:

$75.00, Non-Members: $75.00

**Instructor:** Pat Fauquet

5/7/01 - 9:30 am - 12:30 pm

6/22/01- 1 pm - 4 pm

**AppleWorks and Newsletters**

Learn how to use the newsletter assistant in AppleWorks to easily produce newsletters for a variety of audiences. In this class participants will produce a basic newsletter, then learn how to use the Mac OS stationery pad function to speed the production of future newsletters. Basics of graphic design, layout, typography, writing style and suggestions for economical reproduction will also be covered. This class is not an introduction to AppleWorks.

**Prerequisite:** 5 Part New User Set or Brush Up Your Mac Skills. In addition Introduction to AppleWorks class or a good working knowledge of another word processing application is suggested before attending this class.

**Number of Sessions:** One

**Price:** Standard Members: $50.00, Associate Members: $75.00, Non-Members: $75.00.

**Instructor:** Pat Fauquet

6/29/01 - 9:30 am - 12:30 pm

7/6/01 - 1 pm - 4 pm

**AppleWorks Advanced**

In this class we will take AppleWorks to a new level! Learn how to make easy outlines, lists, and check-off charts. Make great slide shows and presentations right in AppleWorks. Learn how to dress up charts and graphs, how to make specialized dictionaries, and how to have AppleWorks read to you! Learn the secrets of stationary files, how to make your own AppleWorks libraries store not only pictures, but also frequently used text strings. Learn how to write personalized form letters and how to do special layouts for newsletters. Many of the projects included will be using the capabilities of AppleWorks. Students will receive templates, stationary files and handouts to take home. If you have any feature of the program that you would like covered in particular, please mention it when you sign up.

**Prerequisite:** 5 Part New User Set or Brush Up Your Mac Skills and Introduction to AppleWorks or a good knowledge of the basics of AppleWorks.

**Number of Sessions:** One

**Price:** Standard Members: $50.00, Associate Members: $75.00, Non-Members: $75.00.

**Instructor:** Pat Fauquet

5/23/01- 1 pm - 4 pm

6/29/01- 1 pm - 4 pm

7/13/01- 1 pm - 4 pm

## Some Specifics

**Who** Standard members are those who have paid the standard membership dues and includes all family members living within the household of a standard member. Associate members are those who have only paid the associate membership dues.

**What** The tutorial program of Washington Apple Pi is hands-on training for our members in the use of Macintosh computers. The tutorial room is furnished with computers so that each student has the use of a computer during class.

**When** Classes are held each month at different times. Since the listing of classes in this Journal was done months in advance pleasecheck the web site at http://www.wap.org/classes/ for any changes or updates to the class calendar.

**Where** Unless otherwise stated, all tutorials sponsored by Washington Apple Pi are given at the office located at 12022 Parklawn Drive in Rockville, Maryland. A map to the office may be found on the web site at http://www.wap.org/info/about/officemap.html.

**How** To register for a class please call the Office during normal business hours. If you would like to inquire about a class and the office is not open, please send email with the classes you wish to know about along with a daytime phone number were the office may reach you to the email address of office@wap.org. The office will get back to you either by email or by telephone.

**Fees** Class fees vary due to the level of the class. Please see the specific class description for the fee for that class. Pre-registration and Pre-Payment must be made to hold a seat.

**Class Size** Class size is limited to 6 students per class.

**Instructor Cancellation** If a class is canceled by the instructor, all students will be notified of the cancellation. Please check your home answering machine if you have not given a work number for notification.

**Student Cancellation** A student cancellation must be received 72 hours prior to the scheduled class time. Student Cancellations may only be made via telephone during Washington Apple Pi's business hours or via email to the email address of office@wap.org. The office does not have an answering machine - only an announcement machine.

**Introduction to FileMaker Pro**

This course covers what a database is, database terms, how to plan a database, and create database fields and layouts. Searching, sorting, printing and editing information in a database will also be covered.

**Prerequisite:** 5 Part New User Set or Brush Up Your Mac Skills

**Number of Sessions:** One

**Price:** Standard Members: $50.00, Associate Members: $75.00, Non-Members: $75.00.

**Instructor:** Pat Fauquet, Jim Ritz

5/4/01 - 9:30 am - 12:30 pm
6/26/01 - 9:30 am - 12:30 pm
7/1/01 - 1 pm - 4 pm

**Introduction to Spreadsheets**

This class will introduce basic spreadsheet concepts. Students will learn how to set up a spreadsheet, how to enter and edit numbers and words, how to enter basic formulas and make basic charts and graphs. They will learn how to sort data and how to print the whole spread sheet or only a portion of it. Students will use either the spreadsheet module of AppleWorks (ClarisWorks) or Excel. This class is not meant for persons who are intermediate or advanced users.

**Prerequisite:** 5 Part New User Set or Brush Up Your Mac Skills

**Number of Sessions:** One

**Price:** Standard Members: $50.00, Associate Members: $75.00, Non-Members: $75.00.

**Instructor:** Jim Ritz

Call Office to get on list

**Advanced FileMaker Pro and Clinic**

This class is for those who have some experience with FileMaker Pro and need to learn more for specific projects. Questions are welcome and students specific problems will be discussed. The class will be explanations with a strong questions and answer format. You should bring along on floppy/zip a sample of things you would like help.

**Prerequisite:** 5 Part New User Set or Brush Up Your Mac Skills.

**Number of Sessions:** One

**Price:** Standard Members: $50.00, Associate Members: $75.00, Non-Members: $75.00

**Instructor:** Pat Fauquet

5/11/01 - 9:30 am - 12:30 pm
6/28/01 - 9:30 am - 12:30 pm
7/9/01 - 1 pm - 4 pm

**Introduction to Scanners**

Bring your scanner, the software, manual and some photos to class and learn all about scanning. Learn to install the software and update it. Learn how to scan into programs like Adobe PhotoDeluxe, PhotoShop and Graphic Converter. Learn about the scanner controls such as resolution, brightness, contrast, sharpness and how to use them. Learn how to prepare a photo file to attach it to an e-mail message. Learn the secrets of OCR and when to use it. If you do not own a scanner, but are in the market for one, use one of the classroom scanners and get tips on which scanner will meet your needs.

**Prerequisite:** 5 Part New User Set or Brush Up Your Mac Skills.

**Number of Sessions:** One

**Price:** Standard Members: $50.00, Associate Members: $75.00, Non-Members: $75.00

**Instructor:** Pat Fauquet

5/9/01 - 1 pm - 4 pm

**Introduction to Digital Cameras**

Bring your digital camera and accessories to class and learn how to use it. Learn about media types, batteries, card readers, flash units, accessory filters and lenses and how to use them. Learn shooting and editing tips, how to print photos, how to attach them to e-mail, and how to put them on web pages. If you do not have a digital camera, come anyway and learn how to choose one. A variety of digital cameras will be available for student use during class.

**Prerequisite:** 5 Part New User Set or Brush Up Your Mac Skills.

**Number of Sessions:** One

**Price:** Standard Members: $50.00, Associate Members: $75.00, Non-Members: $75.00

**Instructor:** Pat Fauquet

6/6/01 - 9:30 am - 12:30 pm

**Improving Digital Photos and Scans**

Now that you have scanned that photo, taken a picture with a digital camera, or had photo disks made, learn how to improve your photos using inexpensive programs like Adobe PhotoDeluxe and GraphicConverter. Learn to lighten, darken, crop, and combine pictures to make them ready for printing, emailing and putting them in web pages.

**Prerequisite:** 5 Part New User Set or Brush Up Your Mac Skills.

**Number of Sessions:** One

**Price:** Standard Members: $50.00, Associate Members: $75.00, Non-Members: $75.00

**Instructor:** Pat Fauquet

5/16/01 - 1 pm - 4 pm

**Web Pages-The How To Dos**

When your web page grows to more than two pages, its

time to get organized!

Learn how web pages differ from printed documents, what you can and can't control in web page design. Learn how to organize your files to make it easier to update your pages. Learn how to register a domain, upload pages to a web server and how to get people to visit your site. Learn about graphic types and when to use them. This class replaces Web Page Workshop and is the prerequisite for all other web page classes at Washington Apple Pi.

**Prerequisite:** 5 Part New User Set or Brush Up Your Mac Skills

**Number of Sessions:** One

**Price:** Standard Members: $50.00, Associate Members: $75.00, Non-Members: $75.00.

**Instructor:** Pat Fauquet

5/14/01 - 9:30 am - 12:30 pm
6/25/01 - 9:30 am - 12:30 pm

**Making Web Pages with Adobe PageMill or Claris HomePage**

Learn how to make web pages, format the text, add pictures and link pages together. Learn about tables and how to and use them. Learn about the site management features of these programs and how to upload your pages to the web server.

**Prerequisite:** 5 Part New User Set or Brush Up Your Mac Skills along with Web Pages-The How To Dos or the permission of the instructor.

**Number of Sessions:** Two

**Price:** Standard Members: $100.00, Associate Members: $150.00, Non-Members: $150.00.

**Instructor:** Pat Fauquet

Call Office to get on list

**Jazz Up Your Web page**

In this all-day workshop students will learn how to make and prepare backgrounds, headlines, clip art, buttons, rules, dividers and animations for web pages. They will also learn how to construct graphic sets. Students will learn about the GIF, JPEG and PNG formats and when to use them. If you want to use these projects in an actual web page, please sign up for a web page class in addition to this class.

**Prerequisite:** 5 Part New User Set or Brush Up Your Mac Skills along with Web Pages-The How To Dos or the permission of the instructor.

**Number of Sessions:** Two

**Price:** Standard Members: $100.00, Associate Members: $150.00, Non-Members: $150.00.

**Instructor:** Pat Fauquet

5/2/01 - 9:30 am - 4 pm
6/4/01 - 9:30 am - 4 pm

**iWant to make an iMovie!**

Bring your digital video camera with some footage in it and learn how to make iMovies. Learn shooting tips, how to use the software, and what to do with completed movies.

## Washington Apple Pi Tutorial Registration Form

Washington Apple Pi
12022 Parklawn Drive
Rockville, MD 20852
301-984-0300

Name _____

Address _____

City/State/Zip _____

Phone (day) _____ (evening) _____

Member Number _____ Non-member _____

Number of Classes ___ x Class Fee $ _____ = Total Fee $ _____

☐ Check/Money Order ☐ Visa/MasterCard

Card Number _____

Card Expiration _____ Signature _____

Please fill in the name(s) and date(s) of the class(es) that you wish to attend.

Class #1 _____

Class #2 _____

Class #3 _____

Class #4 _____

Class #5 _____

Class #6 _____

Mail registration and payment to the above address.

This is an introductory class and is intended for new users to the program. If you do not have a camera yet, come anyway and learn the basics on some stock footage. Three hours.

**Prerequisite:** 5 Part New User Set or Brush Up Your Mac Skills

**Number of Sessions:** One

**Price:** Standard Members: $50.00, Associate Members: $75.00, Non-Members: $75.00.

**Instructor:** Pat Fauquet

6/28/01 - 1 pm - 4 pm

**I've made an iMovie—Now What?**

Bring your digital camera with a video you have begun to edit. Learn more about transitions, titling, adding audio tracks and saving your masterpieces. Learn what codecs to use, how to save to QuickTime formats for the web and how to burn your masterpieces to CD.

**Prerequisite:** 5 Part New User Set or Brush Up Your Mac Skills

**Number of Sessions:** Two

**Price:** Standard Members: $100.00, Associate Members: $150.00, Non-Members: $150.00.

**Instructor:** Pat Fauquet

Call Office to get on list

**Microsoft Word for Office 2001**

This class will introduce the student to the fundamentals of the Microsoft Word software package. The course is designed for those with very limited or no previous knowledge of Word. Topics that will be covered include: reviewing the screen elements of a basic new Word document (the standard and formatting toolbars and the menu bar); setting default options such as spell checking and document editing choices, paragraph formatting (fonts, type styles, etc); creating, editing, saving and deleting a simple Word document; using the on line help function; simple formatting using tabs and setting margins; creating a simple table; and reviewing pre-defined templates such as the letter template that are included in Word.

The classroom emphasis will be on Word 2001. Differences between Word 2001 and Word 98 may be discussed if students' needs warrant.

**Prerequisite:** 5 Part New User Set or Brush Up Your Mac Skills

**Number of Sessions:** 1

**Price:** Standard Members: $100.00, Associate Members: $150.00, Non-Members: $150.00.

**Instructor:** John Barnes

Call Office to get on list

**Excel for Microsoft Office 2001**

Looking for Instructors

## Higher level Classes

**Coming soon-- Adobe LiveMotion also DreamWeaver.**

**Adobe GoLive 1: Introduction**

This class will cover the first three lessons in the Adobe GoLive Classroom in a Book. Students will learn to start a page, add and format text and pictures, use tables, and link pages together. They will learn about dynamic components, templates, and image maps. They will also learn elementary site management.

**Prerequisite:** Web Pages-The How To Dos OR Making Web Pages with Adobe PageMill or Claris HomePage OR the permission of the instructor.

**Number of Sessions:** Two.

**Price:** Standard Members: $150.00, Associate Members: $250.00, Non-Members: $250.00

**Book Price:** $10.00 to be paid with class registration.

**Instructor:** Pat Fauquet

5/18/01 - 9:330 am - 4 pm

**Adobe GoLive 2:, Frames, Animation and Site Management**

This class will cover lessons four, five and eight in the Adobe GoLive Classroom in a Book. Students will learn how to build a web page using frames. They will learn how to use rollovers and floating boxes to add interest to their web pages. They will also learn how to use the site management tools in Adobe GoLive to convert old site and update sites easily.

**Prerequisite:** Adobe GoLive 1: An Introduction OR the permission of the instructor.

**Number of Sessions:** Two.

**Price:** Standard Members: $150.00, Associate Members: $250.00, Non-Members: $250.00

**Book Price:** same book as for Adobe Go Live 1.

**Instructor:** Pat Fauquet

5/29/01 - 9:30 am - 4 pm

**Adobe GoLive 3: Editing QuickTime Content**

Adobe GoLive has a great QuickTime editor built into the program. This class will cover its use in making and editing QuickTime movies. Instruction will also be given for how to add QuickTime VR scenes, panoramas, and objects to web pages

**Prerequisite:** Adobe GoLive 1: Introduction OR the permission of the instructor.

**Number of Sessions:** Two.

**Price:** Standard Members: $150.00, Associate Members: $250.00, Non-Members: $250.00

**Book Price:** same book as for Adobe Go Live 1.

**Instructor:** Pat Fauquet

5/31/01 - 9:30 am - 4 pm

**QuickTime VR—Making a Panorama**

They're showing up everywhere—tours of homes, museums, businesses and scenic spots. Learn how to shoot a panorama, how to stitch one together, and what software and equipment is needed. This class will include the use of freeware shareware and commercial software. Students will use a range of digital cameras to produce several panoramas that will be stitched into tour with nodes linking the panoramas. Pan heads and leveling devices will be used and discussed. Adding panoramas to web pages will complete the day.

**Prerequisite:** 5 Part New User Set or Brush Up Your Mac Skills along with Web Pages-The How To Dos or the permission of the instructor.

**Number of Sessions:** Two.

**Price:** Standard Members: $150.00, Associate Members: $250.00, Non-Members: $250.00

**Instructor:** Pat Fauquet

Call Office to get on list

**QuickTime VR—Making a Virtual Object**

Imagine being able to manipulate a picture of a three dimensional object! Rotate it, turn it, bring it closer. Learn to produce object movies that can be placed on web pages. This class will include the use of freeware shareware and commercial software. Students will use a range of digital cameras to produce several VR objects. Adding these object movies to a web page will complete the class. This is a three hour class. -suggest it is offered at higher price level.

**Prerequisite:** 5 Part New User Set or Brush Up Your Mac Skills along with Web Pages-The How To Dos or the permission of the instructor.

**Number of Sessions:** Two.

**Price:** Standard Members: $150.00, Associate Members: $250.00, Non-Members: $250.00

**Instructor:** Pat Fauquet

Call Office to get on list

**Beginner Final Cut Pro**

This three hour beginning Final Cut Pro class is the jump off point for people who would like to start using this powerful program for making videos. Topics to be covered are listed below.

**Hardware and Software Setup:** System/Memory settings; Camera/Deck/Monitor connections; Scratch Disk setup; Final Cut Pro preferences.

**Final Cut Pro — The Interface:** Browser; Viewer; Timeline; Toolbar.

**Logging and Capturing:** Setting the log bin; Transport controls; Ins and outs of timecode; Selected capture; Handles.

**Editing:** Trimming clips; Keyboard shortcuts; Transitions; Dynamic previewing and rendering.

**Titles:** Title and action safe areas; Drop shadows.

**Filters and Effects:** Applying.

**Audio:** Importing from audio CD.

**Final Output:** Print to Video vs. recording from Timeline; Exporting QuickTime file.

**Special Instructions:** Students should bring their Digital Video Camera, cables and software with them to class.

**Prerequisite:** 5 Part New User Set or Brush Up Your Mac Skills.

**Number of Sessions:** One.

**Price:** Standard Members: $75.00, Associate Members: $125.00, Non-Members: $125.00

**Instructor:** Barrett Thomson

Call Office to get on list

**Adobe Photoshop Part 1**

Learn the basic fundamentals of Adobe Photoshop, the most widely used graphics program. Learn the proper way to configure the Photoshop preferences and how to use the tool, info, channel and color palettes. Also learn how to use each of Photoshop's tools, create new documents, define colors and manipulate text and images. Also covered will be the proper format to save your image in, and what compression will or won't do to your image.

**Prerequisite:** 5 Part New User Set or Brush Up Your Mac Skills.

**Number of Sessions:** One

**Price:** Standard Members: $75.00, Associate Members: $125.00, Non-Members: $125.00

**Book Price:** $10.00 to be paid with class registration.

**Instructor:** Paul Schlosser

Call Office to get on list

**Adobe PhotoShop Part 2**

Learn how to isolate different parts of an image or layers. Edit layers as discrete artwork with unlimited flexibility in composing and revising an image. Create more complex effects in your artwork using layer masks, clipping groups, and adjustment layers. This class includes both layer basics covered in the Photoshop tutorial and advanced layer techniques covered in the Classroom in a Book, Lesson 8.

**Prerequisite:** 5 Part New User Set or Brush Up Your Mac Skills along with Adobe PhotoShop Part 1 or a knowledge of the topics covered in that class

**Number of Sessions:** One

**Price:** Standard Members: $75.00, Associate Members: $125.00, Non-Members: $125.00

**Book Price:** $10.00 to be paid with class registration.

**Instructor:** Blake Lange

Call Office to get on list

**Adobe InDesign 1**

Work through a demonstration of Adobe InDesign providing an overview of the key features. Get to know the navigation features for using the drawing, layout, and editing capabilities. Learn the work area including the document window, the pasteboard, the toolbox, and the floating palettes. This class covers "A Quick Tour of Adobe InDesign" (the same as Chapter 1 in the User Guide) and "Lesson 1: Getting to Know the Work Area" from the Adobe Classroom in a Book.

**Prerequisite:** 5 Part New User Set or Brush Up Your Mac Skills.

**Number of Sessions:** One

**Price:** Standard Members: $75.00, Associate Members: $125.00, Non-Members: $125.00

**Book Price:** $10.00 to be paid with class registration.

**Instructor:** Blake Lange

Call Office to get on list

**Adobe InDesign 2**

Learn to use the tools for setting up pages to ensure a consistent page layout and to simplify your work. Learn how to set up master pages and use columns and guides. Work with frames to hold either text or graphics. Learn how InDesign gives you flexibility and control over your design. This class covers "Lesson 2: Setting Up Your Document" and "Lesson 3: Working with Frames" from the Adobe Classroom in a Book.

**Prerequisite:** 5 Part New User Set or Brush Up Your Mac Skills along with Adobe InDesign 1 or a knowledge of the topics covered in that class.

**Number of Sessions:** One

**Price:** Standard Members: $75.00, Associate Members: $125.00, Non-Members: $125.00

**Book Price:** Same book as used with Adobe InDesign 1.

**Instructor:** Blake Lange

Call Office to get on list

**Adobe Illustrator: Mastering the Bezier Curve**

Illustrator has become so feature laden that current tutorials are just overviews of the product; they do not present the fundamental workings of the program in depth. The Bezier curve, otherwise known as a vector graphic, is the primary building block of Illustrator (and many other drawing programs). Mastering its use will fundamentally change your view of the power of the program. The way the Bezier curve works, however, may seem alien at first with its points and vectors, an approach to illustrating many find counter-intuitive. This class will start with creating and editing the simplest lines and curves and build up to the creation of complex illustrations. By the end of the class you should feel comfortable editing any illustration based on the Bezier curve, for example, all clip art that has the eps extension in its file name. This class serves as both a good introduction to the program and as a help for the more advanced user to become adept in its use.

**Prerequisite:** 5 Part New User Set or Brush Up Your Mac Skills.

**Number of Sessions:** One

**Price:** Standard Members: $75.00, Associate Members: $125.00, Non-Members: $125.00

**Book Price:** $10.00 to be paid with class registration.

**Instructor:** Blake Lange

Call Office to get on list

**Introduction to Quark XPress**

Learn the basic fundamentals of Quark Xpress, the most widely used page layout program. Learn the proper way to configure the Xpress preferences and how to use the tool, measurement, color and documents palettes. You'll learn how to properly create new documents, define four-color process and spot colors, create master pages and manipulate text and graphic objects. Learn how to correctly use Xpress font and picture usage windows and how to configure the document for the laser printer or high-resolution imagesetter.

**Prerequisite:** 5 Part New User Set or Brush Up Your Mac Skills.

**Number of Sessions:** One

**Price:** Standard Members: $75.00, Associate Members: $125.00, Non-Members: $125.00

**Instructor:** Paul Schlosser

Call Office to get on list

**Quark Xpress Clinic**

This class is for those who have some experience with Quark Xpress and are interested in asking questions and having specific problems discussed. The class will be a question and answer format and you should bring along on floppy a sample of things for which you would like help.

**Prerequisite:** Introduction to Quark XPress or a good working knowledge of QuarkXpress and its interface.

**Number of Sessions:** One

**Price:** Standard Members: $75.00, Associate Members: $125.00, Non-Members: $125.00

**Instructor:** Paul Schlosser

Call Office to get on list

**Introduction to PageMaker**

Using the basic commands, tolls, and palettes, you will import, format, and position text and graphic elements needed to assemble a single-page, black and white flyer. This project will cover the following topics: Restoring default PageMaker settings. Changing the view of a publication. Creating a new publication. Opening an existing publication. Setting up the horizontal and vertical rulers. Displaying and hiding guides. Positioning the zero point. Using the pointer tool, the text tool, and the zoom tool. Specifying multiple columns. Locking the guides. Creating, placing formatting, and positioning text and graphic elements. Creating a drop cap. Applying a tint to text. Specifying a hanging indent. Creating ruler guides. Drawing circles, rectangles, and lines. Adjusting the stacking order of elements on the page. Range kerning text. Using the Snap to Guides option.

**Prerequisite:** 5 Part New User Set or Brush Up Your Mac Skills.

**Number of Sessions:** One

**Price:** Standard Members: $75.00, Associate Members: $125.00, Non-Members: $125.00

**Book Price:** $10.00 to be paid with class registration.

**Instructor:** Blake Lange

Call Office to get on list

**PageMaker Clinic**

This class is for those who have some experience with PageMaker and are interested in asking questions and having specific problems discussed. The class will be a questions and answer format and you should bring along on floppy a sample of things for which you would like help.

**Prerequisite:** 5 Part New User Set or Brush Up Your Mac Skills along with Introduction to PageMaker or a good knowledge of the basics of PageMaker and its interface.

**Number of Sessions:** One

**Price:** Standard Members: $75.00, Associate Members: $125.00, Non-Members: $125.00

**Book Price:** Same book as used with Introduction to PageMaker.

**Instructor:** Blake Lange

Call Office to get on list

## Youth Summer Camp

**Youth Camp Week I - Its All in the Graphics!**

Each morning will begin with a review of beginning and intermediate level Macintosh skills. Campers will review how computers work and apply that knowledge to day to day Mac operation. They will also review the Finder, Control Panels and skills such as drag and drop, cut, paste, and copy. These skills will then be applied in making audio and graphic content that could be included in Web pages.

Students will use a variety of low cost software, shareware, and freeware such as AppleWorks, GraphicConverter, QuickTime Pro, iTunes, Adobe Photoshop Elements, GifBuilder and iTools HomePage to produce simple web pages using these elements. They will also produce slide shows and video tapes with them. Students continuing in camp will uses these elements and the knowledge gained for future projects.

**When:** Week of July 23 through July 27th

Camp is from 9:00 am till 5:00 pm (Monday -Friday)

Lunch each day will be from Noon till 12:45 pm. Students are responsible for bringing their own lunch or bringing money to purchase lunch from a delivery restaurant.

**Who:** Students must be age 14 and above for the Youth Camp. If your camper is younger than 14 you must contact Pat Fauquet <patf@mac.com> to get a waiver.

**Instructor:** Pat Fauquet

**Class Size** Class size is limited to ten (10) participants in each session

**Price** $300.00

**Youth Camp Week II—Digitize and Conquer!**

Each morning will begin with a review of intermediate Macintosh skills. Campers will learn how to troubleshoot computer problems such as freezes, low memory, and opening from and saving files for Windows machines. They will learn how to use utility programs such as Norton Utilities, TechTool Pro and DiskWarrior to repair and optimize hard drives and directories.

Students will use a variety of digital cameras, digital video cameras, CD burners, tripods, pan heads, lenses, and accessories to produce digital video content such as iMovies, QuickTime video, QuickTime Virtual Reality Objects panoramas. They will learn how to prepare this content for video tape, CD and Web delivery. Software to be used will include iMovie 2, Adobe LiveMotion, Adobe Photoshop, Adobe Photoshop Elements, Adobe Illustrator, Apple QTVR Authoring Studio, and VR ToolWorx in addition to shareware and freeware applications.

**When:** Week of July 30 through August 3rd

Camp is from 9:00 am till 5:00 pm (Monday -Friday)

Lunch each day will be from Noon till 12:45 pm. Students are responsible for bringing their own lunch or bringing money to purchase lunch from a delivery restaurant.

**Who;** Students must be age 14 and above for the Youth Camp. If your camper is younger than 14 you must contact Pat Fauquet <patf@mac.com> to get a waiver.

**Instructor:** Pat Fauquet

**Class Size:** Class size is limited to ten (10) participants in each session

**Price** $300.00

**Youth Camp Week III—For All the World to See!**

This week camp will begin with advanced Macintosh skills. Campers will learn how to troubleshoot extension conflicts, do customized software installations, do a clean install of the system folder and troubleshoot system crashes.

Building and maintaining web sites will be the main topic. Campers will use Adobe GoLive and Adobe LiveMotion to create a web site that will be added to the World Wide Web. Those who have attended the previous weeks will use the materials and knowledge gained to build their pages. Campers who attend this week only will use graphics and sound files that can be downloaded. Web pages will include graphics, animations, sound files, QuickTime media, and Javascripts. Software packages used in earlier weeks will also be used this week.

**When:** Week of August 6 through August 10th
Camp is from 9:00 am till 5:00 pm (Monday -Friday)
Lunch each day will be from Noon till 12:45 pm. Students are responsible for bringing their own lunch or bringing money to purchase lunch from a delivery restaurant.

**Who:** Students must be age 14 and above for the Youth Camp. If your camper is younger than 14 you must contact Pat Fauquet <patf@mac.com> to get a waiver.

**Instructor:** Pat Fauquet

**Class Size** Class size is limited to ten (10) participants in each session

**Price** $300.00

**Teacher/Parent Camp**

Join Grace Gallagher and Pat Fauquet for a week of ideas and techniques for integrating your computer and the Internet into today's curriculum. Brush up your general computer skills and learn about OS X. Learn techniques for integrating word processing, spreadsheets, databases and presentations software into the classroom. Receive the latest lesson templates and review great unit studies and lesson plans. Learn new techniques for building easy classroom web pages and review effective email communication techniques. Learn to create QuickTime and iMovie media in the instructional setting. Campers will use CD recording techniques to take their new materials back to class in the fall.

**When:** Week of August 13 through August 17 OR Week of August 20 through August 24

Camp is from 9:00 am till 5:00 pm (Monday -Friday)
Lunch each day will be from Noon till 12:45 pm. Students are responsible for bringing their own lunch or bringing money to purchase lunch from a delivery restaurant.

**Who:** Teachers and Parents.

**Instructor: Pat Fauquet** and **Grace Gallager**

**Class Size:** Class size is limited to ten (10) participants in each session

## Other Educational Opportunitites

**Apple Computer Inc.,** Reston, VA
703-264-1000 or www.seminars.apple.com

**EEI—Training** 703-683-7453
www.eeicommunications.com

**MacAcademy** 800-527-1914
www.macacademy.com

**Mac Business Solutions** 301-330-4074 or
www.mbsdirect.com

**Micro Center** 703-204-8400
or www.microcentereducation.com

**Piwowar & Associates** 202-223-6813 or
www.tjpa.com

**Price** $300.00 per week

**Senior Camp**

We're not letting teens and teachers have all the fun! Come and learn how to use your computer and printer with your favorite hobby or interest. Make stationary, templates, databases, web pages, movies, slideshows and music CDs. Learn new ways to make your computer fun and easy to use and take a tour of OS X.

**When:** Week of August 27 through August 31 - 9 am till 12 pm each day

**Who:** Seniors

**Instructor: Pat Fauquet**

**Class Size:** Class size is limited to ten (10) participants in each session

**Price:** $150.00 per week ■

# Don't Discard That Rotten Apple — Make It an Internet Server, Part III

© 2001 Richard S. Sternberg.

IT'S BEEN over a year since I set up my web server and email server hosting multiple IP Addresses for multiple domains and all their subdomains —plus innumerable free email addresses. All of this has been running on an ancient Ethernet-equipped Mac Centris 610, and it's been running reliably. The first two articles have been re-published at least twice on the Internet, and the series remains hosted on my own server. Today, we will finish empowering individual and small business users by freeing ourselves entirely from professional Internet service providers and learning to host our own domains.

In the last article, I complained that I had no solution for how to run free domain name hosting using only my ancient Apple. Even though I can control my own publicly recognizable services, like email and web pages, I was still paying $50 per year per domain for the fairly limited service of incorrectly inputting corrections to my name service. I even thought I'd wasted my time creating local email and web servers, because many of the discount web hosting services, like http://www.cedant.com/, won't sell domain name hosting separately.

It's taken a year, and we will need to make a few compromises, but I now buy cheaper and faster fiber-optic T1 access to the Internet as I watch the market change.

Internet Service Providers (ISPs) are dividing into two groups: **access providers**, who sell broadband lines for discount prices, and **domain hosting services**, who provide equipment to host web and email services. The prices for these hosting services seems to be rising as they set up virtual offices in bullet-proof buildings near the Internet hubs. It is a basic tenet of these articles

## Sorry, The Prerequisites

You may not understand this article unless you recall the others. In the first, Don't Discard That Rotten Apple — Make It an Internet Server, Part I, (Washington Apple Pi Journal, May/June 2000, pp. 25-30), or http://www.wap.org/journal/internetservers/internetservers1.html, we set up an old Ethernet-equipped Mac Centris 610 to run System 8.1 and we tapped the Mac OS native ability to serve as host to multiple Internet Protocol (IP) Addresses. In the second article, Don't Discard That Rotten Apple — Make It an Internet Server, Part II, (Apple Pi Journal, July/August 2000, pp. 67-70), or http://www.wap.org/journal/internetservers/internetservers2.html, we set up a freeware email server and a shareware or cheapware web server for multiple web sites and many, many email accounts on the same due-to-be-retired Centris. You should review those articles before continuing here. You're also welcome to meet me in cyberspace on the server I set up, where I've published the articles with live html links at http://RSSternberg.org/Multihost.html Reprint information is available at http://www.wap.org/journal/reprint.html, or by writing to the Pi offices.

that such a high level of access and security is overpriced and irrelevant for many, many businesses and nearly all individuals.

There is good news for individuals seeking to create family domains, non-profits and small businesses who want to create less complex sites and host email across broadband. The price of DSL, T1, and other broadband technologies is dropping, particularly when bought in business areas where competition exists and where it isn't coupled with the more personnel-intensive hosting services. Because I fully host my own servers, I get access for my low volume servers cheaply, while my ISP saves money on the business-to-consumer interface.

To finish the job of hosting and become your own "responsible party" with your registrar, we must take the last step and provide domain name services.

*Fig. 1: A registrar's Whois record, showing the author as responsible party.*

### Inadequate Mac solutions

My first objective was to run all of my Internet services from one discarded Mac Centris 610. This was overly ambitious. It would seem that domain name servers (DNS) have an easier job than web or email servers. After all, what domain name service (also, DNS) does is translate human language-based domain names, like SternbergLaw.Net, to and from machine language-based IP Addresses. The task becomes more complex at the bit level, particularly with the heavy loads and quantity of bad packets that DNSs often experience.

There were, at one time, two freeware, Mac DNS packages. Apple provides, without warranty, MacDNS 1.0.4, and QuickDNSLite was published by Men & Mice. According to informal polling of Washington Apple Pi volunteers who have tried desperately to make it work, MacDNS 1.0.4 is flaky and will not reliably serve zones either when sharing services with other Internet servers on the same machine or when placed alone on a machine and placed under load. QuickDNSLite is a sadder story: it apparently works fine for low load settings, but it was pulled from the market over a year and a half ago. My diligent efforts to obtain it failed.

Men & Mice produces a relatively low priced version called QuickDNS Pro, but it is sold for $349, which is significantly out of range for a freeware project. http://www.menandmice.com/infobase/mennmys/vefsidur.nsf/index/2.2.

### Don't "Think Different" — BIND it

Another choice is to keep your domain name service local using BIND. Most Macs can run Unix. Experts on the Pi Telecommunications System (TCS) compiled this list of various free sources of Unix on Macs:

http://www.netbsd.org/Ports/mac68k/
http://www.netbsd.org/Ports/macppc/
http://darwin.org/projects/darwin/
http://www.openbsd.org/mac68k.html
http://www.openbsd.org/powerpc.html

There are also fully-supported commercial products for running Unix within the Mac OS:

http://www.tenon.com/products/machten/

which features BIND;

http://www.tenon.com/products/webten/
http://www.tenon.com/products/netten/
http://www.tenon.com/products/itools/

For other information on Linux on the Mac, you can try:

http://www.linux-m68k.org/
http://mklinux.org/,
http://www.suse.com/us/products/susesoft/ppc/
http://www.yellowdoglinux.com/ (which could not be reached on the web when I searched), and
http://www.linuxppc.com/

I nevertheless doubt the sanity of doing this on an older, slower Mac. It still strikes me as silly to tear the Mac interface off a Mac and hobble it with another operating system (OS) so that you can run a non-native application, like BIND, on it. I suspect that the multiple levels of programming will probably reveal an undocumented bug or two, and you will have

crawled into an area of niche programming where nobody will be able to help. I don't think this is a project for lay people.

Of course, a less complex choice is to run Linux on a recycled Wintel box, since old Windoz/Intel based computers can be purchased – or found in a dump – even cheaper than old Macs. That experience is beyond the scope of this article, since I am consistently baffled by Linux, having never put in the time to learn the basic structure of the OS. I can only say, based on my "travels" in researching this article, that the correct software within UNIX/Linux is BIND and that BIND is the most common DNS running worldwide. You'll find many, many people qualified to help with setting up BIND in the USENET newsgroups.

One problem you may face in setting up a local DNS on any platform is Internet access. Almost by definition, your user set-up is located many stops away from the backbone of the Internet. This is of little concern for serving up the relatively simple web pages that the far majority of businesses and individuals need, and is utterly irrelevant to email service, which does its communicating outside the user's perception. This may be a problem for DNS, in which small packets are sent back and forth across inconceivably great expanses of wire and fiber repeatedly within milliseconds. A location near the hub for this essential but brief communication may massively increase reliability. Further, when you're distant from the backbone or have only one route to it, anyone upstream from you can shut you down. While this is also true of your web server, a web server error appears differently to users than a DNS error. Users who fail to get your web page will either get a cached copy of your pages, if they visit regularly, or will get a busy error. Absence of a DNS directory entry will tell visitors that your domain doesn't exist.

But, there are distinct advantages to having a local DNS serving as the primary source of your DNS, particularly if you don't publish the availability of that DNS server to the world by listing it in the Top Level Domain (TLD) servers of your registrar. Unless the address of your local DNS is listed with the InterNIC, resolvers seeking your Internet services will not look to your DNS. Your local DNS will never be bombarded with the po-

**Sidebar: ZoneEdit on the Move**

Zone Edit is an exciting commercial start-up providing DNS services. Formed in 2000, they've been active in making domain name service a popular commodity for webmasters and hobbyists. The services they offer seem to be expanding rapidly, and their CEO, Michael Krebs, seems to have set an informal objective of rolling out a new service each week. While such aspirations are unlikely to be maintained for long, I exchanged emails with Mr. Krebs late into the night as his team stayed to meet its objectives. Some of my favorites include:

**Secondary service:** Zone Edit intends to roll out secondary zone service, like Granite Canyon, so that subscribers can create their own unpublished primary servers or place their primary servers elsewhere and use Zone Edit as an additional set of secondary servers.

**Backup email servers:** While it is not clear whether this service will be offered free, like their DNS service, to personal subscribers, Zone Edit is planning a secondary email hosting service. If you follow the model I explained in these articles to host your own email service, you will not have the same backup protection provided by commercial providers. If your email server is out of service for more than a few hours, some of your email correspondents will get messages that their email hasn't been delivered. In another day or two, their email will be returned. This disadvantage will be eliminated if you have a backup email server listed in your DNS resource records. Zone Edit plans to provide such backup service, making your small Internet server look even more professional.

**Dynamic IP Support:** This is my personal favorite, and I'm told it already works. Using shareware named Dynamic DNS Client 2.0b.1, found at http://www.sentman.com/dyndns/, your Mac can inform Zone Edit through its web page when your IP address changes. The details are in FAQ #17 at http://www.zoneedit.com/doc/dynamic.html, but the bottom line is that DSL service with a dynamic IP address no longer precludes you from setting up your own Internet servers. A dial-up 28,800 connection will still be inadequate for a web server (and is not permitted as part of your Washington Apple Pi Explorer service). But, this may mean that the DSL customers who gave up on the project because they had dynamic IP addresses are now welcome to try.

tentially heavy traffic of repeated ping, traceroute, and nslookup commands from the public. It is that traffic that makes MacDNS 1.0.4 unstable. If you set up all of your other DNSs as secondary, obtaining their source information from your local DNS, then you can control your DNS changes locally and propagate them to the secondary servers you have selected.

Finding a suitable, local answer for any more than a local unpublished primary host is not going to be easy. Fortunately, the compromise I made was that I found access to free or cheap DNS services that eliminate the need for local name servers.

### Free sources on the Internet

Unfortunately, I have not tried setting up a local primary host. My primary DNS is at http://ZoneEdit.com/, which provides free domain hosting for as many as five domains and very reasonable rates thereafter. But, when I set up my zones for this article, they didn't provide for secondary service unless they controlled the primary. (See Sidebar: ZoneEdit on the Move). I have secondary hosting service at the first free Public DNS in the world, at http://www.GraniteCanyon.com/, and their system allows you to choose them as primary or secondary and to write your zones freely, but they are extremely unreliable in spite of the non-dynamic and inaccurate statistics they post on their web site. It is unsafe to entrust any more than backup service to them. I escaped to ZoneEdit after struggling with a persistent crash and lack of communication from Granite Canyon for weeks, during which I watched them crash almost all of their 61,000 hosted sites. Free ... and worth every penny of it.

There are a number of other sources of DNS hosting on the Internet, even if local access providers and web hosting companies are disinterested. A comparative review of such providers can be found at http://www.dnsproviders.com/.

### Basic DNS writing: It isn't rocket science - but it looks like it is

It is much easier to write a DNS zone than to explain the details of DNS protocols. A problem many novices experience is that the experts who understand DNS try to answer the questions of novices by imitating the sage words of Albitz and Liu in their classic tome, DNS and BIND, 3rd Edition, (O'Reilly, September 1998), 499 pages, $37.95. A nice bibliography with hyperlinks is provided by Granite Canyon in their answer to FAQ #11. http://soa.granitecanyon.com/faq.shtml#other-dns-resources.

```
$ORIGIN sternberglaw.net.
sternberglaw.net.   IN SOA   ns3.zoneedit.com. dnsadmin.zoneedit.com
                14400   ; refresh
                7200    ; retry
                864000  ; expiry
                3600 )  ; minimum
sternberglaw.net.   IN NS    ns3.zoneedit.com.
sternberglaw.net.   IN NS    ns5.zoneedit.com.
sternberglaw.net.   IN NS    ns1.granitecanyon.com.
sternberglaw.net.   IN NS    ns2.granitecanyon.com.
sternberglaw.net.   IN RP r.sternberg.wap.org. richard.sternberglaw.net.
richard.sternberglaw.net. IN  TXT "Richard S. Sternberg, NIC handle: RSA219"
localhost.sternberglaw.net.  IN  A  127.0.0.1
sternberglaw.net.   IN A   216.50.13.165
smtp.sternberglaw.net.   IN CNAME   sternberglaw.net.
pop3.sternberglaw.net.   IN CNAME   sternberglaw.net.
www.sternberglaw.net.    IN CNAME   sternberglaw.net.
; global MX records for unspecified subdomains in the zone
*.sternberglaw.net.  IN  MX  0  sternberglaw.net. ; GLOBALOK
; MX records for email addressed to the zone itself
sternberglaw.net.      IN  MX  0  sternberglaw.net.
```

*Fig 2: Sample Resource Records for domain sternberglaw.net.*

Other providers make this even easier by providing a web-based script to write your zones for you. I managed to set up my first zone at ZoneEdit.com within five minutes of surfing over to their site. It's that easy.

Writing a basic zone of resources records (RRs) for an average domain is not as exacting as understanding DNS protocols. Basically, copying an example provided by Granite Canyon will teach more than a lengthy essay on writing DNS zones. For a good example of a primary zone, go to http://soa.granitecanyon.com/pexample.html. For an embarrassingly easy example of a secondary zone, try http://soa.granitecanyon.com/sexample.html.

**Sidebar: Primary, Secondary ... Bicentennial!**

Many get caught trying to fathom the inner meaning of primary and secondary DNS service. Don't let 'em fool you – it's easy. First, stop calling them primary and secondary and start calling them master and duplicate or master and slave. The master is the machine that contains the zone record which you want each of the slave servers and the whole world to copy. Though some people create dual masters to increase reliability, you usually wouldn't want more than one master — unless you've mastered DNS. If the records in the dual masters wind up different, your slave servers will be following potentially inconsistent masters at different times. On the other hand, the only practical limitation on the number of slave/copied hosts is the number that your registrar will let you list with their Top Level Domain (TLD) registry. Network Solutions seems to allow one primary/master and five secondary/slave servers, but I could not make more that five DNSs show up at the resolver (the computers seeking to find the zones).

When resolvers decide that they don't know your address, they ask the TLD. It offers any one of its known DNSs without regard to which is primary. The resolver takes its solution from there, so long as that server is available. If one or more of the servers crashes, it is better to have the redundancy of multiple "secondaries." The crash will still slow some resolvers, but your sites won't disappear.

An unpublished primary/master is a combination of these concepts. The TLD doesn't know the unpublished primary exists, so no resolvers come to it for DNS solutions. The TLD believes that one of the servers is a master, but it treats masters and slaves as equally authoritative sources of your zone information. The slave servers, however, know that they must get their zone information from the unpublished master, so they are set up with none of the information discussed below and merely know the address of the master. The end result is that the user can control the zones freely from a distant side branch from the Internet backbone, but not be subjected to inquiries, bad packets, and even attacks from the world of resolvers.

Got it?

The first line in our sample primary DNS zone is the $ORIGIN line. Neither ZoneEdit nor Granite Canyon allows you to write this line yourself, so it is difficult to get it wrong. If you are creating a BIND name server on your own host, you need some command to distinguish between the different zones to be hosted. The $ORIGIN command defines the current zone. In BIND compliant DNSs, you may substitute the "@" symbol for the defined origin name, and the origin name will be automatically appended to any name that doesn't end with a period.

The SOA, or Start of Authority, resource record is considered by many to be the most complex, but most of its complexity can be avoided by skillfully stealing someone else's definition of good variables to insert. The record begins by naming the zone to which it applies, sternberglaw.net, concluded with a period, which I could have represented with an "@". The SOA record continues to name the host machine in which the primary records are said to be found, in this case, ns3.zoneedit.com — ended with a period to avoid being interpreted as ns3.zoneedit.com.sternberglaw.net. This line appears to, but doesn't actually, end with the email address of the person responsible for that name server, with the name written in peculiar, DNS form – the "@" is replaced by a period. (Because this form of expressing an email address can get confused for the address of a subdomain or host, it is sometimes necessary to fool a line editor, like nslint, into accepting the extra period; this is accomplished by using a backslash (\) as an escape character, making my WAP email address r\.sternberg.wap.org).

The variables that appear afterwards are confusing. They are expressed in seconds and may be noted in alphanumeric characters. In Figure 2, the variables are explained by comments placed after the semicolon symbol, but four numbers placed after the email address on an SOA record will be interpreted by the computer just as well without the comments. I asked Michael Krebs, CEO of ZoneEdit.com, to clarify the meaning of the variables:

> "... the 'refresh' parameter on the SOA ... controls how often a slave will 'take the initiative' and attempt to perform a zone transfer. The 'retry' parameter controls how often a zone transfer will reoccur if a zone transfer fails. The 'expire' parameter controls when the slave will throw the zone away if it was unable to perform a zone transfer, even after all the retries. The 'TTL' [or 'minimum']... is now more often used as

the default length of time that recursive DNS lookups are cached on the querying DNS server."

When you print out your zone, depending on the software and options you use for this, you may get an additional number before all of the other numeric variables. That number is called the serial number, and it tells querying secondary hosts whether they already have the latest DNS zone information. Your DNS provider, if it's ZoneEdit or Granite Canyon, issues you a new serial number each time a change is made to the zone, and other computers seeking to conform their data can begin by checking the serial number before requesting a zone transfer.

The bottom line is that Granite Canyon doesn't let you set the SOA variables. ZoneEdit sets them for you and lets you change them at your peril. Even if you write your own SOA resource record, you can copy different values from many sources, including the example given above.

After the SOA record, you need to name each of your name servers using an NS record that starts with the name of the zone affected, states that it is an Internet record, abbreviated IN, and then gives the name of the host machine where records about this zone can be found. Without this, the server you name as primary will not be able to notify its secondary servers when changes are made to the zone, and resolving DNSs across the world will not know where they can find information to refresh their records. It makes no difference in what order the NS records appear.

In a Granite Canyon zone, you must then proceed to create a responsible party (RP) record and a supplementary text (TXT) record. These records are generally considered optional by DNSs. Granite Canyon requires them to make users responsible for their zones. Users must provide an email address inside and outside the zone, in DNS form, in the RP record, and provide identifying information, such as your name and your NIC handle, in a TXT resource record. ZoneEdit does not support these records, and such records seem a bit redundant and rather easy to spoof.

The localhost record appears next in a Granite Canyon script, but is not required in a ZoneEdit script. All DNS resolvers set up correctly provide this. The need for this is more complex than a simple "how to" description. Just copy the record from my sample if you use Granite Canyon. Consult Albitz and Liu if your curiosity requires more.

We now begin the meat of the DNS record. The IP address of the host machine providing your Internet services is specified in an A record in the form shown in Figure 2. Note that IP addresses do not end in a period. There is some divergence in the field. Granite Canyon's documentation explicitly prohibits aiming more than one subdomain in a zone at the same IP address, declaring that CNAME commands, described below, are used for that purpose. ZoneEdit aims the www host and the domain itself at the same IP address using A records, and, by clicking on the IP Addresses button, allows you to point each of your subdomains to your IP Addresses using an A record. It also allows the older method of using CNAME records to direct subdomains. Due to changes in the way BIND handles CNAME records, some experts believe that CNAME records are an historical relic, and that each domain and subdomain should have A records rather than CNAME records. In a final twist, some growing number of providers allow load sharing, in which calls for Internet services are divided between multiple, identical web or email servers, by aiming one domain at two inconsistent IP addresses. The easiest answer is to understand the terminology and copy the form and rules of the DNS hosting service you select. The example given in Figure 2 is intentionally less complex and is likely to be acceptable with any provider.

Those names that cannot be directed with A records should generally use CNAME records. CNAME is short for Canonical Name, which loosely, and somewhat inaccurately, is a way of declaring an alias. In complex, ISP zones, a domain name might be divided into hundred or thousands of subdomains. For individuals and small businesses, such complexity is cumbersome and unnecessary. Nevertheless, it is here that you can correct the most common error ISPs make in setting up zones: you can set www, smtp, and pop3 to all be aliases of the domain name itself since they are all hosted on one machine. Users can then freely forget to put www in front of your web address and you can freely forget to set up your TCP/IP host names to remember the difference between pop and smtp protocols.

Those who read the example carefully will notice that I've also defined all subdomains of the zone to be the same domain name. This prevents future errors, may slightly decrease the possibility that someone can hijack one of your subdomains without your knowledge, and is accomplished by no more than using an asterisk as a wildcard for all other subdomains. While the wildcard covers the www, smtp, and pop3 CNAME records, the

individually named records will be given priority, and taking the time to define them at the outset might help you remember how to expand when you do need to move your smtp and pop3 services to another host. Note that Granite Canyon' line editor, nslint, does not recognize asterisks, so, when using their service, it is necessary to put the escape code GLOBLOK in a comment field on the line where the asterisk appears.

Finally, we come to what information technology experts describe as the most inscrutable part of DNS protocol – mail exchange (MX) resource records. Again, attempting to understand the concepts behind multiply redundant mail servers and load sharing and prioritizing mail servers might get difficult. Establishing a rudimentary mail exchange record is not. The example provided in Figure 2 ought to be adequate for copying.

Finally, you need a place to ask questions and to help debug errors. Create a newsgroup account in your news or email reader and point it to news.granitecanyon.com. There are three groups sponsored by Granite Canyon, and the group named soa.help is the one you should join. Though the servers are actually provided by a different volunteer, and Granite Canyon's volunteers rarely appear, the visitors populating the newsgroup are knowledgeable and friendly.

*Testing & debugging tools*

In the process of setting up and testing your DNS settings, you're going to require some Internet tools, but, as through the rest of this series, you won't need any commercial products. One of the original tools, published around 1996, was DNS lookup 0.91, but it's flaky, ancient, and clumsy. OTTools and WhatRoute will give you the ability to look up domain registrations from a Whois registry, and to ping and traceroute, but what you really want is a tool to do a Linux/Unix command called dig. Dig looks for the zone as it exists at a particular name server, rather than seeking the answer in the multiply redundant world of DNS. After a significant search, I found that Men & Mice, publishers of QuickDNS Pro, publish a freeware/crippleware version of their DNS Expert Professional. Hidden in the Tools menu, DNS Query is a wonderful dig engine which remembers your recent domain names and name servers. Find it at the link provided at http://us.mirror.menandmice.com/cgi-bin/DoDig.

Fig.3: Logo for DNS Expert Professional

At times during your testing, you may want to test from outside your IP address area. This can be particularly important if you do many repeated tests sequentially within a short period of time or if you are trying to determine whether the changes you've entered to your DNS zones have propagated. The Men & Mice web site mentioned above provides an excellent platform for remote digs, and the site at http://combat.uxn.com/, designed to enable hunting and tracking of spammers, provides another series of remote tools.

### Changing your ISP at the Registrar

The final step in getting your new DNS servers online is to inform your registrar about them so they can put the data into their TLD DNSs. Some would think of this as a prerequisite. The ZoneEdit script guides you directly to the correct page of your registrar — provided your registrar is Network Solutions. This is inconvenient for novices, anyway. At least for your first zones, you should click the blue button at the bottom right of the ZoneEdit box and skip changing your registration until your zones have been tested. You can return later to the correct form at NSI by clicking the "More Info" button in the ZoneEdit box warning you to change your designated name servers.

Nevertheless, finding the correct form in the morass of Network Solutions (NSI) is a singular challenge and initially took me well over an hour. Search for the form under "Make Changes" for "Change ISP." At other registrars, such changes are simple to make and nearly instantaneous to implement, though the changes may take as many as three days to propagate across the web. If you need help, a human will promptly and politely answer email – except at NSI. (See Sidebar: Can we give a zero-star rating to NSI!

### The final frontier: NNTP Newsgroup Service?

The only other service I might consider hosting is newsgroup service. My new ISP prefers to provide the "telephone lines" without providing Internet services. It doesn't offer USENET newsgroups. I may not need the ability to provide a newsgroup to my visitors or co-workers, but I must give people inside the network access to USENET. *The* source of information on setting up BIND instructions is at comp.protocols.dns.bind in the USENET. It is unthinkable to run Linux, as we do for our firewall and master file server, without comp.os.linux.networking, comp.os.linux.security, comp.os.linux.setup, comp.protocols.appletalk,

**Sidebar: Can we give a zero-star rating to NSI!**

It is plain that NSI is a clumsy, overpriced, unresponsive, monopolistic pig. It was designated as *The* Registrar in a misconceived and poorly executed public-private partnership before the web exploded and the expected registrations magnified from tens of thousands to hundreds of millions. Once the contract expired, the Department of Commerce forced NSI to surrender its monopoly, but it permitted them to have too strong a hand in creating the rules for their own competition. The result is obscene pricing of domains at $35 per year when the market rate appears to be between $7.50 and $11; surly, ill-mannered staff who can't even be reached because of an even more surly morass of useless and helpless automated forms; and a series of intentionally placed pitfalls and traps to ensure that you have to return your registration to NSI.

I still have all of my domain names at NSI because they forced me and I don't want to waste time or money moving them until the domains get close to expiring. The second tier of registrars is massive, and the registrar market will almost surely shake out before then. On the other hand, it is a pain waiting three emails, sent at least twice, plus two days, for a routine, automated update which, anywhere else, happens at close to the speed of light. An early change may be particularly urgent, since NSI is rumored to block registration changes either 60 days before or 60 days after a registration, and they send notices during this time and cybersquat names to prevent you from moving if you fail to renew them. And, almost all of the registrars – except NSI – credit extra time left over from a prior registrar. Maybe I'll switch before expiration!

Fortunately, there are competitors providing much cheaper and far more convenient and friendly service once you get past the monopolistic practices of NSI. And, on the web, shopping their services is nearly instantaneous. By an informal poll of folks on the help newsgroup of Granite Canyon, I got a list of a few of the best:

http://www.stargateinc.com/ offers $10 per year registration, which drops to $8 if you register two or more at the same time and bulk rates are available. Like most of the competing registrars, they tack the additional time on to the end of your present registration, so you lose nothing in the transition. While they are your registrar, they throw in little "extras," like URL redirection and masking, so you can host your site at a willing, free source, like Geocities, mac.com, or Yahoo.com, and link your new domain name to that host site without the types of servers covered by these articles.

http://ww.nameit.net offers $7.49 per domain for bulk registrations of 2000 names or more. Single transfers can range as high as $34, though, and I couldn't understand the price charts without undue study. Good reviews for responsiveness and ease of use.

http://www.10-domains.com/ charges $10 per domain.

http://gandi.net/ charges 12 euros, which is around $10-11. The FAQs are helpful and the staff is shockingly responsive to emails. They are in Paris.

http://www.dotster.com/ seems quite popular at $15.

http://www.mydomain.com/ provides registration and hosting, with some registration services running between $10-15. I didn't examine the web site closely enough to follow the terms and conditions. They received some bad reviews for service, for complex and limited terms, and for limited domain management tools.

http://register.com/ was one of the early entrants to this market after the doors swung open, and they sponsor Granite Canyon, so, if you use them, make sure to enter through the portal at http://www.GraniteCanyon.com/ to ensure proper credit, but they still charge $35 per domain per year. They throw in free domain hosting services, though, which would mean you won't need this article or Granite Canyon if you select them.

But, at bottom line, as one newsgroup contributor put it: "FOR GOD SAKES, CHANGE TO A DIFFERENT REGISTRAR WHERE YOU CAN DIRECTLY EDIT YOUR DNS AND OTHER INFO... and for less money, to boot."

comp.protocols.smb, and comp.security.firewalls.

From the client side, newsgroup service is easy, since most email clients can read newsgroups just fine. Consult the help instructions for Outlook Express 5.0 or Netscape Communicator if you have problems with that. There are both Mac and UNIX/Linux answers for providing your own NNTP server, but the complexity of NNTP may be daunting. I sought free, complete, and open newsgroup servers on the Internet. INN meets all three criteria. Leafnode, http://www.leafnode.org/ gives up completeness in favor of reasonable scale and ease of administration. Stairways' product, Rumormill, regains some of the completeness, but gives up open and free. It is Mac shareware. Another cheap commercial product is Dnews, found at http://www.buller.se/DNews/default.htm.

I passed the word around the TCS and got these reviews of the various NNTP servers for Macs:

> "Leafnode's interesting. It's basically the equivalent of a squid proxying web server, only for NNTP. If you ask it for the contents of a newsgroup, it'll go out and get maybe a hundred messages from that group for you to sample. And it'll continue picking up that group until it notices that no one's asked for it in a couple weeks, at which point it'll leave that one alone. As such, it self-adapts and scales and learns your small office's needs — to a point, so long as your needs fall within a certain band. And given adequate storage.
>
> "I'd expect Rumormill to be much easier to set up, but not nearly as easy to maintain once it's running. You'll need to add and remove groups manually, do some preventive maintenance on the back-end database file every now and again, and keep an eye on load to make sure the server will be able to handle a sudden burst of spam without being pushed over the edge. None of it [is] rocket science, but not something you can just put on a machine somewhere and leave alone.
>
> "And, [it's] certainly not something you can piggy-back onto a 68K Mac which is already handling DNS, mail, and web services for a handful of domains. A 'moderate' newsfeed these days really demands Sparc hardware running Solaris and writing to carefully-tuned RAID storage. A little weenie leaf site getting only a couple dozen groups, depending on volume, should be [okay] on a PowerMac or FreeBSD box or something with a couple more gigabytes than you think you need.
>
> "... [T]his won't get around the need for news services from an upstream provider. It will, however, allow you to roll your own authorizations and let you access a single consistent news server from wherever you are on the road."

Perhaps, as one expert concluded:

> "NNTP has all the globally-distributed-database complexity of DNS, plus all the backwards-compatible-with-archaic-standards complexity of Sendmail, plus its own unique scaling and performance issues the likes of which you've not yet had to experience for anything. Setting up a full newsfeed requires big-time hardware and big-time ongoing attention to low-level performance details. Setting up even a local caching proxy still ends up making you learn too much about a protocol – and, in fact, a virtual society — to make it worth approaching lightly."

On the other hand, these same sources told me a year ago that it wasn't worth the effort — or even possible — for lay people to set up free and shareware web and email service. They were the same, talented computer professionals who told me six months ago that I couldn't master DNS. If you're inclined, try it. But, if you succeed, maintain the free tradition of the Internet and write an article about your successful experiences. And, write to me so I can spread the word.

I've concluded that it really is senseless to spend time setting up an NNTP newsgroup server. I do not wish to host a newsgroup locally, and my only needs are for reading the groups I want. That service can be purchased for $3.95 per month for an anonymous, record-free feed at http://www.1usenet.com/, if you don't mind some minor bandwidth limitations. If you do mind the bandwidth limitations, $5.95 per month buys 18 parallel servers and no limitations. Four years of 80,000 newsgroups on spam-filtered or unfiltered servers costs less than an hour of my time. That's close enough to freeware! ■

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*Richard S. Sternberg is a member of the Board of Directors and a local lawyer. He has recently published a book entitled, The Querulous Commitment (Xlibris 2001), available at your favorite on-line or local bookstore.*

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Washington Apple Pi

Board of Directors Notes

# March 7, 2001 Meeting

Directors present: Don Essick, Brian Mason, David Harris, Richard Sternberg, Kenneth Clare, Pat Fauquet, Dale Smith, Kristen Dunn-Thomason, and Needham Langston.
Directors Absent: David Weikert, Steve Fink, Lorin Evans, David Ottalini
Member Present: Jon Thomason

THE MEETING of the Board of Directors of the Washington Apple Pi was called to order at 7:50 pm on March 7, 2001.

### Old Business

The minutes of the January meeting were approved as amended.

### MacWorld bus trip to New York

Mary Keene and Jim Ritz are making the preliminary arrangements for the buses to take members wishing to go to the MacWorld show in New York in July.

### Summer Camp

Pat Fauquet has prepared the advertisement for the WAP Summer Computer Camp. there will be several one-week session held in July and August.

### 2001 Election

Kristen Dunn-Thomason has assembled a group of members to serve on the Election Committee for the 2001 Election. Those volunteering to serve include Kristen, Jon Bernstein, Steve Fink, and Paul Chernoff. Henry Ware has agreed to once more serve as the Election Challenge Committee.

### MacWorld San Francisco

Lorin Evans and Pat Fauquet reported on their observations of the MacWorld San Francisco, which they both attended. One of the highlights was the presentation of awards for the best User Group Web Site and the best User Group newsletters. The awards were presented by Adobe Systems. Judging was done by David Ottalini, Pat Fauquet, David Harris, Nancy Seferian, and Kathryn Murray of the WAP. Pat reported that hand-held computers using the Palm Operating System were very much in evidence on the floor of the show. There was a suggestion that the WAP may want to permit the establishment of a SIG for those members with Palm OS compatible hand-helds.

### Mail list service

Needham Langston reported on the progress he is making on helping the WAP establish a list of members and others that will be able to be used in directed emailings from the Pi. Of course, those without an email address will be unable to receive these emailings and will only have the Journal to rely on for news and information.

### New Business

### Mac OSX

The new Mac operating system, Mac OSX, is scheduled to be for sale on March 24, which is the date of the March WAP General Meeting. We are arranging to have some area Mac vendors on hand at the meeting, selling the new operating system. WAP volunteers will then assist any member who brings their qualified computer to NOVA to install the new OS on their machine. Inside the auditorium, people will be able to learn about the new operating system.

The Board meeting was adjourned at 9:10 pm. ■

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# Classifieds

Classified advertisements can be placed by mailing copy to the business office of Washington Apple Pi, Ltd., 12022 Parklawn Drive, Rockville, MD 20852. Be sure to include your WAP membership number and indicate area codes with your phone numbers. Ads must be received by the ad copy due date listed in the calendar page for that month in order to be included in the appropriate issue. Any ads postmarked after that time will be included at the discretion of the editor. Cost is $2.00/line (40 characters per line), maximum 12 lines. Members of Washington Apple Pi, Ltd., may place ads up to three lines at no charge. The editor reserves the right to refuse any ads deemed inappropriate.

## Services

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**Mac Consultants and Techs Wanted:** Join our team of dedicated and professional Mac lovers as we serve the technology needs of businesses throughout metropolitan Washington, DC. Send us an e-mail describing yourself and what you WANT to do every day. Then tell us about your professional qualifications, specifically your experience helping people with technology and troubleshooting Macs in a networked environment. Send your resume to <macjobs@uptimeweb.com>. Visit our website at www.uptimeweb.com to learn more about Uptime Computer Services, Inc.

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-=-=-=-

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-=-=-=-=-=-

**Java Marketing Manager:**
The Java Product Manager bears primary responsibility for making Mac OS X the best place to develop and deploy Java applications. This involves promoting Mac OS X as the industry's first high-volume deployment of Java 2 Standard Edition, as well as attracting developers to Apple's advanced object-oriented "Cocoa" frameworks for Java.

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**Manager, Design & Print marketing:**
Responsible for developing and delivering marketing programs to drive Apple's growth in the professional-to-prosumer design and publishing markets worldwide.

-=-=-=-

**Java Developer Support Engineer:**
Developer Support Engineer to provide Java support and engineering for Apple's third party partners . Will provide code level debugging support,on-site code evaluation and development assistance and design guidance fordevelopers writing Macintosh Java applications.

-=-=-=-

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- ☐ Performa (all)
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- ☐ Mac 1.44 k
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1. Please leave my name on the Pi mailing list. (The list never leaves the office and all mailings are supervised by the Pi staff.)
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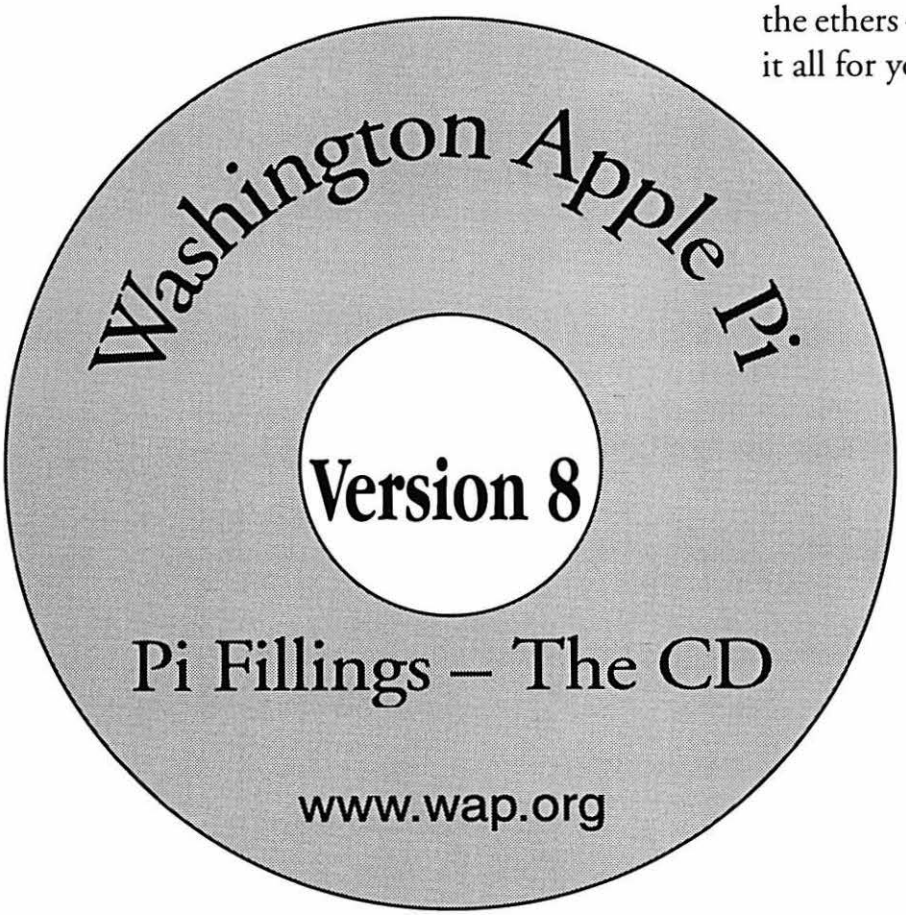


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**Washington Apple Pi, Ltd**
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