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washington apple pi

The Journal of Washington Apple Pi, Ltd.

Volume 14, Number 2 February 1992

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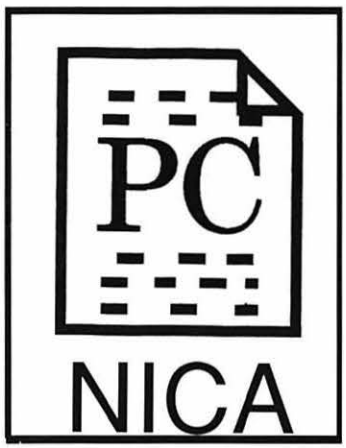

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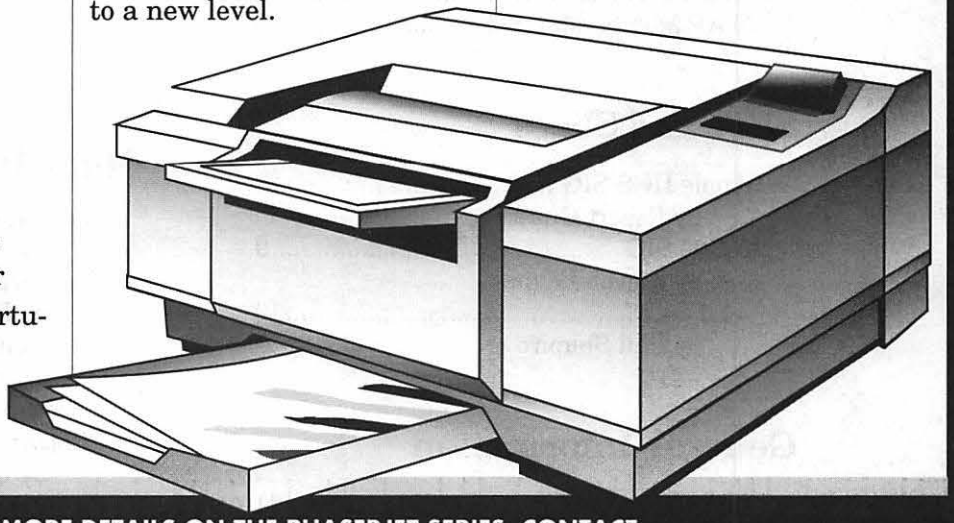

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Editorial Page

In the Pi Pan...

by Debbie Hoyt

Sometimes things just fall into place. I know. It doesn't happen often, so when it does, we have to appreciate it. Just last week I received a phone call from a lady named Louise. Louise wanted definitions forthe Computerese in the Journal. She wanted me to identify every abbreviation, every acronym, etc. that might confuse the novice reader.

Now, this was not an unreasonable request. Labor intensive, but not unreasonable. Many of our authors are so far above the novice that they probably think in Basic and C and can't imagine their readers not knowing the difference between an HDFD and an A/UX. That means it's left to the editor to translate their dialects into readily understood English. Not a minor task, by the way. But this month a rare case of Serendipity occurred which may have saved me from editorial seppuku.

For some reason-maybe your vibes of frustration were so strong that they reached the writers, Novice Readers-many of this month's articles were designed to be informative to the new user. If you are relatively new to the Washington Apple Pi, then I encourage you to check out the articles on *Memory, Troubleshooting, Converting, Batch Printing,* and, of course, the *Tutorials*. There is even an article on Apple History with some helpful definitions contained in the sidebar on page 26. So, while I'd like to take the credit for *immediately* coming to the rescue of a reader, I cannot. I will say that in several of the not-for-novices type articles, I took Louise's advice and included explanatory definitions in parentheses. Hope this helps.

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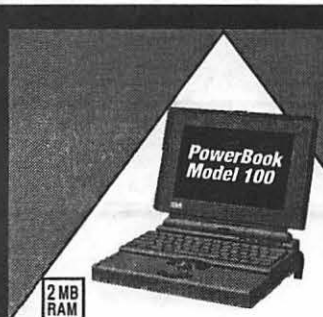

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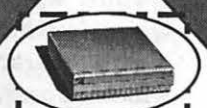

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SIG's and Slices

Apple IIGS SIG

by Robert Gurskey

'Twas the lull between the holidays, but the few hearty souls who made it to the Dolley Madison Library had a good time. Before the presentation began, our chairman Gary Hayman made some announcements.

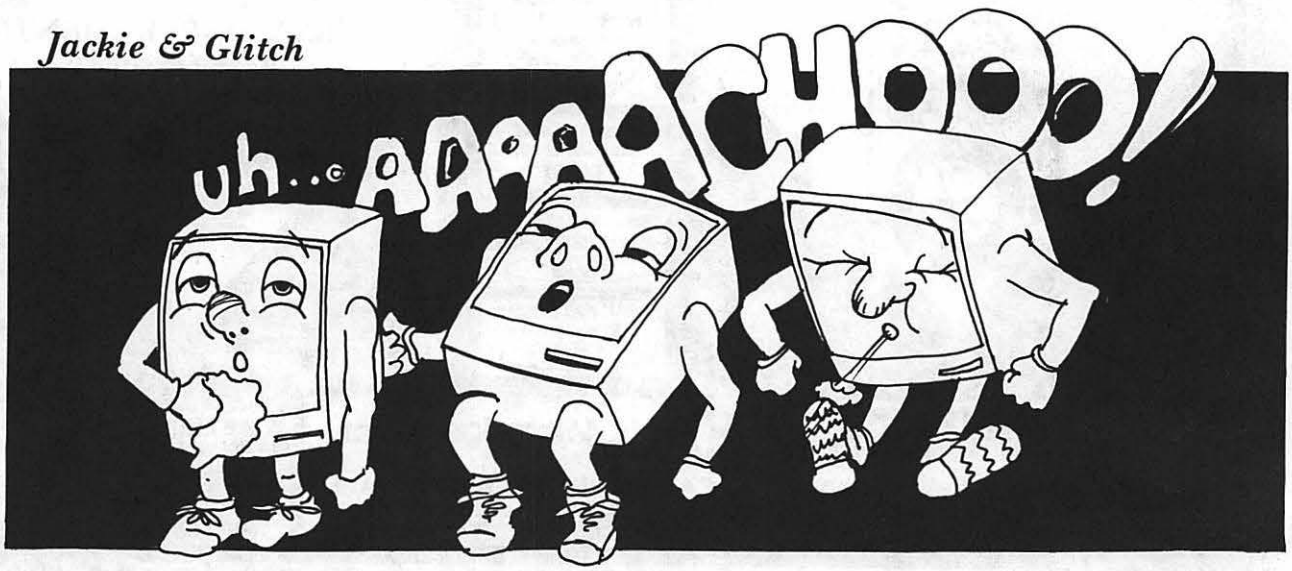
The Apple IIGS computer is no longer available in the commercial markets and can only be obtained through education sources. The same is true of the Apple IIe. Also many IIGS owners are selling their machines and moving up to the Macintosh. This makes the SIG more vital for disseminating information among the remaining owners and helping the new owners of the used IIGS's. Gary suggested opening up the SIG to all Apple II owners because the IIe, IIc and even the II+ owners will continue to need support. No decision was reached on the matter, but, personally, I attended SIG meetings long before I bought my IIGS.

Next, Gary showed some of the results from his new toy, a BLP laser printer. He showed some examples from Publish-It! using text, graphics, and a dump of a database from AppleWorks 3.0. The latter printed at laser quality and not as a laser printer emulating an ImageWriter.

Next, as presenter of the evening, I demonstrated some new ShareWare games which have recently appeared. First was Matchgame.GS, a simple variation of the classic Nim. If you know the trick, it is easy to win; but if you don't, the computer is merciless. Next up was Puzzle.GS, the classic 4x4 sliding block puzzle familiar to all the Mac owners. This program included choices for starting positions of the blocks and musical tones as the puzzle was solved. As a bonus, the sliding puzzle image is contained in an SHR graphic which could be modified by any paint program. Thus the user can customize the puzzle to his own choosing.

Third was a demonstration of Quinette, which bears some resemblance to Go and the game Quintic, which appeared in the February

Jackie & Glitch



1986 issue of Nibble magazine (love those computerized databases). The object of the game is to get five pieces in a row either vertically, horizontally, or diagonally, or "eat" five pairs of your opponents pieces. The game allows human vs. human, human vs. computer, or computer vs. computer play. The search depth of the game tree can also be adjusted. Shallow search results in a quick but stupid opponent, while a deeper search level will make the computer smarter but much slower in arriving at a move. I found one bug in the program. The Open-Apple N keystroke for starting a new game does not work and causes the program to enter its own little world. Only a reboot will get you out.

The last game demonstrated was Dr. Mario, a new variation on the Tetris and Columns genre of games. The object is to remove pesky viruses (not computer viruses) from a vitamin bottle by aligning colored vitamin pills with the colored viruses. Four in a row and their gone. It sounds easy but higher levels of the game include more viruses stacked one upon the other which require some quick thinking to avoid the inevitable filled vitamin bottle.

Then we listened to some SoundSmith Christmas music, including the new song on the TCS "Coventry." Some were amazed to see the new screen displayed while the music was playing, but this was a file contained in the TCS downloads. Gary Hayman says that SoundSmith is no longer a ShareWare program, but a commercial product. He was unsure which company is marketing it in the U.S.

Finally we saw some animation demonstrations from a number of sources, including the program S.A.P. (Simple Animation Program). This program will allow you to create your own animations.

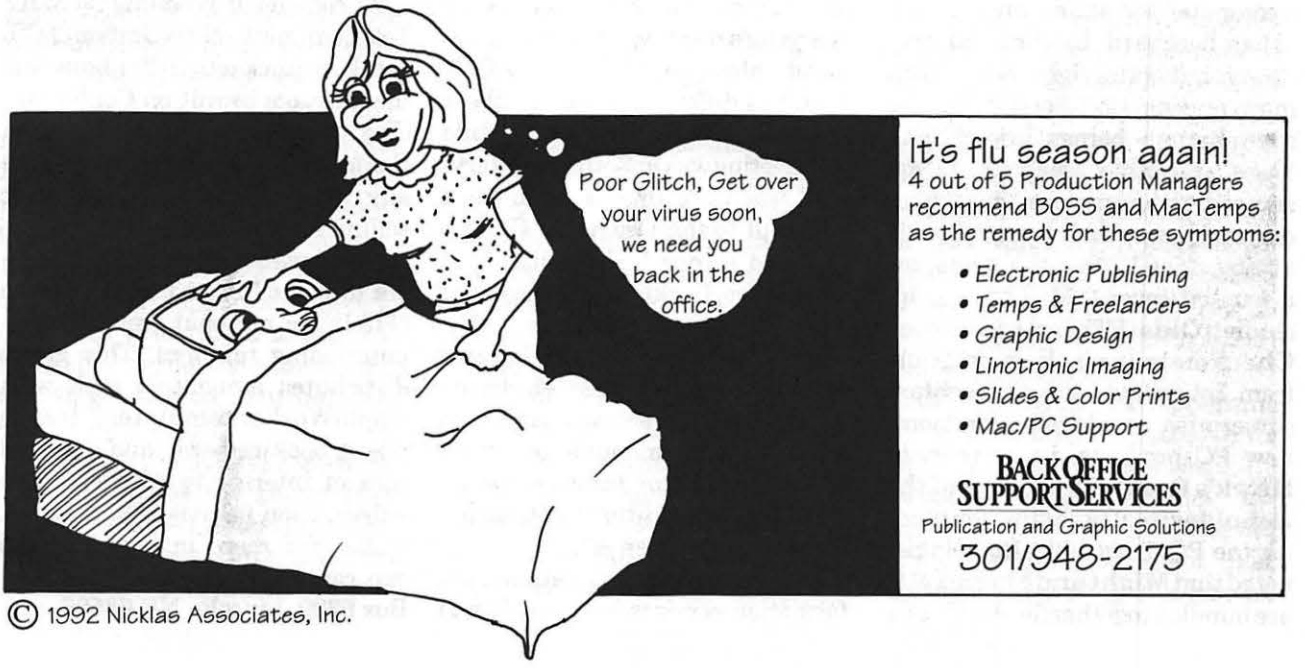
Throughout the evening there were tips about some of "hidden" features of ProSel-16 and of the Finder. The evening was capped off with some disk copying, as usual. See you next month at NIH in Bethesda.

Game SIG

by Steven Payneo

The rumors of our demise have been greatly exaggerated! In spite of the dearth of new Apple games, GameSIG has continued bravely gathering on the first Thursday evening of every month in the WAP Office. The reason for the long silence in the Journal? Yours truly has missed most of the recent meetings and, unfortunately, was never able to recruit a substitute. (We're gamers, after all, not writers!)

In November we discussed some of the games, old and new, that members are currently playing. Charles Don Hall has long ago completed the MS-DOS version of **Might and Magic III** (New World Computing), and described its differences from the previous two installments. The latest version is icon-driven, and, when you kill off a class of monsters, they're gone for good. (Charles is such an effective



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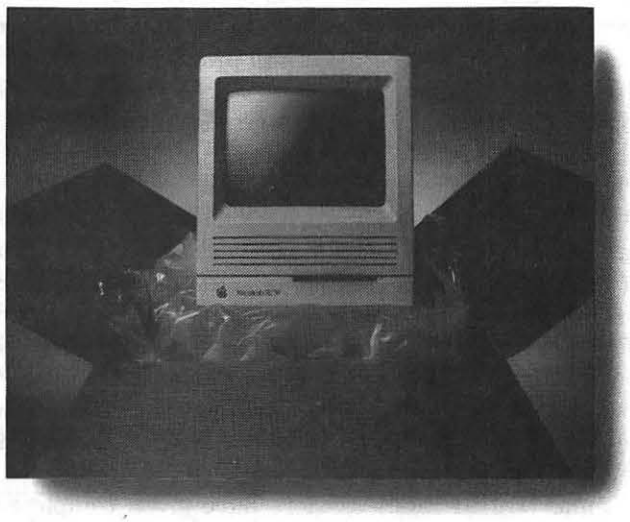
encouraged and sometimes the author even asks for feedback for possible future revisions. What a terrific bargain that is, yes, but very often PD offerings are full of bugs. This does encourage users to investigate the make-up of disks and attempt to correct and modify some of these programs.

Where can one get these great freebies? Your user group is the best single source for this type of material. ACES, for instance, maintains a huge library of the three kinds of software. The only charge is for duplication and cost of the media alone. Most all user groups maintain libraries for this purpose. They are available in both 5.25" and 3.5" forms, in GS only and others for all the II's. Other great sources are the bulletin boards, both club sponsored and commercial. America-On-Line (AOL) and Genie have special Apple sections for downloading, possibly others do as well. Again, the ACES bulletin board has many sub-boards devoted to FreeWare and ShareWare downloads. [GH: The TCS at the Washington Apple Pi, too.] There are also many commercial organizations in the field who distribute FreeWare and PD material for little more than the cost of duplication and media, generally in the $3 to $3.50 range. The Big Red Computer Club and NAUG come to mind in this regard.

If we honor and support this unique method of software distribution, we can expect a continuing source of high-quality software at little or no cost. Any computer programmer who feels that he or she has a good and unique type of original material, will find the world of ShareWare and/or FreeWare is open to them. Go for it!

This article appeared in 'Bits & Bytes' an on-disk publication of the Apple Computer Enjoyment Society of South Florida — an organization of several user groups. Stan Feller is the editor of this excellent publication. Gary Hayman contributed it for presentation here.



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Book Review

Lingo: My Kind of Guy

by © 1991 Lawrence I. Charters

Once upon a time, there was a programmer named Brewster who worked for an insurance company. He was clever, gifted, talented, and all the things a programmer should be, but he was bored stiff. This, among other things, should leave no doubt that he was a Good Guy because few would argue that any decent programmer with this kind of job shouldn't be bored.

So Brewster created Lingo. Or, rather, Jim Melnick created the novel *Lingo*, which is about Brewster's creation of Lingo. Both Lingo, the program, and *Lingo*, the novel, are surprisingly good.

Most computer novels are written by people who seem to have only the vaguest idea what a computer can do. Most would take the idea of a bored programmer, an insurance company, and lead the reader inevitably to the logical conclusion: computer crime. *Lingo* does have some computer crime [warning: contains scenes of digital violence and wrongdoing!], but the program, Lingo, is the star.

Lingo, in his early beginnings, is little more than a sophisticated Eliza, the famed MIT artificial intelligence experiment that simulated conversation. Through a combination of pressure from a girl friend looking for a marketable program, and a boss who wants Brewster to be more serious, Brewster moves the infant Lingo from his IBM PC at work to his Apple IIGS at home, and things get interesting.

Like virtually every other Apple IIGS on the planet, Brewster's machine is hooked into every possible peripheral. There is a speech synthesizer, video camera, gobs of memory, and other goodies that, even Brewster admits, he doesn't really need. Like a prized pet, he tries to give his machine the very best, and one of these peripherals happens to be a modem.

Through a series of events, Lingo manages to use the modem to "reach out and touch someone," in this case a national computer service and an MIT artificial intelligence experiment. Using some learning and code modification routines written by its creator, Lingo transforms itself from a mild-mannered pseudo-conversationalist to a budding intelligence. Then, looping back through the learning routines, Lingo seeks out and discovers more information on programming, intelligence, data analysis, video recognition, speech and — runs out of room on its poor little 20 MB hard drive. So Lingo starts using the modem to link up and store parts of itself on other computers.

Before Brewster is fully aware of what is happening, Lingo has emerged as a true intelligence, "artificial" only in terms of biology. While Brewster struggles to understand how Lingo managed this transformation, Lingo sucks up the rest of the world through television, and uses the modem to explore the huge telecommunications network linking banks, businesses, the military, universities, and even home computers.

It doesn't take long for Lingo to realize that it is better educated, and has a sounder grasp of ethics and morals, than most humans. It decides to transform itself, and designs a self-propelled wooden replica of a human — a puppet — to represent its persona, and becomes a walking, talking "star" of talk shows and video game shows. All this is just a preliminary to Lingo's true goal: politics.

In many respects, *Lingo* is a low-key version of Thomas Ryan's breakthrough novel, *The Adolescence of P-1* (Collier, 1977), a hard-edged novel about a similar program taking birth in an IBM 360 mainframe. Ryan's work is more frightening, Melnick's is far funnier, but both are excellent.

While *Lingo* is a novel, there are

π

some worthwhile moral and ethical issues at stake. Lingo's logical assumption that it deserves to be in politics is reminiscent of another great work, William Borden's *Superstoe* (Holt, Rhinehart, 1968), in which a brilliant philosopher conspires to take over the U.S. and give it decent, intelligent government. Superstoe the philosopher is a man, and Lingo the logician is a program, but both come to startlingly similar points of view.

There are many reasons to like *Lingo*. It is funny with lots of computer humor. It raises some good political, ethical, and moral issues. It says nice things about the Apple IIGS. It is entertaining, which is, when you think about it, the prime reason for reading, or writing, a novel.

For those who don't have time for novels, give it a try, anyway. And if you happen to run into Data, the android on *Star Trek: The Next Generation*, give him a copy, too.

Melnick, Jim. Lingo. New York: Carroll & Graf, 1991. 334 pp. ISBN 0-88184-628-7. $19.95

Tips for Working With a Service Bureau

by Phil Shapiro

Apple Computer, Inc. would like you to think that the desktop publishing revolution is all a matter of hardware. Software companies, such as Aldus, would like you to think that desktop publishing is all a matter of software. The truth is: hardware and software are vital ingredients, but the real desktop publishing revolution is created neither by hardware nor software, but by people.

Thousands of people have set up their own small desktop publishing services in the past five years. They can print anything from résumés and business cards to display ads, signs and booklets. Just about anything you can print on paper can be accomplished by a skilled desktop publisher.

In the past year, I've had considerable success working with a small desktop publishing service and thought that it might be beneficial to pass along some tips. The following tips might prove useful in getting your material printed at a minimal cost.

Shopping for a desktop publishing service can be a little more tricky than shopping for laundry detergent. Many of the smaller services do not advertise in large newspapers. A good place to start is with the yellow pages. But you won't find every desktop publishing company listed in the yellow pages. Some services, for instance, are run as moonlight services after regular office hours.

A second place to go shopping for a desktop publishing service is your local computer user group. Go to one of their meetings. Check the bulletin board at the WAP office. Several dozen business cards are posted on this board. (See the listing of Desktop Publishing Artisans at the end of this article.) Check the club's electronic bulletin board, the TCS, under the category of Help Offered on Conference 4. Sometimes the Classifieds section of the WAP Journal lists desktop publishing services.

Once you locate several services, find out their hourly labor rate. Ask them how much they charge per laser printed page. (A typical rate is a dollar per page.) Ask to see samples of their work. Even new startup companies will have portfolios to show you.

More important than rates, though, is the general impression you get from the person(s) running the company. Does it sound like they want your business? Ask them

if they mind doing frequent smaller jobs for you. (Many services would prefer to do larger, long-term jobs, where they don't have to have excessive interactions with clients.)

Be realistic about their point of view. If you expect to use their services rarely or just for smaller jobs, you can expect to pay a little more for the work. If you expect to use them regularly for larger types of projects, you can expect more flexibility and slightly lower prices.

The fees for getting material desktop published varies somewhat from service to service. Typical fees range from $20 per hour on the low side to $80 per hour on the high side. As you might expect, materials costs need to be added in above the costs of labor.

A skilled desktop publisher can get quite a lot of work done in one hour. But some layout jobs are more tricky than others. Communicate your desires in simple and clear terms. Ask for an estimate of how much work is involved in getting what you want.

In some cases, the service might offer you options. They could offer you the "quick and easy" route to produce elegant, but not entirely "professional" looking output. If you're willing to compromise a little on how the finished product looks, you may be able to save considerably on the final cost.

Other ways to cut down on your costs is to help the service minimize [their] costs. Bring recycled cardboard folders (or large clasp envelopes) with you when you go to get something laser printed. That way your work will be safely protected on the way home. If you can save them the expense of providing envelopes and folders, that's one less outlay on their part. Another small courtesy is to offer to pay your bills on the spot, rather than having them mail you an invoice. The stamp and envelope you save is one less expense for the service.

Another way to help minimize your desktop publishing costs is to plan ahead, giving the service a few extra days to get your work done. If you can let the service fit your work in around their other jobs, they're more likely to compromise a little on the rates they charge you.

It's helpful to know that many desktop publishers charge a premium fee for "rush jobs." A rush job is any job that must be positively completed within 48 hours. A typical fee for rush jobs is double the regular fee for the same job on an unrushed schedule.

Yet another way to help minimize your desktop publishing costs is to collect several small jobs for printing at the same time. Although desktop publishers routinely charge by the hour, they typically have a minimum fee of one hour's work. If you establish a good rapport with the desktop publisher, you may even be able to get your printing done while you wait. The more familiar you become with desktop publishing in general, the better you'll be able to estimate how much work is involved in getting your particular job done.

Clear communication is the key to getting what you want from a desktop publishing service. If the printed output is really important, plan on having the service produce at least one rough draft. Typographical and spelling errors are very easy to correct at the last minute. But rephrased sentences, or deleted paragraphs, could possibly throw a whole page off. If you expect to be doing major, last minute revisions, expect to pay for the work to accommodate these revisions.

Speaking of corrections, you may or may not want to leave the proofreading work to the service. Ask the service if they have the skills and inclination to do your proofreading work. Ask them how much extra they charge for such service.

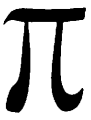
If your work is important, you'll want to have several people proofreading it before the work ever gets viewed by the public eye. If possible, you should get your proofreading entirely finished before you even approach the service bureau.

You ought to know that desktop publishing often involves a healthy amount of aesthetic judgment. Be honest with the publisher if the printed work does not suit your tastes. But be flexible if the printed work meets your general expectations. When your work involves artistic elements, you may want to communicate the general mood you're looking for. The service can then act according to these general directions. (Rough sketches of what you have in mind can be very helpful, by the way.)

Some desktop publishing jobs you'll want to take to a printer after generating the camera-ready copy on a laser printer. Your desktop publisher may be able to recommend an affordable printer, thereby saving you the effort of making inquiries all over town. (On one large printing job of mine, I saved about $500 by using a printer recommended to me.)

Finally, if you're on a bare-bones budget you might look for a high school student to perform your publishing work. These days many high schools laser-print their school newspapers. And some of the kids have quite a lot of experience laying out text and graphics.

Find out if the kid has a laser printer at home. (You don't want to be mooching off the school printer,



if at all possible.) Realize that your cost savings might be traded-off against the benefits of working with a full time professional service.

One last word. Kinko's, the national photocopying chain, offers self-service Macintosh computers at many of their stores. Unless you've had considerable experience using a Mac and considerable experience using the software such places offer, it's best to steer clear of them. The frustration of trying to figure out everything on your own is just not worth the bother. It may even end up costing you more than taking the job to a professional service. (Kinko's full-service publishing is a better option. Keep in mind that you may get more personalized service from a small startup desktop publishing service than from Kinko's.)

Other people have mastered the skills needed to produce excellent looking laser printed output. Take advantage of their expertise, and you'll do well in the long run. In time, you yourself may develop the skills necessary to do simpler types of publishing. And then you can tap the experts for your more complex printing jobs.

Recommended Resources

[Note: these resources generally progress from the simpler to the complex. Many of these titles are available in the Montgomery County library system.]

Parker, Roger C., Looking Good in Print: A Guide to Basic Design for Desktop Publishing, 2nd Edition, Ventana Press, Chapel Hill, NC, 1990.

Hewson, David. Introduction to Desktop Publishing: A Guide to Buying and Using a Desktop Publishing System, San Francisco: Chronicle Books, 1988.

Electric paper [videorecording]/ All-Micros Computer Training; producer/ director: Jill Lamont. Kent, WA: All Micros Computer Training, 1989. (35 minutes) VHS 1/2 in. VHS. Summary: Basics of desktop publishing, covering basic software and hardware, creation of a logo, letterhead and newsletter on the Macintosh and IBM compatible.

Desktop Design, 1 [Video-recording]: An Introduction to Basic Electronic Graphic Processes, produced by Goldsholl Film Group; Dynamic Graphics, Inc.; Step by Step Video. Peoria, IL: Step-by-Step Video, 1988. (31 minutes) 1/2 in. VHS. Summary: Basics of desktop publishing, covering basic software and hardware, creation of a logo, letterhead and newsletter on the Macintosh, and page layout.

Desktop Design, 3 [Video-recording]: creative design with page-layout software/ produced by Goldsholl Film Group; Dynamic Graphics, Inc.; Step by Step Video, Peoria, IL, 1989. (45 minutes) 1/2 in. VHS. Summary: Creative page layout techniques for the Macintosh, using Aldus PageMaker, Ready, Set, Go, and Quark XPress, to create charts, ads, multicolor layouts and maps.

White, Jan V., Graphic Design for the Electronic Age, New York: Watson-Guptill Publications, 1988. (211 pages)

Stockford, James, ed., Desktop Publishing Bible, The Waite Group, Inc., Sams, 1987.

Bove, Tony, The Art of Desktop Publishing: Using Personal Computers to Publish it Yourself, 2nd ed., Bantam Books, 1987.

Parker, Roger C., The Makeover Book: 101 Design Solutions for Desktop Publishing, Ventana Press, Chapel Hill, NC, 1989. [This book has lots of interesting "before and after" examples.]

Parker, Roger C., Newsletters from the Desktop: Designing Effective Publications with Your Computer, Ventana Press, Chapel Hill, NC, 1990.

Rabb, Margaret Y., ed., The Presentation Design Book: Projecting a Good Image with Your Desktop Computer, Ventana Press, Chapel Hill, NC, 1990.

Shushan, Ronnie; Wright, Don; and Birmele, Ricardo, Desktop Publishing by Design, (Ventura publisher edition). Redmond, WA, Microsoft Press, 1991. 345 pages. Includes bibliographical references.

Kvern, Olav Martin; and Roth, Stephen, Real World PageMaker 4: Industrial Strength Techniques, (Macintosh edition), New York: Bantam Books, 1990. 381 pages.

Beach, Mark; Shepro, Steve; Russon, Ken, Getting it Printed: How to Work with Printers and Graphic Arts Services to Assure Quality, Stay on Schedule, and Control Costs, Coast to Coast Books, Portland, OR, 1986.

Gosney, Michael; Odam, John; Schmall, Jim, The Gray Book: Designing in Blank and White on Your Computer, Ventana Press, Chapel Hill, NC, 1990.

Desktop Publishing Artisans

[The following list was compiled from business cards posted on the bulletin board at the WAP office. This list is not meant as an endorsement of any of these services.]

Kathryn Murray
Words & Numbers UnLtd.
(202) 234-1771

Jesse Porter
MacMatics Associates
(301) 869-5802

Gabriel Thy
Graphic Solutions, Inc.
(202) 546-8929

Susan Mysen/Trina Sensenig
Texpress Publishing Group
(301) 913-0402

Ellen MacBrayne
EMB Graphic Arts, Inc.
(703) 451-2801

Ellen J. Wolfe
Tripplar & Associates
(301) 907-0311

Thomas J. Piwowar
Thomas J. Piwowar & Associates
(202) 223-6813

Susan Caravella
PC Resources, Inc.
(703) 860-1100

Anita Brown
Desktop Designs
(202) 232-FLOW

Susan Mele
Macintosh Desktop Publishing
(202) 291-3239

Ruth S. Frances
Editing/Desktop Publishing
(301) 654-6599

J. Perry Fitzhugh
Folly Productions
(202) 722-4907

Nancy Seferian
Greencastle Graphics
(202) 333-5244

Dan & Julianne Halberstein
Design on Demand
(202) 291-0479

Robert W. Morris
Desktop publishing/Mac consultant
(301) 963-3129

Arthur N. DuBois
Doo Bwa Inc.
(301) 262-1426

Tyrone Medley
Graphic Artist
(202) 529-9229

Debbie Hoyt
The Write Place
(703) 450-0714

Jeffrey L. Duvall
Arlington Desktop Publishing
(703) 979-6170

Robin Beth Shuldenfrei
Robin Graphics
(301) 469-0235

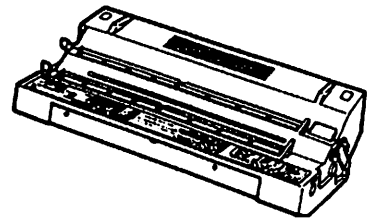
Jill Metzger
Calliope Press
(301) 593-4055

Curtis B. Charles/Karen M. Brown
Karisse Designers
(301) 336-4082

Galaxy Graphics, Inc.
Slide Imaging/Photo Scanning
(703) 802-1111

Phil Shapiro is the founder of Balloons Software, a new Apple II educational software company. He has used a small publishing service to produce his company logo, business cards, letterhead, advertising, informational flyers, and software documentation.

Toner Cartridges Remanufactured



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Artists on exhibit

by Ann Aikin

This column will look at the art and artists of Washington Apple Pi and the techniques and tools used to create the art.

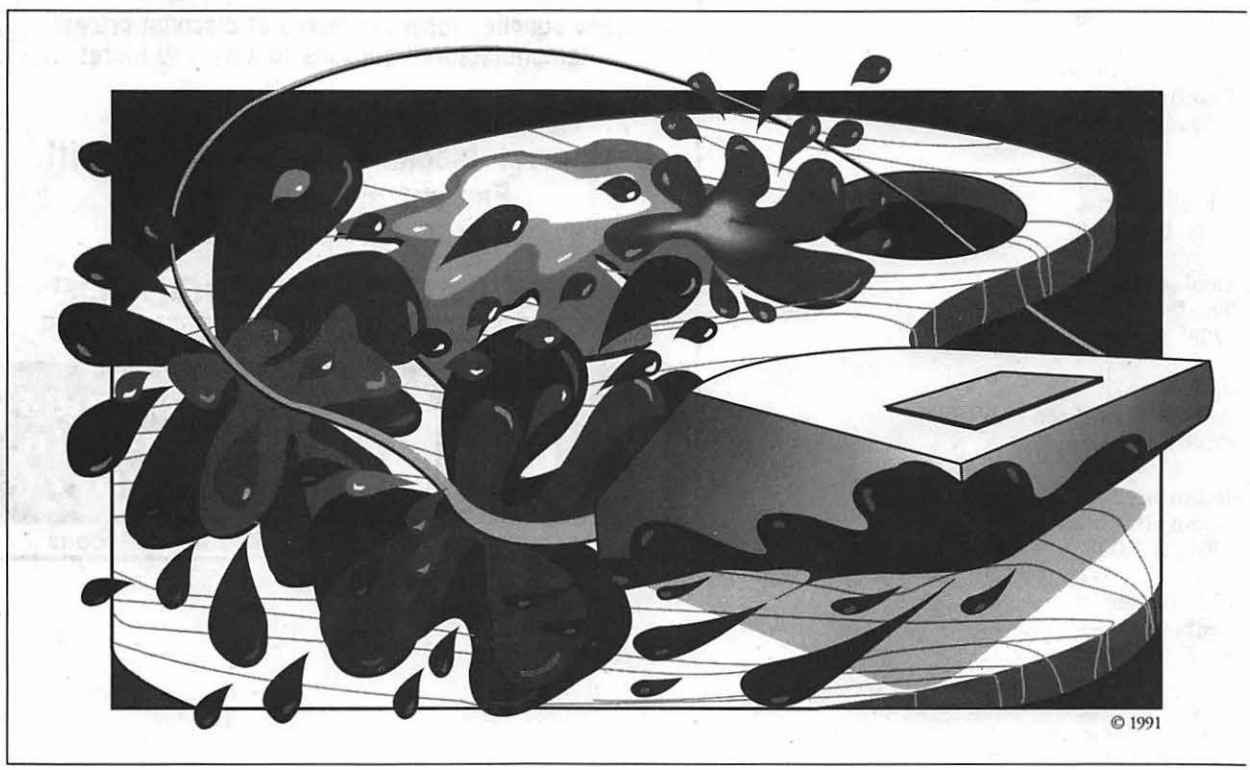
Artist info: Scott Farmer has been with Design Consultants, Inc., in Fairfax for the past eight years and an owner of the company since 1987. He studied Graphic Design at Millersville University, PA. Scott has been working with the Mac for four years. Projects range from spot graphics and charts to four- and five-color brochures and posters.

Tools: Mac IIfx (5 MB RAM, 80HD), Apple Scanner, SuperMac 19" screen, Adobe Illustrator 3.01 and Adobe Separator.

Techniques: "The easiest and fastest way to begin working on complicated projects is to have a very good 'rough' worked out on paper. Next, either scan your 'rough' or work directly on the screen. For easier scanning, do a couple of roughs–the first for the background and others for the foreground, then combine them.

"Next, I defined the outer dimensions of the card. Then I worked inward from the furthest layer (the pallet) to the nearest layer (the mouse). The "Hide" option was very helpful on this project. It allows you to remove any item from the screen while keeping it in perfect registration. To return the item to its place, just use 'Show all'. *Be careful,* you may hide items one by one, but "Show all" does just that; it shows "all" hidden objects.

"It helps to work in sections. In this case each paint splash is a



grouped item. When I wanted to work on the next splash, I would hide the last group of splashes. 'Show all' would bring it all back and I could to make sure they were in register. The smaller droplets were added last to show action.

"A helpful feature is the direct selection tool (the hollow arrow). Even if an object is grouped you can select it or a single point on its path for adjustment. I often kept the splashes grouped and selected specific points for adjustment.

"The pen tool is much easier to manipulate than the freehand tool. I prefer to click and drag a curved line rather than draw it with the freehand tool. This allows me to determine where the points (or handles) on the line will be placed, instead of the program randomly placing them on the path.

"The drop shadow on the mouse cord was created by selecting the cord itself and dragging it straight down while holding the shift key down. Then I selected the paint attributes (black) and sent to back.

"On the original four-color piece, each item was selected and colored using the four process colors: solids first, then the blends.

"Blends were done by first creating the outer shape for a boarder, then creating an inner shape on either end of the blend. Both inner shapes must be ungrouped. Select the desired colors* and then one point on each shape with your pointer tool. Switch to the blend tool and click on the same two highlighted points. A dialog box appears asking for the number of steps to blend. To avoid 'banding,' use the following equation:

(dpi / lpi) ^{2} x % change in color = number of steps to use in blend

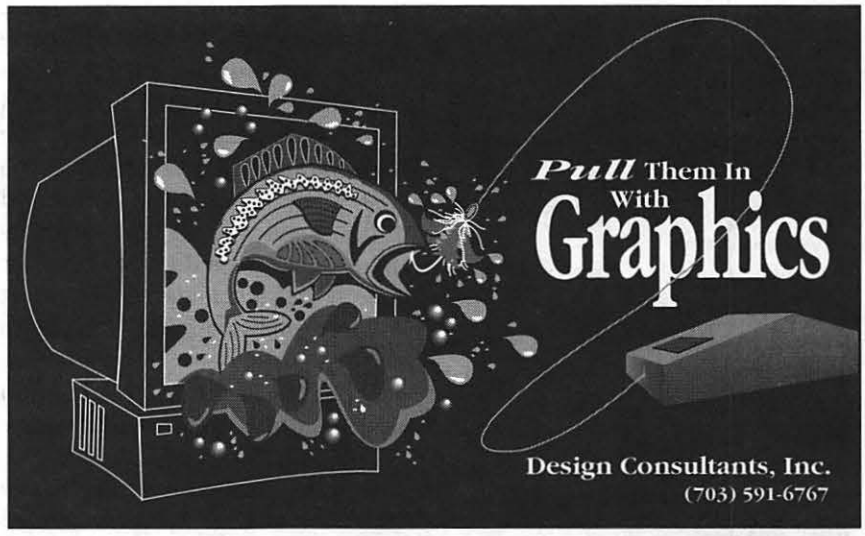
Select outer boarder, 'Bring to front.'

* **TIP#1**-If you're blending from 100% of a color to white, make sure that you blend from 100% of the color to 0% of the same color! This habit will come in handy when you get into separating PMS colors. The computer considers white a color. If you used white but didn't consider it in your separations, you'd be missing a section of your artwork.

* **TIP #2**-The order of selection matters, too. If selected improperly, the inner blends will be covered up by the last stage of the outer blend. If blending from one outer circle to an inner circle (like the bubbles in the second example with the fish), you should select the point on the outer circle first and the inner circle last. This will blend the bigger outer circle into the smaller inner circle as if it were coming toward you.

"Before finishing, make sure you 'Show all' and then print to your laser printer to check your work. If it doesn't print for you, chances are it won't print at a service bureau.

"For a full-color piece, the last step is to pull the file into Adobe Separator. First, I open the program, and then select the file to be separated. The four separations and the parameters are selected (i.e., Negatives, Positives, RC paper, Line screen) and the spot where the files will be located on your disk is given. For best results, coordinate with your service bureau. On a complicated color job, I recommend going straight to negatives. On less complicated one- and two-color jobs, use resin coated (RC) paper. It's much easier and less expensive to make alterations."



* *See "Tips" for further explanation.*

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The World Of Fonts

Exploring Typefaces — 13

by Frank Potter

We're feeling a wee bit cramped for space these days, so there aren't a whole lot of fonts to see—but we make up for that by not knowing a whole lot about them, either. It all adds up.

Serpentine (153)

This font doesn't look a bit serpentine to me, but I find it quite attractive. Not suited to business correspondence, to be sure, but it still has a curious angular elegance. Its blocky, rounded corners seem well suited to an eye-catching display or advertisement.

If I were asked (I have not been, and am not likely to be—but if I were, I would call this a "modern" font, perhaps reminiscent of some of the early stuff that was produced in the '30s. It may very well not have been, I hasten to add—but that's what it looks like to me. If I were asked.

The font sells for $275, and can be found at places like MacConnection for something like $177.

Copperplate Gothic (113)

You have seen this font around more than you probably realize. Engravers use it for things like calling cards (someplace around here, buried in the basement, is a plate and set of cards that my parents had made for me when I was born, and which I never used nor will I ever, in all likelihood) and you may find it in the kinds of things law firms put out when they are announcing new partners. Real formal stuff, Copperplate.

Its complete lack of ascenders and descenders mean that it can usually be found "set solid," or with leading that is equal to the size of the letters. The serifs end in lines, not wedges, as is usually the case with serif typefaces. Nor does it have a lower case—what would otherwise be lower case is just a smaller set of upper case letters, with no difference in design that I could see without a loupe.

The typeface sells for $370, which is expensive as Adobe typefaces get. You can find it at mailorder houses for considerably less, as you might expect: probably close to $240.

Adobe Type Guide

Adobe has produced the second volume of its Type Guide (well, more precisely, it is due to have produced it in the month of January). They have just sent out a flyer announcing its availability at a reduced price, and if you want a good look at the entire range of typefaces available from Adobe, it's not a bad investment at all. Volume One has been out for some time now—at least a year—and Volume Two will be available for just $15 (or both for $25), plus $7.50 shipping and handling.

Volume One covers the font packages from 1–123, while Two goes on through package number 235, which is just about up to date. The special offer is said to be valid only through January 15, but the announcement just arrived, which suggests that you may be able to take advantage of it anyway, if you whine and snivel a lot. Worth trying, anyway. I haven't seen Volume Two, naturally enough, but it is on the same scale as Volume One, it will be worth having—at least if your interests run in that direction. (And if they didn't, what are you doing reading this, anyway?)

Serpentine

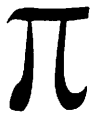
ABCDEFGHIJKLMNO
PQRSTUVWXYZabcd
efghijklmnopqrstuv
wxyz1234567890 &

ABCDEFabcdef Serpentine Light
ABCDEFabcdef Serpentine LightOblique
ABCDEFabcdef Serpentine Medium
ABCDEFabcdef Ser MediumOblique
ABCDEFabcdef Serpentine Bold
ABCDEFabcdef Ser BoldOblique

The rabbit-hole went straight on like a tunnel for some way, and then dipped suddenly down, so suddenly that Alice had not a moment to think about stopping herself before she found herself falling down a very deep well. 10/10

The rabbit-hole went straight on like a tunnel for some way, and then dipped suddenly down, so suddenly that Alice had not a moment to think about stopping herself before she found herself falling down a very deep well. 10/12

The rabbit-hole went straight on like a tunnel for some way, and then dipped suddenly down, so suddenly that Alice had not a moment to think about stopping herself before she found herself falling down a very deep well. 10/14



Copperplate

Copperplate 29ab

ABCDEFGHIJKLMNOPQR
STUVWXYZ123456789

Copperplate 29bc

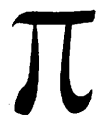
ABCDEFGHIJKLMNOPQRSTU
VWXYZ1234567890&

Copperplate 30ab

ABCDEFGHIJKLMNOPQ
RSTUVWXYZ12345678

Copperplate 30bc

ABCDEFGHIJKLMNOPQRSTU
VWXYZ1234567890&



Copperplate 31ab

ABCDEFGHIJKLMN
OPQRSTUVWXYZ1

Copperplate 31bc

ABCDEFGHIJKLMNOPQ
RSTUVWXYZ1234567

Copperplate 32ab

ABCDEFGHIJKLMN
OPQRSTUVWXYZ1

Copperplate 32bc

ABCDEFGHIJKLMNOPQ
RSTUVWXYZ1234567

Copperplate 33bc

ABCDEFGHIJKLMNOP
QRSTUVWXYZ123456

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Apple History (Part 3)

The Apple II: Hardware and Firmware

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

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

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

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

The row of eight expansion slots was another feature about the Apple II that was a strong selling point. Unlike the TRS-80 or PET, you could easily expand the Apple II by sim-

ply plugging a card into one of these slots. This degree of expandability made it more expensive to build, however. Steve Jobs didn't believe that anyone would ever need more than two slots, one for a printer and one possibly for a modem. Wozniak knew from his experience with computers at Hewlett-Packard that computer users would always find something to fill those extra slots and insisted that they keep the number at eight.[4]

One problem Apple had to deal with was getting FCC approval for the computer. The RF (radio frequency) modulator that had been designed gave off too much interference, and it was probable that the FCC would not approve it. (The RF modulator allowed a user to attach the Apple to a standard television receiver, instead of requiring the purchase of an expensive computer monitor).

Rather than have the release of the Apple II delayed for re-engineering of the RF modulator in order to get that FCC approval, Apple gave the specifications for the RF modulator to Marty Spergel. He ran a small company (called M&R Electronics) that specialized in obtaining hard-to-get parts that electronics and computer hackers wanted for their projects. Their agreement allowed M&R to make and sell the RF modulators, while Apple could concentrate on making and selling the Apple II.

Dealers would sell an Apple II with a "Sup'r Mod" (costing about $30) if the buyer wanted to see the graphics on their color TV. Jobs assured Spergel that the item would sell well, maybe as many as fifty units a month. (Years later Spergel estimated that he had sold about four hundred thousand Sup'r Mods).[5]

Among the other features that Wozniak (and Allen Baum, who helped him with the project) included in the Apple II ROM's were the terminal software to do screen text display, expanded Monitor functionality, and cassette input/output routines. They added the ability to split the screen into different sized windows. They also wrote a disassembler, which was one of the most important features of the Apple II from the beginning and a significant part of its open design. It allowed anyone to view the 6502 code that any program used and matched the philosophy of the Homebrew Club of making all computer knowledge available to everybody. In the Apple I days, when Apple was supplying software "free or at minimal charge," Wozniak and Baum published an early version of their 6502 disassembler in a hacker's magazine. It was designed to be loaded in memory on the Apple I from $800 to $9D8 and the routine could be executed from the monitor. This early code was quite similar to the disassembler that was later included in the Apple II ROM.[6]

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

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

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

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

Now, a Word from Our Sponsor: Back to the Basics

I want to take a short break in this discussion of the Apple II firmware to look at some other items that will make further descriptions easier to understand. If you are a programmer already, you may want to skip this section, since you probably already know this stuff. First, we will examine some definitions of terms that are commonly known to programmers, but possibly not to you (see box below). Next will be a

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brief excursion into the realm of hexadecimal, and finally a look at the memory map of the original Apple II.

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

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

$$\begin{aligned}\$B65F &= (11 \times 16\text{^}3) + (6 \times 16\text{^}2) + \\ &\quad (5 \times 16\text{^}1) + (15 \times 16\text{^}0) \\ &= (11 \times 4096) + (6 \times 256) + \\ &\quad (5 \times 16) + (15 \times 1) \\ &= 45056 + 1536 + 80 \\ &\quad + 15 \\ &= 46687\end{aligned}$$

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

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

Bit the smallest piece of information that a computer can deal with, it is either a "0" (off, clear) or a "1" (on, set).
Byte the most convenient piece of information (for humans) that computers use. One byte consists of eight bits, and ranges from "00000000" (0 decimal) to "11111111" (255 decimal).
Nibble (also spelled "nybble") one half of a byte, consisting of four bits, ranging from "0000" (0 decimal) to "1111" (15 decimal).
Word two bytes (or four nibbles, if you prefer), consisting of sixteen bits, and ranging from "00000000 00000000" (0 decimal) to "11111111 11111111" (65535 decimal). Not used much in microcomputers.
Binary a system of counting using only two digits, "0" and "1" (base 2). Computers speak in binary at their most basic level; anything else is translated into binary, so the computer can understand it.
Decimal a system of counting using ten digits, "0" through "9" (base 10). Most of the Western world uses this system.
Hexadecimal a system of counting using sixteen digits, "0" through "9" and "A" through "F" (base 16). Programmers use this system as a convenient way of organizing groups of binary numbers.
Kilobyte abbreviated "K", "KB", or "Kbytes", it refers to 1,024 bytes. A 64K computer has 64 x 1024 = 65536 bytes.
Megabyte abbreviated "M", "MB", or "meg", it refers to 1,024 Kbytes, or 1,024 x 1,024 = 1,048,576 bytes. A 32 MB hard disk, the largest size volume that ProDOS can handle, holds 32 x 1,024 = 32,768 Kbytes, or 32 x 1,024 x 1,024 = 33,554,432 bytes.
Gigabyte abbreviated "G", "GB", or "gig", it refers to 1,024 MB, or 1,048,576 Kbytes, or 10,737,441,824 bytes. The Apple II Smartport (which will be mentioned later in this history) can handle disk devices up to 4 gig in size (although the software to handle that type of size has yet to be written).
RAM Random Access Memory. Any data stored in this memory disappears when the computer is turned off.
ROM Read Only Memory. Data cannot be stored in this type of memory, but instead it usually contains programs or other information that does not disappear when the computer is turned off.
Hardware the physical electronic components and mechanical parts that make up a piece of computer equipment. Examples would be the keyboard, disk drive, or television monitor (also called CRT, or Cathode Ray Tube).
Software the digital instructions executed by the computer in RAM. They may act on the hardware that is attached to the computer. Examples would be a BASIC or Pascal program, an assembly language routine to read a clock, or a disk operating system. Since software is executed in RAM, it disappears from memory when the computer is turned off.
Firmware the same as software, except it is executed from ROM, and does not disappear when the computer is turned off. Almost any software could be in ROM, except programs that modify themselves as they run.

The Apple II: Memory Map

To understand the memory layout of the Apple II, consider this analogy: Imagine a cabinet with sixteen shelves and sixteen separate slots or pigeon holes on each shelf (similar to those found in old

roll-top desks). Each slot refers to a specific address in memory on the computer, and each slot can hold a number between 0 and 255 (because a byte is eight bits wide, the largest number that can be represented by eight binary bits is 255). The bottom shelf is row "0" and the leftmost slot in that row is slot "0." The address of that slot, then, is $00. As we move to the right, the addresses increase, $01, $02, $03, and so on to $0F at the end. We then go up to the next row, (row "1"), and the addresses continue in the same fashion with $10, $11, $12, and so on as before. The sixteenth row is row "F," the rightmost slot in that row is slot "F," and the address of that slot is $FF. This cabinet has, then, 256 slots (16 x 16) and represents what is called a "page" in the Apple memory. The cabinet itself has an address (since computers need addresses for everything), and this one's address is "00." The full address of row "5," slot "A" on cabinet "00" is $005A.

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

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

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

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

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

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

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

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

Δ Page $C0: internal Input/Output and soft-switches.

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

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

Δ Pages $D0-$D7: empty ROM socket #1.

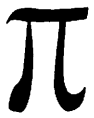
Δ Pages $D8-$DF: empty ROM socket #2.

Δ Pages $E0-$F7: Integer BASIC ROM.

Δ Pages $F8-$FF: Monitor ROM.

The memory space on the Apple II between $C000 and $CFFF was assigned to handle input and output. From $C000 to $C0FF the space was reserved for various soft-switches used to control the display, and various built-in Input/Output devices, such as the keyboard, paddles, annunciators, and the cassette port. (A soft-switch is simply a memory location that, when a number is stored there, changes something in the computer—such as switching on graphics mode). From $C100 to $CFFF the space was reserved for ROM on the plug-in peripheral cards for each of the seven slots. Slot 1 was given the space from $C100 to $C1FF, slot 2 from $C200 to $C2FF, and so on. The $C800 to $CFFF space was special slot-selectable ROM that was uniquely available for each of the seven peripheral cards. For example, a program running on the card in slot 6 to control a device could use the $C800-$CFFF space for its own purpose. When control passed to the card in slot 3, that card could use a program of its own that ran in the same $C800-$CFFF space. This was accomplished by allowing each card to have ROM code that covered pages $C8-$CF, and making that space "switchable," depending on which card wanted to use it. Having this space available made writing ROM code simpler because it would not have to be capable of running at various memory locations (depending on in which slot a card was plugged).

The memory from $D000 to $D7FF and $D800 to $DFFF was empty on all early Apple II computers. On the motherboard were two empty sockets that were available for the user to plug in his own ROM chips. The $D000-$D7FF space was most often used by a plug-in ROM chip sold by Apple, known as



"Programmer's Aid #1." It contained various utilities for Integer BASIC programmers, including machine language routines to do the following:

- Renumber BASIC programs.
- Append one BASIC program to the end of another.
- Verify a BASIC program that had been saved on tape (to confirm it was an accurate save).
- Verify non-program data that had been saved on tape.
- Relocate assembly language routines to a different location in memory (most would only run in one place in memory).
- Test the Apple II RAM.
- Generate musical tones through the built-in speaker.
- Handle hi-res graphics from BASIC, including code to clear the hi-res screen, set colors, plot points and lines, draw shapes, and load shapes from tape.

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

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

The Integer BASIC interpreter lived in the ROM space between $E000 and $F7FF. However, BASIC only used the space up to $F424. Between $F425-$F4FB and $F63D-$F65D could be found a floating-point math package that was not used by Integer BASIC but was available for BASIC programmers who were astute enough to figure out how it worked (an early Apple user group, the Apple Pugetsound Program Library Exchange, or A.P.P.L.E., sold a tape and notes by Steve Wozniak they called "Wozpak," that documented some of the secrets of the Integer BASIC ROM).

Between $F500-$F63C there was code that was known as the "mini-assembler," which was executed starting at the ominous address $F666. The mini-assembler allowed you to enter short machine language programs using the standard 6502 mnemonics (the three letter codes that referred to a specific type of operation; for example, "LDA #" represented the 6502 opcode $A9) instead of entering the program byte by byte in the monitor. The $F689-$F7FC space contained Woz's SWEET 16 interpreter. Wozniak wrote SWEET 16 to simulate a 16-bit processor; it simplified some routines he wrote for the Apple II ROM's, including the Programmer's Aid #1 renumber, append, and relocate routines.

Simply put, he took a series of hex bytes, defined them as "opcodes" the way he wanted them to function, and when executing the code used his SWEET 16 interpreter to translate the code into legal 6502 operations. It ran slower than standard 6502 code, but when memory space was at a premium it was better to have a slow program than to not have enough room for the program at all.

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

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

NOTES

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

[2] ——, "Memory Organization", Apple II Reference Manual, 1979, 1981, pp. 70-73.

[3] Val J. Golding, "AppleSoft From Bottom To Top", Call-A.P.P.L.E. in Depth #1, 1981, p. 8.

[4] Michael Moritz, The Little Kingdom, p. 157.

[5] Steven Levy, Hackers: Heroes of the Computer Revolution, pp. 260-261.

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

[7] Jack Connick, p. 23.

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

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

[10] ——, Programmer's Aid #1, 1978.

[11] Dick Sedgewick, "SWEET 16 - Introduction", Merlin User's Manual, 1982, pp. 103-109.

The MacNovice: System 7 Revisited

by Ralph J. Begleiter

A few months ago, I advised MacNovices to steer clear of Apple's new "System 7" software which updates the basic operating system that runs your Macintosh. It's time for some updated advice.

If you're a MacNovice using a Macintosh with four or more MB (megabytes) of RAM (Random Access Memory), go ahead and try System 7. If your Mac has less than four MB of RAM, you shouldn't suffer any damage, but you'll be unhappy with the change. You should stick to using one of the older Macintosh system releases, preferably version 6.0.5 or higher.

For those of you who are *already* lost, a few words first.

System software consists of the software located in the System Folder of your disks. It's the software which gives your Mac its menus, trash can, folder and file icons, and many other attributes. You normally don't even realize it's there. System software just works in the background, preferably as invisibly as possible.

RAM is the "workspace" memory installed in your computer. One megabyte is about the minimum necessary to properly run most Macintosh software. Two MB is what's installed in the minimum new Macintoshes. Higher-powered Macs, such as those in the Mac II family, usually have more than two MB of memory. How do *you* know what you've got? Simple. When you're looking at your electronic desktop (the screen with the disk, folder and trash can icons), choose "About this Macintosh..." (or "About the Finder..." on older Systems) from the Apple menu. A small screen will reveal how much memory is installed in your machine.

Apple recommends System 7 for Macs with at least two MB of RAM. That's true, but you won't have much space left to run anything else, i.e., a word processor or spreadsheet program. Small-memory Macs are better off with System 6.0.X.

If you have more memory in your Mac, System 7 really works just fine. Most Macintosh programs I've tested recently, including a few very old ones not upgraded for years (such as the economical spreadsheet MacCalc), run nicely on System 7.

There are a few programs with glitches such as the Ashton•Tate products Full Impact (spreadsheet) and FullWrite Professional (word processor). Under System 7, Full Impact loses its *Quit* and *Print* commands from the File menu. FullWrite loses its SET MARGINS dialog box. (The developers of both programs have repaired the problems in upgrades, but those upgrades have not been sent to registered users. FullWrite has a "System 7 Patch" program which updates version 1.5 to version 1.6; Full Impact's latest version, 2.0, fixes the System 7 problems. Both upgrades are available from Borland, the software firm which acquired the bankrupt Ashton•Tate in 1991.

When you switch to System 7, you'll have to give up the indispensable file management utility called "Boomerang." It doesn't operate correctly under System 7. But its developers are now *selling* an updated version of Boomerang as part of a utilities package called "Now Utilities!" (Be sure you receive version 3.0.1.)

There are lots of reasons to switch to System 7. Briefly, its file handling capabilities are much greater than previous systems. And, perhaps most importantly for MacNovices, System 7 makes the handling of system software much easier. You no longer fuss with the installation of fonts and desk accessories, and it's easy to create an

Apple menu which contains all of the programs, documents, and folders you use frequently.

But something else System 7 does that is of great value to MacNovices: It handles your Mac's memory much more smoothly. This is something you probably won't even notice, unless you realize that you're experiencing fewer system crashes. In essence, System 7 is much more flexible than before about allocating portions of your Mac's memory to individual programs. This keeps them from conflicting with one another (a problem which is responsible for a lot of crashes under older system software).

MacNovices who have never used MultiFinder under older system software (or who don't know what MultiFinder *is*) are in for a confusing treat with System 7.

The new system software allows (in fact, it *encourages*) users to run more than one program at the same time. "Big deal," some MacNovices might say. "I can only *work* on one thing at a time." But think of the convenience of keeping your checkbook program running along with your word processor so that you can write a note to accompany your payment. Or of keeping your word processor and your paint or draw programs open simultaneously so that you can "tinker" with artwork when you discover that it doesn't quite fit into the word processing document you're creating. Or of running your communications program (on-line with the office) while you develop a memo or touch up some artwork.

System 7's icon menu in the upper right-hand corner of the screen allows you to switch instantly among programs already running, bringing the one you *want* right to the foreground when you need it and sending it to the background when you're ready for something else.

Why did I say this can be confusing for MacNovices? Many of you are simply not used to having more than one program running at once, and switching between them under System 7 means the menu bars at the top of your screen will be changing instantaneously. It's easy to forget momentarily *which* program you're working in and to be come confused about the menus.

It's also easy to forget how *many* programs you have running at once. System 7 can simultaneously open as many programs as your Mac's memory allows. On a Mac with eight MB of RAM, you might have four, five or six programs running at once. If you *forget* that, and you try to open *another* one, you'll get a message saying you're out of memory. You'll have to switch to one of your other open programs and quit to make space for the new one.

If you're a MacNovice who happens to have two large hard disk drives, here's how to give System 7 a test drive, without removing your old reliable System 6. Leave System 6 on the hard drive where it is. On the *other* drive, create a new System Folder. Use the System 7 "Installer" to install System 7 *on that disk drive only.* (You'll probably need about four MB of disk space for the fat System 7, though it can be trimmed.) Now, select the control panel from your Apple Menu. In the Control Panel, select "Start-up Device," and tell your Mac to start-up using the *other* disk drive, the one on which you installed System 7.

Restart your computer. System 7 takes a while to load the first time because it must create some new files and folders to handle items on your System 6 drive. Test your commonly-used applications while you're running System 7. Fiddle with the features of System 7's new desktop to see if you like it.

To switch back, return to the control panel and set your *old* System 6 drive as your "Start-up Device." Next time you start your Mac, System 6 will be running.

Like anything new, System 7 takes some getting used to. (Among other things, it's definitely *slower* than the older System software.) But its vast array of improved features make it worth trying, even for MacNovices.

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Software Review

RunPC

by Paul Chernoff

RunPC is a specialized communications program, produced by Argosy Software, Inc. which allows a Macintosh computer to control a MS-DOS machine over a modem link, serial connection, and AppleTalk network.

RunPC is similar to *Timbuktu* and *Carbon Copy Plus*, except that its functions are more specialized: it is used for Macintosh/MS-DOS connectivity in which the Mac is always the remote computer and the MS-DOS machine the host. This means that the Mac will call and control the DOS computer, but the reverse is not possible. The host computer does the actual computer processing and the remote computer controls the host. While it looks like you are running MS-DOS software on your Mac, in reality the MS-DOS com-puter's screen appears in your Mac window. The MS-DOS computer is controlled both by the Mac's and its own keyboards.

Why Control a PC with a Mac?

One reason would be that you need to use PC software which has no equivalent on the Mac and do not want a second computer on your desk. You still have to buy a PC, but rather than have a second keyboard and monitor, you can connect the PC's CPU (Cental Processing Unit) to your Mac either via the serial cable or AppleTalk network. RunPC will create a window on your Mac's screen showing what is on the PC's screen and even copy information from the screen and exchange files between the two systems. RunPC performs better than SoftPC and gives you the option of using VGA quality graphics. You can also save money by linking a number of Macs to a single PC using RunPC and an AppleTalk network.

Because the PC is doing the actual running of the program, PC software will run more quickly than on SoftPC. The only requirement is that application software be able to run in the RAM available after loading the HostPC software. If your PC is on an AppleTalk network, then any Mac with RunPC can access it. The manual states that if the PC is running DESKview then multiple Macs can access it at once.

A second reason to control a PC with a Mac is inter-office remote control. I use my Macintosh at home to call up my office and control a PC remotely. This not only provides me with the ability to transfer files between my home and office, but it also provides me with access to my office's LAN. So I am able to exchange e-mail, transfer files, run most PC software, and even shutdown the network from the privacy of my own home. One bonus of RunPC is that the host computer can be accessed by both Macs and other MS-DOS computers.

The RunPC package includes a copy of RunPC, HostPC, MountPC and Software Bridge/Mac. The first two products are used in direct Macintosh/PC communications. MountPC is an INIT which allows any Macintosh capable of using a high density disk to read/write directly to MS-DOS floppies (it is similar to DOS Mounter and AccessPC). Software Bridge/Mac is a file translator package which is available separately but takes advantage of RunPC. This review will focus on the the RunPC and HostPC programs, though I will cover some unique aspects of Software Bridge/Mac.

History

RunPC was originally sold by DMA under the name pcMACTERM. DMA also sells pcANYWHERE III and IV, remote control programs for MS-DOS computers. RunPC's author, Brad Farkas, created Argosy Software to distribute RunPC and other software he has written.

While Brad wrote the RunPC software application, the HostPC pro-

gram is essentially the same program as pcANYWHERE III Host and was written by DMA. If you are already using pcANYWHERE III to allow PC's to connect to another computer, adding a Macintosh with RunPC will be very simple.

Installing SoftPC

Installation of RunPC is simple. It comes on one IBM and three Macintosh diskettes. The installer program copies the files to a hard disk and sets up MacBridge with your selected formats. One of the files contains the translators and can be used by Software Bridge/Mac, SoftPC and Apple File Exchange.

Installation of HostPC onto the PC is also simple. The files are copied to a PC's floppy or hard disk. You then set-up the type of connection, select a modem from the modem list, and, if you wish, set-up a security system. HostPC runs resident in the PC and takes up about 45K RAM. You can use your PC for other purposes and have it automatically answer the phone and run as a host.

Sample Session

I have used RunPC to connect to a PC at my office. To give a better idea of how SoftPC works I will outline a typical session.

Starting the Program

RunPC is made up of a single file. Just double-click on it to get it started. There are a few options which you can choose before calling the host computer.

The most important decision concerns the type of monitor you will be simulating on the Macintosh. You can choose between VGA, EGA, CGA and plain old non-graphic monochrome. This setting does not take effect until you quit and restart RunPC. By picking different settings, you can adjust the amount of RAM required under MultiFinder or System 7. I have found that the monitor setting does not need to match the one on the host computer. I set RunPC to VGA and my host has a Hercules Graphics Plus card with a monochrome screen. I have found that under WordPerfect 5.0 the various special fonts of the Hercules card are translated into different colors. The manual warns that the colors shown on the screen might not always match those of the MS-DOS host.

Another setting is the font size. The larger the font, the larger the window. Selection of font size will be determined by your preferences and the size of your Mac's screen.

Making a Call

Just select Dial from the File menu to bring up the directory dialog box. You can either type in the phone number or add to the phone directory.

Password Protection

The host computer was set-up with a password security system, so I must now enter my password. Every user has a unique password which tells the host program the type of terminal calling in and its access privileges. You can even set up the security system to call back the remote computer.

Do what you would do on a MS-DOS computer. Because the host computer is on my office LAN, I now sign onto my network account. From now on, the host computer reacts to my Mac's keyboard as if it were its own keyboard. I have complete access to all keys via my extended keyboard. RunPC allows you to enter function keys by clicking on the function keys listed at the top of the screen and provides a pull-down menu for access to the numeric keypad for users who do not have an extended keyboard.

At this point I usually access my electronic mail to see if there are any new messages for me. I can also send messages and files to other accounts. The mail software is not part of RunPC, but RunPC allows me to access software which runs on the PC.

I am not able to run my database program, R:base for DOS, due to memory limitations of the PC. Not only does HostPC use 45K RAM but my PC is on a network and the network drivers use another 100K. If I needed to run this type of software remotely, I could have used an 80386 chip powered PC with extended memory to increase the amount of RAM available for applications. If you want to use the PC on an AppleTalk network, I recommend using an AppleTalk card and driver because it uses the least amount of main memory.

Transfer Files

To transfer files run the XFER.EXE program on the host computer. While you need to initiate this program on the PC, you still operate the software via a Macintosh interface. A file transfer progress window will appear to track the percent of file transferred and the time left.

Files transferred to the Macintosh are given a Software Bridge icon. It is even possible to set-up RunPC to automatically translate the file(s) as they are transferred.

The file transfer process is intelligent about MacBinary. I have transferred files from my Macintosh at home to my office LAN and later

moved them to my office Macintosh and then ran BinHex 5 to restore them to their original status.

Chat with Host

If someone is using the host computer, I can "talk" with him by selecting "Chat with Host Operator" from the Options menu. A box appears on the PC's screen which has a place for the host and remote users to enter text, but this option only works with pcANYWHERE III and HostPC hosts. To end a session, simply select Hang Up from the file menu. I have the host computer programmed to automatically reboot after losing a connection to ensure that the next remote user will not have access to any of my files.

Fully Functional

HostPC requires about 45K RAM on the PC. This can create problems if the host PC is running on a network, has lots of device drivers and/or runs with many TSR's. While I was able to run WordPerfect 5.0 on my host PC there was not enough application memory available to run R:base for DOS, a particularly demanding program. I could have avoided this problem if I had run the pcANYWHERE IV host on a computer with expanded memory.

If you are running a pcANYWHERE IV host, be sure to set-up the host software for access by ATERM, the remote software included with pcANYWHERE III. Unfortunately, pcANYWHERE IV is not completely compatible with version III, and RunPC suffers from the same problems.

Good Screen Redraw

Screen redraw was totally accurate. While action seems slow at 2400 baud, this is normal for remote control software. I would imagine that screen drawing speed would be no problem at 9600 baud or with a serial cable or an AppleTalk connection.

RunPC has a IBM-clone font built into it, so the special graphics characters will show up properly on the Mac's screen.

With pcANYWHERE IV Host

RunPC was not designed to be used with pcANYWHERE IV Host. For MS-DOS users, pcANYWHERE IV has much faster screen redraw and file transfer abilities and is easier to use. But RunPC + pcANYWHERE IV host results in screen redraw problems, loss of the ability of the Mac user to initiate the chat feature and the loss of some advanced functions. This is not the fault of RunPC because it was designed to run only with HostPC or pcANYWHERE III host software. I

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was able to make the connection by convincing the pcANYWHERE IV host that I was connecting with ATERM software. Unfortunately, DMA decided to make pcANYWHERE IV only partially compatible with version III.

A pcANYWHERE IV host can also take advantage of extended memory which version III cannot. This means that pcANYWHERE IV leaves more RAM available for application memory. My one complaint is that RunPC does not fully support pcANYWHERE IV features. I have been told that the next upgrade to RunPC will include the pcANYWHERE IV host, providing improved performance.

The Extras

This review is concentrating on only one part of the RunPC package, RunPC itself. RunPC also includes Software Bridge/Mac and MountPC. The former is a file transfer utility which works with many Macintosh and MS-DOS packages. I have found the translators to be complete and competent.

The main test of a translation program is translating the same document in both directions and then opening it up in the original program. I remember a Russian computer translation program which took the Russian proverb, "The spirit is willing, but the body weak" and translated it into English and back into Russian. The final result ended up as "The vodka is strong, but the bread putrid." Software Bridge translated both basic documents and advanced features such as tables and parallel columns in WORD 4/WordPerfect 5.0 just fine.

Software Bridge works very well with RunPC and MountPC. After downloading a file, you can double-click on the file and it will be translated to your preferred format and launch. So, after downloading the file NICA, I double-clicked, Software Bridge launched, recognized NICA as a WordPerfect 5.0 document, translated it to WORD 4, launched WORD, and opened the newly translated document.

MountPC is similar to AccessPC and DOS-mounter. It enables the Macintosh to read, write and format MS-DOS diskettes. It works easily and is available separately.

RunPC/Remote: Retail Price of $219.
Contents: A copy of RunPC, HostPC, Software Bridge/Mac and MountPC.
Function: Allows a Macintosh and PC to connect to each other through a serial or modem connection.
RunPC/Network: Retail Price of $445.
Contents: The same as RunPC/Remote but includes licenses for 10 Macintosh computers, 1 PC computer.
Function: Allows a Macintosh network and a PC to connect to each other through a serial, modem or AppleTalk connection.
Manufacturer: Argosy Software, Inc.; 113 Spring Street, 5th Floor; New York, NY 10012; Phone: (212)274-1199; Fax: (212) 431-6567.

Recommendations

Assuming that you cannot replace your MS-DOS host with a Mac and that you need to access it remotely, RunPC works provided you are not running Windows. If you are running Windows, consider Timbuktu 5.0 which allows true MS-DOS/Mac remote control abilities in both directions. However, the first release of Timbuktu 5.0 is reported to be limited to computers connected by a LAN; modem connections are not yet supported.

If you only need the ability to transfer files between a Mac and MS-DOS machine, I think there are better solutions. The true worth of RunPC is in controlling software on a MS-DOS from your Mac, and linking into a e-mail system or multi-user database justify this sort of connection.

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Hardware Review

Memories are Made of This...

by Tom Witte and Jonathan Hardis

This is the article on Macintosh memory configuration which was inspired by John O'Reilly, originally written by Tom Witte, and modified by Jonathan Hardis.

With all of the continuing changes to the Macintosh product line, it's easy to lose track of the options available to you. Even when you know, it's difficult to judge which are worth buying. This article is the first in a series of technical reviews with the goal of bringing you up-to-date. In it we hope to explain in simple terms what you need to know about RAM memory. Future articles will discuss "recorded" memories, such as floppy disks, hard disks, and so on. Additional articles also depend on what you, the reader, submit to the Journal Editor–a friendly reminder that the Journal depends on volunteers among our membership for writing contributions.

What is RAM?

RAM is an acronym for Random Access Memory. Random access means that the computer can use any part of it with equal ease, and without having to go through unwanted parts before getting to the desired part. (The traditional counter-example is a reel of magnetic tape, which you have to rewind or fast-forward until you get to the part you want.) Over time and in connection with microcomputers, the term has picked up additional connotations. RAM means memory that can be both written to and read by the computing circuits directly. RAM means electronic memory, usually on integrated circuit chips, that's wired or plugged into the computer. It excludes magnetic and optical media (such as disks) and other permanent memories (such as ROM's).

An amount of memory is measured in bytes. One byte of memory is little more than enough to remember one specific printable character, such as the small letter 'p.' Clearly this isn't very much. More typically, memory is measured in kilobytes (KB), megabytes (MB), or gigabytes (GB). While the prefixes kilo-, mega-, and giga- generally mean a thousand, a million, and a billion respectively, in the context of binary computers, they most often mean slightly more (powers of 1024, rather than powers of 1000).

A rule of thumb with computer memory is that it can be fast or cheap, but not both. If a floppy disk is cheap storage, RAM is fast storage. RAM is where a computer will usually put the programs and data that it's currently working on. But it's only temporary. With the kind of RAM that Macintoshes use, when you turn off the power, the information stored there disappears.

The Macintosh operating system allocates the use of the RAM installed in the machine. Some amount of RAM is required for the operating system itself. Some is required for the System Extensions (a.k.a. CDEV's, INIT's, etc.) that you install, and some is required for the caches you specify in the Control Panels (such as the disk cache and the ATM font cache). All of these together are reported to you as "System" memory when you invoke the "About the Finder..." menu item. The rest of RAM is divided up for the use of the programs you run. The amount each program gets is determined when you select the program using the Finder (so that its icon is highlighted) and invoke the "Get Info" menu item. In that dialog, you see the minimum amount of RAM than the program requires, and you can set a larger amount of RAM that you want it to have.

More RAM means that you can use more System Extensions, have larger caches (which may make some things run quicker), have more applications active at the same time, and give each the room to have open more and larger documents. Every time a new version of the operating system or a program product comes out, it usually requires more RAM than its predecessor did. People find they run out of RAM for the same reasons that they run out of closet space.

How Much RAM Can I Have?

The answer depends on three things: the model of Macintosh you have, the operating system you are running, and largest capacity SIMM you can install.

The 68000 based models (the Plus, SE, and Classic) are limited to four MB of RAM. Macintosh II models are generally limited to eight MB of RAM under the older versions of the operating system (System 6 and earlier). However, System 7 and A/UX allow more RAM to be used, provided the hardware will accept it and your software is "32-bit clean." (The Mac II and IIx are still limited to eight MB on the main circuit board because they predate and cannot use 4-MB SIMM's–Single In-line Memory Modules. However, nuBus memory cards are a slightly slower alternative.)

The SE/30, II, IIx, and IIcx contain programming in ROM that isn't 32-bit clean. To use more than 8 MB with System 7 on these models, you have to place an extension called MODE32 in the System folder. Apple bought the rights to this software and is encouraging its widespread free distribution. You can get it for free from the WAP bulletin board, the TCS, as well as many other electronic sources.

The accompanying configuration chart (see page 38) provided by Apple, states the possibilities allowed by the hardware (though the software may impose a lower limit). When 16-MB SIMM's become widely available, the maximum amount of RAM that can be installed in these models may increase: Mac SE/30, IIcx, IIci, IIfx, and Classic II to 128 MB; Mac IIsi to 65 MB; Quadra 700 to 68 MB; and Quadra 900 to 196 MB. Because of space limitations, the Quadras may not be able to accept standard 16 MB SIMM's.

How Much RAM Do I Need?

Those who remember when the 512K Mac was an ample machine will be shocked to hear that System 7 isn't happy in any machine with under two MB. And that's before you start running programs. MacDraw Pro requires at least one MB, two MB for the smallest color monitor. Excel 3.0 requires 1.5 MB.

Today, four MB of RAM is a conservative configuration. Fortunately, four 1-MB SIMM's cost under $150. Eight MB in a Mac II is not uncommon. Beyond that, the decision should be based on how the Mac is used, whether memory is a limitation in your work. If you insist on keeping many applications open at the same time, or if you have to manipulate large documents, it's time to order 4-MB SIMM's (and to sell your old 1-MB SIMM's to another Pi member).

Adding More RAM

For most Macs, RAM comes packaged in SIMM's. These plug into sockets on your computer's circuit board. If you want to increase the amount of RAM in your computer, you may either put more SIMM's into empty sockets or replace the old SIMM's with larger capacity ones. However, each Macintosh model has a limit of how much memory it can use, whether or not bigger SIMM's become available.

As you might expect, there are many different kinds of SIMM's sold. They differ in size and shape, as well as in electronic characteristics. However, the two things that people usually mention first are capacity and speed. Capacity is measured in kilobytes or megabytes. The earliest SIMM's held 256 KB of data, 1-MB followed by 4-MB parts, and now 16-MB SIMM's are becoming available in small quantity. Their speed is measured in nanoseconds (ns), which is how quickly the manufacturer guarantees that the data can be read after the processor demands it. (The actual value is always faster, but it's unstable and drifts around.) In general, when manufacturers put more and smaller transistors on their chips, they both hold more data and become faster as well. 256-KB SIMM's are generally rated 150 or 120 ns. Generally, 1-MB SIMM's are rated 100 or 80 ns.

When a hardware engineer calls for a certain speed rating, it's a minimum requirement. Faster SIMM's (with a smaller ns number) will work equally well, but not any better. Since the microprocessor has no way of knowing when the RAM chips are actually done retrieving the data, it will wait the allotted time even if the RAM is finished sooner. Contrary to popular myth, you *can* mix rated speeds even within a "bank," provided that *all* the SIMM's installed are at least as fast as the specification.

Most Macintoshes use the same size and shape of SIMM. The IIfx is an exception–it uses the same special type that the LaserWriter II NTX does. (More memory in a printer allows the use of more fonts and more complex page images. Note: The newer LaserWriter IIf and IIg use the same type of memory as does the Mac IIci.) The Portable and the PowerBooks also have different requirements. Additionally, some Macs, such as the LC and the Quadras use a special kind of RAM for the video image that shows on the monitor. This, too, is of variable size-installing more allows for more colors or a larger monitor.

SIMM's sold for IBM-PC type computers have nine chips on each SIMM: eight for data and one for parity (error detection). SIMM's sold for Macs almost always have only eight chips on each SIMM, because most Macs don't do parity checking. The exception is the parity version of the IIci, which requires 9-chip SIMM's. While you can use 9-chip SIMM's in other Macs without problems, their extra cost without benefit means that few people do.

If you buy RAM at an Apple dealer, they will install it for an additional fee. Other computer stores can give you the option of installing it yourself. Then again, most people who intend to install their own RAM will buy it mail-order. Any reputable dealer will sell you the kind appropriate for your model of computer. You can get many vendor recommendations from other Pi members at meetings and on the TCS. Prices change often, usually downward, and many members do a good job of knowing the current market prices.

Installing it yourself is easier to do than to explain, with a few notable gotchas. If you are replacing older SIMM's with larger ones, you have to use care while removing the old ones. It's easy to break the locking tabs on a socket, which may require an expensive board-swap to correct. While installing the new ones, you have to take some care to hold them by their sides away from the metal wires and contacts to avoid damaging them by static electricity. (While grounding straps are often recommended, other methods of avoiding static buildup work too-such as resting a hand or wrist on the chassis.) On older Macs, such as the Plus and SE, a special tool–a very long handled Torx wrench–is required to open the case. One reason for making it difficult is that the CRT (cathode ray or picture tube) can retain a lethal electric charge even after the computer has been unplugged. Further, these older models may have jumpers that have to be moved or wires that have to be cut when the RAM configuration is changed. It's a very good idea to readjust the voltage from the power supply after changing RAM on these machines, too. Finally, on most Macs it makes a difference which SIMM's go into which socket if not all sockets are filled with the same capacity SIMM.

Help is Available

RAM installation really isn't as difficult as it sounds. From time-to-time, based on demand, WAP organizes sessions where the experts help the novices. The most-recent Memory Upgrade Workshop was on January 7 at the office. A $5 donation to the club is usually requested if you receive help during a workshop. Call the office to find out

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RAM Configuration Chart

All numbers are expressed in terms of megabytes (MB) unless otherwise noted.

Comp.	On Board RAM	Number of SIMM slots	Acceptable SIMM sizes	Possible RAM Installations	Req. Speed
Plus	0	4	256K,1	0.5,1,2,2.5,4	150 ns
SE	0	4	256K,1	0.5,1,2,2.5,4	150 ns
Classic	1	2 *	256K,1	1,2,2.5,4	150 ns
Classic II•	2	2	1,2,4	2,4,6,10	100 ns
SE/30	0	8	256K,1,4	1,2,4,5,8, 16,17,20,32	120 ns
II	0	8	256K,1 **	1,2,4,5,8	120 ns
IIx	0	8	256K,1 ***	1,2,4,5,8	120 ns
IIcx	0	8	256K,1,4	1,2,4,5,8, 16,17,20,32	120 ns
LC•	2	2	1,2,4	2,4,6,10	100 ns
IIsi•	1	4	256K,512K,1,2,4	1,2,3,5,9,17	100 ns
IIci•	0	8	256K,1,4	1,2,4,5,8, 16,17,20,32	80 ns
Portable	1	0 †	n/a	1,2,3,4,5,6, 7,8,9 §	n/a
IIfx•	0	8	1,4	4,8,16,20,32	80 ns
Quadra 700•	4	4	1,4	4,8,20	80 ns
Quadra 900•	0	16	1,4	4,8,12,16,20, 24,28,32,36, 40,48,52,64	80 ns
PowerBook 100		2	0 † n/a	2,4,6,8	n/a
PowerBook 140•		2	0 † n/a	2,4,6,8	n/a
PowerBook 170•		4	0 † n/a	4,6,8	n/a

the dates of future classes. You must bring your own SIMM's.

There are additional documents that do-it-yourselfers may consult. Apple's Macintosh Technical Note #176 gives detailed descriptions of the correct RAM configurations in all models, with illustrations. Connectix Corporation, publishers of MODE32, have written "The Macintosh Memory Guide." Both documents are freely distributed, and they can be downloaded from the TCS as well as many other electronic sources. You can get a printed copy of the Connectix document free by calling them at 1-800-950-5880. However, the Pi office can send you printed copies of both documents for a $5 copying and mailing charge. Call 301-654-8060.

Configuration Chart Notes

* The Macintosh Classic has one MB of RAM soldered onto the motherboard. Additional RAM can be added by using an expansion card. Apple's Macintosh Classic 1-MB Memory Expansion Card has one MB of additional RAM and two SIMM connectors.

** The Macintosh II ROM start-up code does not know about 4-MB SIMM's and will not normally allow the Mac to start up. A replacement ROM is available as part of the HDFD "Superdrive" floppy disk upgrade kit. Otherwise, special 4-MB SIMM's (see ***) may be used only in bank B.

*** While the Macintosh IIx ROM does know about 4-MB SIMM's, standard 4-MB SIMM's will not work on a IIx because the hardware design predates and is incompatible with necessary specs. Special SIMM's are available from some vendors.

† The Macintosh Portable and the PowerBook computers allow you to add RAM by using an expansion card. These expansion cards can have from one to four MB of memory for the Portable (one to three MB for the backlit portable), and two, four, or six MB for the PowerBook line.

§ If the PDS slot is used for other peripherals, the maximum amount of RAM for the Macintosh Portable is five MB (four MB for backlit Portable), using a RAM expansion card.

• These systems have ROM's capable of 32-bit addressing (when using System 7). This allows them to use more than eight MB of memory. (The ROM's don't limit A/UX, for the machines that run it.)

Apple II*

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ProDOS	
John Love	(703) 569-2294
John Wiegley after 2:15	(703) 437-1808
ProDOS 8 and 16	
Barry Fox	(717) 566-6709
RWTS, Disk structure	
John Wiegley after 2:15	(703) 437-1808
Print Shop	
Thomas O'Hagan	(301) 593-9683

SPREADSHEETS

General	
Walt Francis	(202) 966-5742
MagicCalc/SuperCalc2.0	
Leon Raesly (days; 9-5)	(301) 220-3113
Telecommunications	
Dale Smith	(301) 762-5158
Allan Levy	(301) 340-7839
TimeOut Serles	
Morgan Jopling	1(301) 721-7874
Utilities:ProSel	
Barry Fox	(717) 566-6709

WORD PROCESSORS

General	
Walt Francis	(202) 966-5742
Apple Writer II	
Dianne Lorenz	(301) 530-7881
Leon Raesly (days; 9-5)	(301) 220-0717
AppleWorks GS	
Roger Burt	(301) 424-6927
A.D. (Bill) Geiger	(703) 237-3614
Andy Gavin	(703) 734-3049
Letter & Simply Perf	
Leon Raesly (days; 9-5)	(301) 220-3113
Mouse Write	
Barry Fox	(717) 566-6709
Publish–It!	
Gary Hayman	(301) 345-3230
Ray Settle	(301) 647-9192
ScreenWriter II	
Peter Combes	(301) 251-6369
Gene Carter	(202) 363-2342
Word Perfect	
James Edwards	(301) 585-3002
Henry Donahoe	(202) 298-9107
Word Star	
Art Wilson	(301) 774-8043

Apple IIGS*

Paul Tarantino (before 10pm)	(703) 451-5608
Neil Laubenthal	(703) 691-1360
A.D. (Bill) Geiger	(703) 237-3614

GENERAL

Barry Fox	(717) 566-6709
IIe Upgrade	
Morgan Jopling	(301) 721-7874
APW	
Andy Gavin	(703) 734-3049
Leon Raesly (days; 9-5)	(301) 220-3113
Deluxe Paint II	
Rich Sanders	(703) 450-4371
GS BASIC	
Barry Fox	(717) 566-6709
Multiscribe GS	
Ray Settle	(301) 647-9192

TELECOMMUNICATIONS

Dale Smith	(301) 762-5158
Allan Levy	(301) 340-7839
Bob Sherman	(305) 944-2111
MouseTalk	
Dale Smith	(301) 762-5158
Ray Settle	(301) 647-9192
TimeOut Series & Utilities: ProSel	
Ray Settle	(301) 647-9192
Barry Fox	(717) 566-6709
816 Paint/Writ'rs Ch.El	
Andy Gavin	(703) 734-3049
Apple II Hardware Epson printers, hard drives,	
Guy Durant	(202) 363-0366
Wayne Meckling	(301) 263-4053
Apple II printing	
Bob Sherman	1(305) 944-2111

Apple III*

GENERAL

Jim Jutzin	(703) 790-1509
Dave Ottalini 9:00-10:30 P.M.	(301) 681-6136
3 Easy Pieces	
Robert Howe	(916) 626-8198
David/Joan Jernigan before 9 pm	(703) 822-5137
Word Juggler	
Tom Linders	(408) 741-1001
J. Carey McGleish evenings	(313) 332-8836
Pascal	
Dr. Al Bloom	(703) 951-2025
Apple Speller	
Robert Howe	(916) 626-8198
AppleWriter	
Eric Sheard	(908) 782-6492

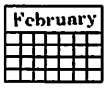
Beagle Buddies

MARYLAND

Ray Settle (Annapolis)	(301) 647-9192
Scott Galbraith (Frederick)	(301) 865-3035
W. T. Cook (Columbia)	(301) 995-0352
Gary Hayman (Greenbelt)	(301) 345-3230
Lee Raesly (Adelphi)	(301) 220-3113
Allan Levy (North Potomac)	(301) 340-7839
Don Avery (Bethesda/DC)	(202) 362-1783

VIRGINIA

Kenneth De Vito (Alexandria)	(703) 960-0786
Neil Laubenthal	(703) 691-1360



FEBRUARY

3 Monday
7:00 PM PI SIG ..... office

5 Wednesday
7:30 PM dPub SIG ..... PEPCO
7:30 PM Mac Programmers ..... office

6 Thursday
7:00 PM Columbia Slice ..... Mt. Hebron H.S.
7:30 PM GameSIG ..... office

8 Saturday
9:00 AM Annapolis Slice ..... Severna Park
10:00 AM Frederick Slice ..... Frederick

10 Monday
7:00 PM-10PM ..... Intro to the Macintosh (Part 1)

11 Tuesday
7:00 PM-10PM ..... Using Claris FileMaker Pro

12 Wednesday
7:30 PM Board of Directors Meeting ..... office
7:00 PM Telecomm SIG ..... office
7:15 PM Databases (Mac) SIG ... CSC (Merrifield)

13 Thursday
8:00 PM Stock SIG ..... office

15 Saturday
7:00 AM-NOON ..... Intro to Telecommunicationss

17 Monday
7 PM-10PM ..... Intro to the Macintosh (Part 2)

18 Tuesday
Writers' Deadline—April Issue
Ad Space Deadline—April Issue

19 Wednesday
7:30 PM Excel SIG ..... office
7:30 PM Fed SIG ..... call
7:30 PM HyperTalk SIG ..... Arlington

20 Thursday
7 PM-10PM Intro to the Excel 3.X (Part 1)

22 Saturday
8:00 AM AppleWorks SIG ..... call
9:00 AM WAP Gen. Mtg., Holiday Inn, Bethesda (see p.67)

24 Monday
7:00 PM Apple IIGS SIG .. Dolley Madison Library
7 PM-10PM ..... Intro to the Macintosh (Part 3)

26 Wednesday
Editors' Deadline—April Issue

27 Thursday
7:30 PM Ed SIG ..... office

29 Saturday
9 AM-NOON ..... Intro to the WAP TCS

Meeting Notices

Annapolis Slice —2nd Saturday; Severna Park Library on McKinsey Road (off Rt. 2) Severna Park, MD, 9:00 AM.

Apple IIGS SIG —normally the Monday after the regular WAP meeting; alternates between Dolley Madison Library in McLean (even months) and (NEW) NIH (Building 31, C Wing, 6th Floor, Conference Room 9) in Bethesda at 7:00 PM (odd months). Call Gary Hayman, (301) 345-3230, for information.

Apple III SIG —please call SIG chair for details.

AppleWorks SIG —at 8:00 AM, just prior to the regular WAP meeting.

Columbia Slice—1st Thursday; for the months of January, February and March the Columbia Slice will meet at Mt. Hebron High School.

Databases (Macintosh) SIG—Second Wednesday of each month (runs from 7:15 PM to about 9:45 PM); Computer Sciences Corporation, 3160 Fairview Park Drive, Merrifield, VA. Just inside the Beltway at the junction of US 50 (VA) and the Beltway.

dPub SIG (desktop publishing) —1st Wednesday; PEPCO Auditorium, 1900 Pennsylvania Ave., N.W., 7:30 PM.

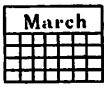
Ed SIG (Educational programs) —4th Thursday at the WAP office, 7:30 PM.

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

Fed SIG (Federal)—3rd Wednesday; alternates between Falcon Training Center, 1745 Jefferson Davis Hwy., Suite 502, Crystal City, and Apple Fed. Sys. Office, 1892 Preston White Dr., Reston, VA, 7:30 PM. Call Jim Manley, (703) 490-1034, to confirm location.

February

SU	*MO*	*TU*	*W*	*TH*	*FR*	*SA*
						1
2	*3*	*4*	*5*	*6*	*7*	*8*
9	*10*	*11*	*12*	*13*	*14*	*15*
16	*17*	*18*	*19*	*20*	*21*	*22*
23	*24*	*25*	*26*	*27*	*28*	*29*



Meeting Notices

Frederick Slice—2nd Saturday; at the library at 110 East Patrick Street, Frederick, MD, 10:00 AM.

Game SIG—1st Thursday; WAP office, 7:30 PM.

HyperCard SIG—currently dormant.

HyperTalk SIG—3rd Wednesday; at the Fairlington Community Center, 3300 South Stafford Street, Arlington, VA, 7:30 PM.

Mac Programmers—1st Wednesday; WAP office, 7:30 PM.

PI SIG (Programmer's Interface)—1st Monday, 7:00 PM (except for Monday holidays). Call Ted Meyer (703) 893-6845, for date, time and location.

Stock SIG—2nd Thursday; WAP office, 7:30 PM.

Telecomm SIG—2nd Wednesday, WAP office, 7 PM.

WAP General Meetings- Meetings are held the fourth Saturday of the month. We are looking for a regular meeting place with two meeting rooms; one holding around 50 people and the other around 250 people. Contact Beth Medlin at (301) 654-8060 if you know of a suitable location.

The February 22 and the March 28 General Meeting will be at the Holiday Inn, Bethesda, Maryland. See the map on page 67 for directions to the Holiday Inn.

Notice: Anyone having information on changes to the WAP Calendar is requested to call the Calendar Editor, Peter Cook at (301) 585-7651 or Beth Medlin at the WAP office, (301) 654-8060.

March

SU	*MO*	*TU*	*W*	*TH*	*FR*	*SA*
1	*2*	*3*	*4*	*5*	*6*	*7*
8	*9*	*10*	*11*	*12*	*13*	*14*
15	*16*	*17*	*18*	*19*	*20*	*21*
22	*23*	*24*	*25*	*26*	*27*	*28*
29						

MARCH

2 Monday
7:00 PM PI SIG ..... office

4 Wednesday
7:30 PM dPub SIG ..... PEPCO
7:30 PM Mac Programmers ..... office

5 Thursday
7:00 PM Columbia Slice ..... call
7:30 PM GameSIG ..... office

11 Wednesday
7:00 PM Telecomm SIG ..... office
7:15 PM Databases (Mac) SIG .... CSC (Merrifield)
7:30 PM Board of Directors Meeting ..... office

12 Thursday
8:00 PM Stock SIG ..... office

14 Saturday
9:00 AM Annapolis Slice ..... Severna Park
9AM -12PM Intro to Quark Express (Part 1)
10:00 AM Frederick Slice ..... Frederick

18 Wednesday
7:30 PM Excel SIG ..... office
7:30 PM Fed SIG ..... call
7:30 PM HyperTalk SIG ..... Arlington

20 Friday
7PM-10PM Intro to the Macintosh (Part 2)

Writers' Deadline—May Issue

Ad Space Deadline—May Issue

21 Saturday
7:00 AM AppleWorks SIG same as WAP Mtg.
9:00 AM Gen. Mtg., Holiday Inn, Bethesda (see p. 57)

23 Monday
7PM-10PM Intro to the Macintosh (Part 3)
7 :00 PM Apple IIGS SIG

26 Thursday
7:00 PM Intro to PageMaker ..... Mt. Hebron ,HS
7:30 PM Ed SIG ..... office

Editors' Deadline—May Issue

30 Monday
7:00 PM Apple IIGS SIGNIH Bldg. 31, C-Wing, 6th Floor, Conf. Rm. #9.

Macintosh

GENERAL

Jeff Alpher to midnight (301) 630-2036
Art & Video
Nancy Seferian (202) 333-0126
Borland Products
Doug Ferris day only (800) 826-4768

DATABASE PROGRAMS

Fourth Dimension
Bob Pulgino (301) 474-0634
Peter Yared (301) 564-1560
FileMaker Pro
Tom Parrish (301) 654-8784
Mort Greene (703) 522-8743
Paula Shuck bef.10pm (301) 740-5255
Helix
Jim Barry to midnight (703) 662-0640
Harvey Levine (301) 299-9380
Double Helix
Paula Shuck before 10pm (301) 740-5255
MS-File
John Spencer (301) 730-1084
Mort Greene (703) 522-8743
Omnis 3 & 3+
Jeff Alpher to midnight (301) 630-2036
OverVue
J.T.Tom DeMay, Jr. (301) 461-1798
Tom Parrish (301) 654-8784
Pro-Cite
Elizabeth Mangan (703) 750-2710

DESKTOP PUBLISHING

General
Jay Rohr (301) 655-0875
Freddi Galloway (V/TTY) (703) 768-5315
ReadySetGo
Jim Graham (703) 370-5737
Marty Milrod (301) 464-5981
Freddi Galloway (V/TTY) (703) 768-5315
PageMaker
Mort Greene (703) 522-8743
Quark Xpress
Ron Mann (202) 333-3409

GRAPHICS

General
Bill Baldridge (301) 779-8271
Jay Rohr (301) 655-0875
Adobe Illustrator
Ling Wong (703) 378-5102
Canvas
Bill Baldridge (301) 779-8271
Tom Parrish (301) 654-8784
MacDraw
Tom Berilla (301) 434-3256
Tom Parrish (301) 654-8784
John Spencer (301) 730-1084
ImageStudio
Mort Greene (703) 522-8743
Studio/1
Jamie Kirschenbaum evenings (703) 437-3921
SuperPaint 2.0
Mort Greene (703) 522-8743
VideoWorks
Mort Greene (703) 522-8743

PROGRAMMING

Inside Mac
Jon Hardis (301) 330-1422
John Love (703) 569-2294
Pascal
Michael Hartman (301) 445-1583

SPREADSHEETS & CHARTS

General
David Morganstein (301) 972-4263
Bob Pulgino (301) 474-0634
Tom Cavanaugh (301) 627-8889
Excel
David Morganstein (301) 972-4263
Mark Pankin (703) 524-0937
Jim Graham (703) 370-5737
Dick & Nancy Byrd (703) 978-3440
Bob Pulgino (301) 474-0634
Tom Cavanaugh (301) 627-8889
Paula Shuck before 10pm (301) 740-5255
Kirsten Sitnick (301) 750-7206
Mort Greene (703) 522-8743
WingZ
Kirsten Sitnick (301) 750-7206

TELECOMMUNICATIONS

General
Allan Levy (301) 340-7839
CompuServe
Michael Subelsky (301) 949-0203

WORD PROCESSORS

Microsoft Word
Marty Milrod (301) 464-5981
Harris Silverstone (301) 435-3582
Tom Cavanaugh (301) 627-8889
Freddi Galloway (V/TTY) (703)768-5315
Kirsten Sitnick (301) 750-7206
ThinkTank-More
Jim Graham (703) 370-5737
Tom Parrish (301) 654-8784
Hebrew Word Processing
Tim Childers (301) 997-9317
Curt Harpold (202) 547-8272
Microsoft Works
Amy Billingsley (301) 622-2203
WordPerfect—Mac
Curt Harpold (202) 547-8272

MISCELLANEOUS

MacProject
Jay Lucas (703) 751-3332
Norbert Pink (703) 759-9243
HyperCard
Rick Chapman (301) 989-9708
HyperTalk
John O'Reilly (703) 204-9332
File Transfer
Mort Greene (703) 522-8743
Backfax
Mort Greene (703) 522-8743
HyperCard Scripting
Jamie Kirschenbaum evenings (703) 437-3921
SoundEdit
Jamie Kirschenbaum evenings (703) 437-3921

General

Games-Apple II
Charles Don Hall (703) 356-4229
John Wiegley after 2:15 (703) 437-1808
IBM
Leon Raesly (301) 220-3113
Math-OR Applns
Mark Pankin (703) 524-0937
Modems-General
Allan Levy (301) 340-7839
Hayes Smartmodem
Bernie Benson (301) 951-5294
Practical Peripherals
Allan Levy (301) 340-7839
Prlnters-General
Walt Francis (202) 966-5742
Leon Raesly (301) 220-3113
MX-80
Jeff Dillon (301) 662-2070
Stat Packages
David Morganstein (301) 972-4263
Stock Market
Robert Wood (703) 893-9591
MS/DOS
Tom Cavanaugh (703) 627-8889
Dvorak Keyboard
Ginny & Michael Spevak (202) 244-8644

Frederick Apple Core Help Line

Please limit calls to reasonable evening and weekend hours and **NEVER** after 10 P M.

Oscar Fisher	(Frederick)	694-9237	Apple *II*, *GS*
Dick Grosbier	(Frederick)	898-5461	Apple *II*, GS, & Mac
Harold Polk	(Frederick)	662-6399	Apple *II*
Tony Svajlenka	(Frederick)	694-6209	Apple *II*
Doug Tallman	(Frederick)	663-3268	Mac
Scott Galbraith	(Monrovia)	865-3035	Apple *II* & GS
J. Russell Robinson	(Frederick)	739-6030	Mac

Software Review

EndNote Plus

by Dan Wages

It is possible to write a doctoral dissertation or other document which requires numerous footnotes and a bibliography with a word processing program alone. You just click for the footnote in the proper spot, and, when the footnote window comes up, you type in your reference. When you've finished the dissertation, you type up your bibliography in the correct format and add it to the end.

With EndNote Plus there's less typing, a more consistent result, and an easy to use catalog of all references that can be printed out in an almost infinite number of customizable ways. With a minimum of Mac know-how, you can do things with EndNote Plus that even its developers haven't thought of—or, at least, have not mentioned in the manual.

I did not use the program as the authors intended, rather I have adapted it or customized it to the needs of my wife and myself. This in itself should give you a pretty good idea of whether or not the program would be useful to you. Customizing the program is not difficult, and the manual is clear enough to make such adaptations easy.

My wife is in the throes of writing a doctoral dissertation at the University of Maryland in the Art History department. She obviously has to keep a record of all the books, articles, museum catalogs, and other sources which she then uses in footnotes as well as in the bibliography. The University of Maryland — picky, picky — is very strict about the format of these various entries: different bibliographical entry styles for books, journals, catalogs, etc.: one style for the first citation of a work in a footnote; a different style for subsequent citations. EndNote Plus helps tremendously.

Let me illustrate the flexibility of EndNote Plus by simply describing how I customized the program for her use, and how she is now using it.

A new reference, with all pertinent detail, is entered by clicking "New" in the Reference menu. A pop-up menu lets you select the type of reference; however, the list does not include museum catalogs or exhibition catalogs—important sources for her. No problem. The reference types can be edited for individual needs and re-named.

Each reference type can have up to 27 customizable fields for abstracts, notes, etc. My wife uses one field for library call numbers, and, before a visit to the library, she prints out a selected group of books with just author, title, and call number without extraneous data.

The References form the basic database, and they

EndNote Plus Overview

The publishers describe EndNote Plus as a Reference Database and Bibliography Maker. It is that and, with a minimum of Macintosh expertise, it can be customized by the user to put in footnotes in whatever style is required. It is useful to anyone who writes papers which require either a bibliography, footnotes, or both. It can be used either as a Desk Accessory or as a separate application under Multifinder and is compatible with MSWord, MacWrite II, and Word Perfect.

System requirements: 512K or more, System 2 or higher.

Publisher: Niles & Associates, Inc., 2000 Hearst St., Berkeley , CA 94709.

List Price: $249. Available from mailorder houses for as little as $145.

contain everything you are likely to need to know about the sources you are using. From the information in the References, the program will, on command, extract the needed data and print a bibliographic entry in the proper format for the style selected. Twelve pre-set standard bibliographical styles, i.e., Chicago, MLA, Science, APA, come pre-packaged with the program. Check the style that you want and all entries will be printed in that style until you change it.

If none of the pre-packaged styles suit your needs, they can be edited. I found that throwing away the styles that she didn't need made the menu shorter and much easier to use. When you customize the styles, you can specify the typography and punctuation. In other words, you can print the author's name in plain type, the book title in italics or in quotes, as you wish, and it comes out that way.

Although EndNote Plus can operate as a DA, it's a much slower process than using it under MultiFinder. As you're typing and come to a point where a footnote is needed, you open the footnote window and switch through MultiFinder to the library that you have created. Once you get to the library, you'll see a scrollable window listing the entire "library" alphabetically by author. There is only one entry per line, so what you'll really see is the last name of the author, the date of publication, and the beginning of the title. By double clicking any entry, you can see the entire reference with all the information that you've entered.

Once you've selected the entry that you want, click on the proper style in the Style menu, copy and paste it into the word processing program, and the footnote immediately appears in the proper form.

There is also a useful search feature which permits you to search all or specified fields for information. The search dialog box has the Boolean "And," "Or," and "Not," so that you can tailor your search request to fit your personal needs.

Niles & Associates have designed a program flexible enough that you can make it do what you want it to, not what some programmer in California thought you wanted it to do.

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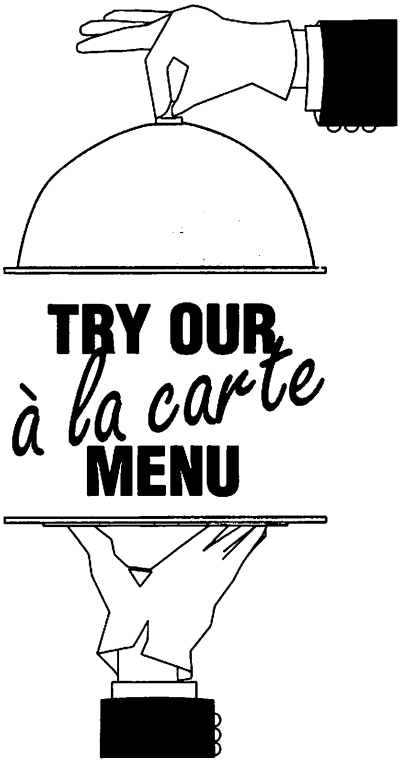

Tutorials and Seminars–February

by Keith Malkin

February Training Classes

By the time we go to press, the Super Bowl will be over, marking the end of the NFL season. For those of you suffering withdrawal from pro football and various stages of Redskin Fever, why not gain some ground on the field of Macintosh computing? We feature telecommunications courses this February with an Introduction to Telecommunications and Bulletin Board Systems (BBS) and Using Washington Apple Pi's Telecommunications System (TCS). For anyone starting out in telecommunicating or considering the purchase of a modem and software, we highly recommend these courses. For every new member of the Pi (new either to the club or the TCS), we think the TCS course is an important introduction to reaping the full benefits of the club's excellent communications service. We will also offer our three-part Introduction to the Macintosh, and courses on Claris FileMaker Pro and Microsoft Excel. We are working on courses covering Adobe Illustrator, Acius 4th Dimension, and other subjects as we go to press, so please call for the latest information. Don't forget two essential courses on the Macintosh still available and scheduled for late in January: Using System 7, on January 29 (Wednesday, 7-10 PM) and Maintaining Your Macintosh, the following evening, January 30 (Thursday, 7-10 PM). Call the office for availability and registration information.

Occasionally, the WAP class schedule changes due to conflicts or other circumstances beyond our control. You should verify your registration and the class schedule to avoid the inconvenience associated with class cancellations, etc. So please call Bob Morris at (301) 963-3129(h) or Keith Malkin at (703) 503-8591. We will answer to the best of our ability any of your questions on the latest WAP class schedule, instructors, location, and the like. However, we cannot take your registration over the phone. For registration purposes, directions, refunds, and general information, you must call the WAP office. Please call Beth Medlin in the office at least one business day before the class date to confirm that your class will be held as scheduled. We cannot call you! We sincerely regret any inconveniences that may arise due to scheduling changes.

Payment for Courses

The fees for most sessions (unless otherwise indicated) are fifteen dollars ($15) for members, twenty dollars ($20) for non-members. SIG-based fees may vary. Please register well in advance for the class or classes you wish to take by either sending in the registration form (which can be found on page 48) or by phoning your registration into the office with a credit card. If you've signed up for a class and need to cancel, please do so two (2) business days before the class, otherwise we cannot refund your money.

Volunteers and Instructors

We really do need your ideas, comments, or suggestions. Please call or write me at 9505 Draycott Court, Burke, VA 22015-3253, (703) 503-8591. We need your enthusiastic support and creativity to make the Washington Apple Pi Education & Training Program a success. If you have expertise in any area of Macintosh or Apple computing, your fellow users and WAP members need you! We are always looking for knowledgeable, enthusiastic instructors. If you are an experienced Mac user who feels competent in teaching a particular software package, or any subject relating to Macintosh or Apple series computers, please call Bob Morris. If you would like to teach, Bob Morris may be reached at: (301) 963-3129 (h), evenings, or (202) 501-7814 (o), during

the day. (Instructors are compensated for their time, effort, and expense.)

During this new year, we will improve the quality of and expand our training program. We are looking for additional facilities for tutorials and workshops. If you know of a public or private facility (with Macs or Apple computers that we may be able to use) in the metro area (especially Northern Virginia), call me with the particulars.

Macintosh Tutorials (Note: the Introduction to Macintosh series is primarily oriented to users of System 6.0X, but we think all beginning users, even owners of the newer Macintosh models with System 7, will find these courses very useful.)

Introduction to Macintosh, Part I (Course # M10292). This class is designed for the beginning user. You should go through the Guided Tour disk that came with your computer before you come to class. You'll learn each of the components of your Macintosh, both hardware and software. You'll discover what the System, Finder, Icons, the Active Window, and how they all work. You'll also investigate the components of the Control Panel.

Materials required: Your Macintosh, hard disk drive, start-up disk, and an un-formatted disk.

Course Date: Monday, February 10, 1992, 7:00 PM—10:00 PM.

Introduction to Macintosh, Part II (Course # M20292). This class is designed for the beginning user. You should go through the Guided Tour disk that came with your computer before you come to this class. You'll learn each of the components of your Macintosh, both hardware and software. You'll learn the finer points of the Menu Bar, various error messages, what the Clipboard and the Scrapbook are, various peripherals and how they are connected to your Macintosh, and, finally, you'll learn about command key () equivalents (keyboard shortcuts for Menu Bar commands).

Materials required: Your Macintosh, hard disk drive, start-up disk, and an un-formatted disk.

Course Date: Monday, February 17, 1992, 7:00 PM—10:00 PM

Introduction to Macintosh, Part III (Course # M30292). This class is designed for the beginning user. You should go through the Guided Tour disk that came with your computer before you come to this class. You'll learn which version of the System software you should be using; you'll learn how to update your system files; about the Set Start-up command; how to use the Font/DA Mover; learn about MultiFinder; and finally, you'll learn about the various RAM configurations possible with each Macintosh.

Materials required: Your Macintosh, hard disk drive, start-up disk, and an un-formatted disk.

Course Date: Monday, February 24, 1992, 7:00 PM—10:00 PM.

Introduction to Microsoft Excel 3.X, Part 1 (Course #ME10292). For the beginning Excel user, or those wishing to brush up on fundamentals. Topics covered are: the many uses and applications of Excel, Excel window and tools, menus and menu commands, keyboard shortcuts, advanced features, System 7 savvy Excel 3, exercises, and other subjects.

Materials required: Your Macintosh, external drive or hard drive, start-up disk, and a copy of Microsoft Excel, preferably 3.X.

Course Date: Thursday, February 20 1992, 7:00 PM—10:00 PM. Materials required: Your Macintosh, external drive or hard drive, start-up disk, and a copy of Microsoft Excel, preferably 3.x.

Course Date: Thursday, February 20 1991, 7:00 PM—10:00 PM.

Using Claris FileMaker Pro, Part 1 (Course #FMP10292). An introduction to the popular and powerful flat-file database program from Claris will include the basic database management terminology; how to create, change, edit, and sort records; and how to structure, preview, and print reports. (Note: this is a two-part course and a homework project will be assigned at the end of the first class for review and discussion during Part 2, which will be scheduled for March. Part 2 will cover creating and changing layouts and fields, using graphics, formatting reports, and scripting.)

Materials required: Your Macintosh, external drive or hard drive, start-up disk, and a copy of Claris FileMaker Pro.

Course Date: Tuesday, February 11 1992, 7:00 PM—10:00 PM.

Workshops (Workshops are designed to address your individual needs, concerns, and real world problems. It is beneficial to bring your Mac and the relevant software, if you can. However, you will get the full benefit of these classes, simply by attending and participating in them.)

All About Telecommunications; an Introduction to Telecommunications and Bulletin Board Systems (BBS) (Course # TC20292). This class is intended for beginners in Macintosh telecommunications. An overview of telecommunications will be provided, including how to make use of telecommunications, how to "upload" and "download" files, file transfer and translation, teleconferencing, protocols and how computers and modems "talk" to one another, electronic bulletin board systems (BBS's), E-Mail, Macintosh hardware (including modems), software, and on-line services.

Course Date: Saturday, Febru-

ary 15, 1992, 9:00 AM—12:00 NOON

Introduction to the Washington Apple Pi Teleconference System (TCS) (Course # TC10292). This class is designed for telecommunication novices or new WAP members. This is the perfect seminar for those of you wanting to enjoy the many benefits of the WAP TCS. Topics for discussion will include how to apply for a password, sign on, configure a user profile, read messages, leave messages, reply to messages, upload, download, or transfer files and use Librarian.

Course Date: Saturday, February 29, 1992, 9:00 AM—12:00 NOON

Other Educational Opportunities

•The AFI-Apple Computer Center for Film and Videomakers. To receive course descriptions and mailings from the center, which is located in Los Angeles, call (213) 856-7664. For info on joining the American Film Institute, call (800) 999-4AFI.

•Avid Education Services—probably the hottest editing platform in video these days is the Macintosh-based Avid Media Composer. Non-linear editing is the hot, new concept of the day in creative media and knowing the Avid might be your ticket to the bright lights, if you are so inclined. Find out more by calling Avid at (617) 221-6789. (Avid did offer introductory courses in New York in the first part of November. Course fees for three days of intensive, hands-on training, a one-year subscription to Avid's BBS, and a certificate of completion were $350. I am relatively sure that accommodations were extra at that price.)

•The Corcoran School of the Arts has a series of Macintosh graphics courses at its Georgetown campus. For information and mailings call (202) 628-9484.

•The Eastman Kodak Center for Creative Imaging in Camden, Maine

The Center in bucolic Maine offers pricey training on the latest, state-of-the-art Macintosh-based systems. For information on schedules and course offerings call the Center for Creative Imaging at (207) 236-7400 or fax to (207) 236-7490.

•The Sony Video Institute (The Sony Institute of Applied Video Technology, 2021 North Western Avenue, P.O. Box 29906, Hollywood, CA 90029) is offering a number of workshops that may be of interest to Macintosh publishers, digital photographers, film and video makers, multimedia producers, and animators. For information call (213) 462-1987, then #*.

Keep watching the Journal pages for other training opportunities, especially those coordinated by the various Pi SIG's and Slices. I'll try to cover local colleges and universities, and some useful books and publications in the coming months.

Washington Apple Pi
Tutorial Registration Form

Washington Apple Pi
7910 Woodmont Ave., Su. 910
Bethesda, Maryland 20814
301-654-8060

Basic Information

Name _____

Address _____

City/Zip/State _____

Phone (day) _____ (evening) _____

Member Number _____ Non-member _____

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

Check/Money Order ____ Credit Card ____ Card Number _____

Card Expiration _____ Signature _____

WAP Form #CL006 (mod. 7/90) Mail registration and payment to the above address.

Course Numbers

Please fill in the course number of the class(es) that you wish to attend.

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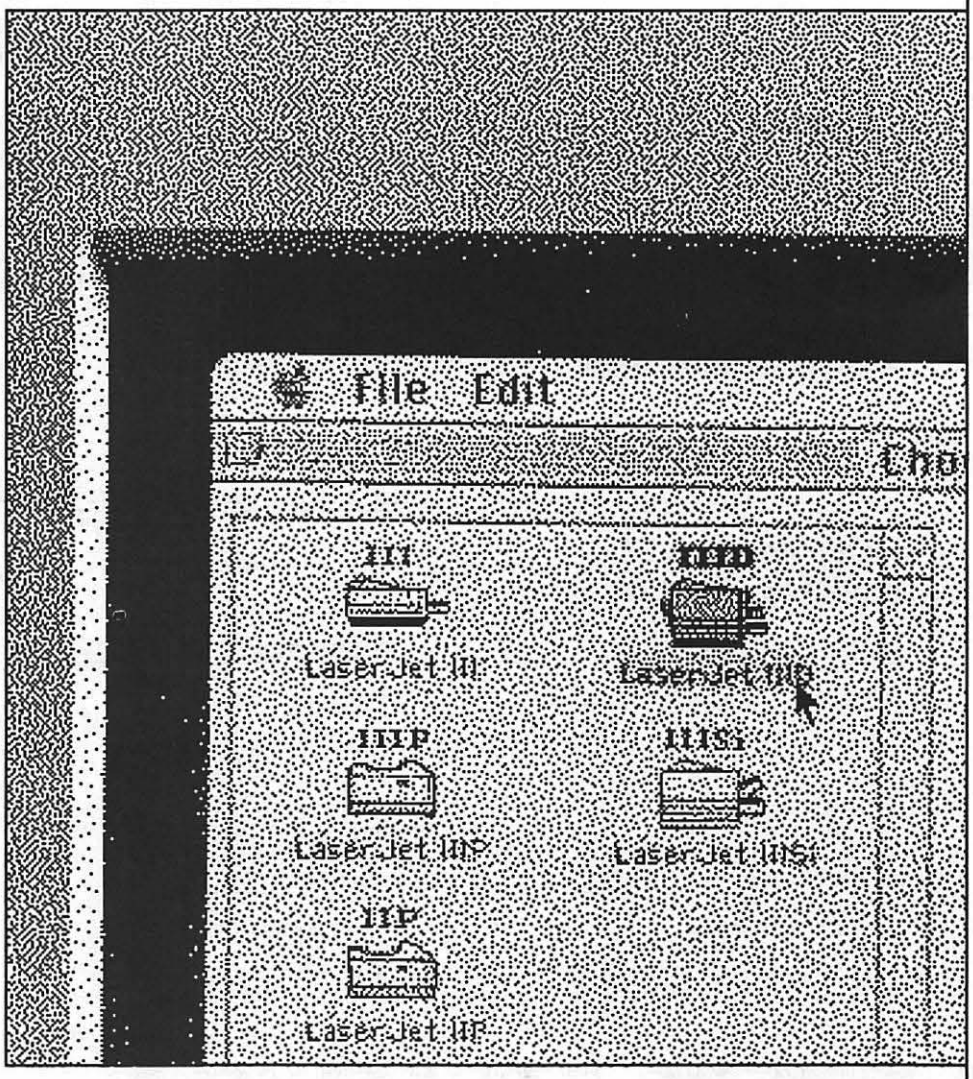


HEWLETT PACKARD

Enhance Your Graphics

by Jim Campbell

Image Processing vs. Image Analysis

If you are a professional in the area of image processing and image manipulation, you already know of many high-priced competitors of ***Enhance*** by MicroFrontier. For the rest of us, a basic understanding of what these terms mean and how we can get involved in image analysis and processing needs to be developed. The line between image analysis and image manipulation is blurring. Analysis focuses on extracting as much data as possible from the image. Such information as density, center of mass, color range and intensity are all items subject to analysis in a variety of areas ranging from medical diagnosis to military intelligence. Image manipulation focuses on retouching or altering the image. ***Enhance*** is a blend of the better features of both of these types of programs.

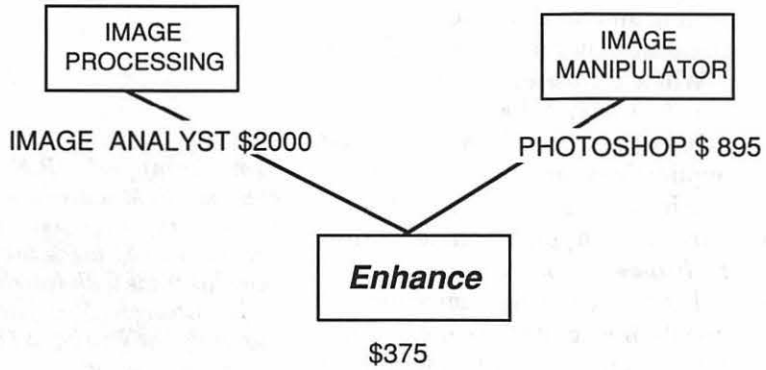
Popular programs such as ***Canvas, Pixel Paint, Adobe Illustrator, SuperPaint, MacPaint*** and similar applications represent the range of programs designed to originate or "paint" the initial graphic. Scanning is also a source of the initial image that can be analyzed or retouched by ***Enhance***. Popular image manipulation programs include ***Digital Darkroom*** and ***Photoshop***, which has just been updated with version 2.0, and ***Image Analyst*** , a high-end image analysis application available on the market.

System Requirements

Enhance does not run on every Macintosh. It runs only on the Mac II family and the SE/30 (not mentioned in the Instruction Book). The system needs a minimum 40 MB hard drive and an 8-bit video card. The easy way to tell if your computer has this video card is to select Monitor from the Control Panel. The selection entitled "256" will appear if the required video card is installed. It will not show up if it isn't.

Menus

Enhance has the normal "pull-down" as well as "tear-off" menus. This means they can be moved around to unused portions of your viewing screen to facilitate ease of use.



Enhance has image processing and image manipulation abilities.

Windows

"Floating" windows are another ***Enhance*** feature. This means that the Tools, Buffers and color palettes "float" on top of the active image. This simplifies your work.

mits four image windows to be open at one time. There can be three image buffers per window and five view windows per image. That's a lot of potential images open on your screen for manipulation. The buffers can be placed side-by-side, on top of one another, or with the destination buffer superimposed on the source buffer.

Tools

There are a wide variety of tools for magnification, selection, painting, histogram, and line profile work. With the magnification tool, you can magnify portions of the image as you move the tool across the image. The "zoom" tool is excellent, easy to use and does a fine job of enlarging or shrinking the image quickly.

Pixel Processing

There is a rich variety of filters—actually close to 80 combinations—that can be applied to the image to change its appearance. A filter is a mathematical approach using such techniques as weighted averages of densities, centers of gravity or other mathematical functions to modify an image. Some common filters are:

Laplacian, high pass filter – enhances very sharp brightness transitions by enhancing the edges or transition in an image.

Low pass filters –removes the sharp white to black transition at the edge and replaces it with a blurred edge.

Edge detection filter–shows very sharp transition and a distinct edge between transitions.

Enhance permits convolution—modifying the existing masks/filters or creating new ones.

Weak Points

The ruler is not self-adjusting or scaling and requires the user to set the scale in order for it to calibrate.

While ***Enhance*** can import/export in PICT, TIFF or text, it can only export EPS. The higher priced applications can import/export in a much large variety of formats. Be sure your application is within ***Enhance's*** capabilities.

The manual is light on examples and the images it offers as examples make it hard to discern exactly what is being done to them as filters are applied against them. For an application that works well in color, the book is totally black and white. Color images would have helped illustrate several of the filter's actions.

Coup d'Oeil

Enhance has the graphics tools equivalent to top notch photo-retouching software at a much lower cost. ***Enhance's*** strength is that it is versatile, has a large variety of user friendly image retouching tools and a healthy sampling of image analysis filters and mechanisms. It lets you do both tasks for a relatively cheap price. So, check your pocketbook, determine what your needs are, and choose wisely!

Enhance has recently released version 2.0. This version offers additional features to enrich the brightness and contrast and to sharpen and enhance the image.

Major Image Manipulation and Image Analysis Applications

PRODUCT	DESCRIPTION	VENDOR	COST
Photoshop 1.0	Powerful photo editing, large import/export capability	Adobe Systems, Inc.	$895
Photoshop 2.0	High end color separator and image editing	Adobe Systems, Inc.	$895; $149 upgrade from v. 10.
Image Analyst	Set up process to identify and analyze elements of an image	Automatix 7.1	$2000
Enhance 1.0	Elements of both an image processor and an image analyst	MicroFrontier	$375

Jim Campbell, P.E., is an enthusiastic Mac user who is always trying to increase personal productivity by using the Mac. He plies his trade with Interlog, Inc. in Falls Church, VA where he is currently the Principal Operations Research Analyst.

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AGS will be opening a new subsidiary in March, 1992, which provides desktop and service bureau services, consulting, and quick copying. Automated Graphic Imaging/Copy Center will be located at 1350 I Street, N.W., Washington.

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Troubleshooting Your Apple II

by Phil Shapiro

In the past few weeks I've had the opportunity to help several families whose Apple II computers were not working properly. To my surprise, I have subsequently developed a reputation as a computer repair person. The honest truth is that I know very little about computer repair.

However, I am comfortable doing simple troubleshooting. And I've come to realize that a little troubleshooting can go a long way in dealing with minor computer problems. Since my experiences might be of help to others, I thought it might be useful to sit down and chronicle them.

The first phone call I received was from an Apple IIe user whose system was inexplicably not working. Before traveling over to his house, I asked him if his computer beeped when he turn it on. He said it did. This fact indicated that his problem was unlikely a power supply problem.

Power supply problems are one of the most common problems of ailing Apple II's. The remedy for a dead power supply is rather straightforward: you replace the dead power supply with a replacement power supply (either new or salvaged from another Apple II). Incidentally, an Apple II+ power supply works fine in an Apple IIe. With so many unused Apple II+'s hanging around, it's not too difficult to scrounge up an extra power supply. The going rate for a second-hand power supply is between $30 and $40.

When I arrived at this fellow's house I found that his computer beeped when it was turned on, but his disk drive didn't start turning. A cursory inspection of his disk drive interface card, in slot six, showed that someone had inadvertently hooked the disk drive cable backwards to the interface card.

The disk drive cable should be hooked up with the cable leading away from the card. His cable was hooked up with the cable leading towards and over the card. With the computer's power switched off, and the power cord removed for extra safety, I gently lifted the cable off the interface card and turned it around into the proper position. After which the computer booted up and operated just fine.

The next family that called me also had an ailing Apple IIe. Bolstered by my first successful computer repair, I sauntered over to their house. They had told me they suspected their disk drive was broken, since the drive spun continuously after the computer was turned on. So I brought along a spare Disk II disk drive to facilitate the troubleshooting. I also carried along an extra disk drive interface card from one of my Apple II+ computers. A spare power supply rounded out my simple troubleshooting kit.

a little troubleshooting can go a long way in dealing with minor computer problems.

First, I tried replacing their disk drive interface card with my card. When I then turned on their computer, their disk drive still kept spinning endlessly. So then I replaced their disk drive with my disk drive. Sure enough, my disk drive sprung right into action. So their malfunctioning disk drive was the sole problem with their computer. The likelihood is that someone tried to remove a disk from the disk drive while the red disk drive light was on (i.e., while the disk drive was still spinning, which means that it is

loading or saving a program). Fixing such a broken drive is no big deal. Most persons handy with such repairs can repair the drive for about $65 or so. (Second-hand Disk II drives can be bought for about $50 to $60, too.)

The third family that called me had an interesting tale to tell. They had bought an Apple IIe system two years ago for use in their business. Six months ago they moved the IIe home, so it could be used for both business and personal purposes. The computer worked fine before the move. But after they set it up at home, they couldn't get it to work. Sounded like the sort of situation that could be remedied with a few minutes of troubleshooting.

Their computer was set up with a pair of 5.25" and 3.5 " disk drives sitting atop their monitor. The computer beeped on start-up, which showed that its vital signs were generally good. The disk drive then spun endlessly, without giving the clunkety-clunk sound of a disk operating system being loaded. (The kids in the family found it amusing that I put my ear close to the disk drive to listen for the disk operating system. They must have thought I accidentally left my stethoscope at home.)

To get a closer look at the computer I took the disk drives off the monitor and placed them beside the computer. Then I lifted the computer's cover off to peer inside. The internal cable hookups looked healthy and secure. On a whim, I decided to try booting the computer with the cover off. To my surprise and delight, the computer booted up beautifully.

Which is when I realized the whole root of the problem. The disk drives were not working properly sitting on top of the monitor because of the electromagnetic interference emanating from the top of the monitor. Computer monitors occasionally give off electromagnetic interference. Such interference can cause mischief with electronic devices located in close proximity to the monitors. Which is why disk drives should never be placed right on top of computer monitors. (For that matter, floppy disks are also in danger when placed on top of computer monitors.)

The quick and easy remedy to such a situation is to move the monitor a short distance away from the device that's being interfered with. In this case, simply moving the disk drives from the top of the monitor to the side of the monitor was enough to cure the malfunction.

At the price of computer repairs these days, it pays to try a little troubleshooting before hauling your Apple II over to the local dealer. If you suspect that it might be your software that's broken, try booting your software on a friend's computer. And if you suspect that your drive or monitor might be malfunctioning, try swapping drives or monitors with a friend. As I've discovered, a little common sense goes a long way.

Computer monitors occasionally give off electromagnetic interference. Such interference can cause mischief with electronic devices located in close proximity to the monitors.

Speaking of repairs, I ought to mention a positive experience I had last year with a mail-order computer repair service. When my Apple IIc needed a motherboard swap last year, I sent it off to Bob Smith at Arminius Publications, in New Jersey. His service was prompt, courteous, and professional. And since he does chip-level repairs, rather than simple board-level swaps, his repair rates are about one-half those you might find locally. If you need serious computer repairs, you can contact Bob at: Arminius Publications, 8519 Orchard Ave., Merchantville, NJ, 08109. (609) 662-3420. (He also does Macintosh repairs, by the way.)

Incidentally, it might be useful to know that Bob's work hours are a little unusual. He services computers at several school districts in the mornings. So he can be reached between 12:00 and 5:00 PM, Monday through Saturday. He also has "after dinner hours" between 6:30 and 10:00 PM.

I ought to mention that opening up the case of an Apple IIc or IIc+ computer is a little more tricky than opening up an Apple II+, IIe, or IIGS. Unless you know what you're doing, it's best to leave such troubleshooting to professionals. Also, before you touch any internals of the computer, it's important that you first touch your finger to the power supply. This procedure will discharge static electricity from your body. Such static can cause much harm to computer chips.

Phil Shapiro

[The author can be reached at (202) 244-2223, or by electronic mail at: GEnie: P.Shapiro1, America Online: pshapiro, Internet: pshapiro@pro-novapple.cts.com]

Converting Magic Window Files to AppleWorks and / or Microsoft Works

by Ray Settle and Frank Winter

Step #1: Converting to ProDos:

1. Obtain a copy of any version of the Apple II program titled Copy II Plus (Referred to as C2+ throughout.)
2. Using C2+, format a 3.5 " disk for Prodos using MW as the volume name. (3.5 " disks are standard on Apple IIGS and Apple IIc+ computers; both are available within the building.)
3. Using C2+, create one subdirectory for each Magic Window disk. Name the subdirectories MW1, MW2, & MW3. This disk should be able to hold as many files as five or six of the 5.25 " disk if you use subdirectories; otherwise, it will only hold 51 files. For easier transfers, only copy about three disks of files to the 3.5 " disk to leave room for the AppleWorks versions of your files later. Use multiple 3.5 " disks with the same names as above for addition Magic Window files.
4. Place your Magic Window data disk into the 5.25 " disk drive.
5. Choose COPY from the C2+ main menu then choose FILES from the next menu.
6. Choose from Slot 6, Disk 1 to Slot 5, Disk 1.
7. Select the files to be copied from the Magic Window disk by pressing RETURN as each is highlighted. Select only those files ending in .MW since any other files are program or initialization files. When all files are selected, press G for GO to begin the copy process.
8. Another screen will appear showing the subdirectories on the 3.5 " disk. Use the arrow keys to highlight a subdirectory to receive your files and press RETURN.

Step #2: Converting to AppleWorks:

9. Start up AppleWorks . At the main menu, select ADD FILES TO DESKTOP.
10. At the next menu, select #3, "Make a new file for the Word Processor."
11. At the next menu select #,2 "From an ASCII text file."
12. Use TAB until your 3.5 " disk with the translated Magic Window files is selected.
13. Select a subdirectory containing the Magic Window files then select a file.
14. Once the file is on the AppleWorks desktop, delete any strange symbols (Magic Window files will have garbage letters and symbols at the top of the page and at any place throughout the document where underline or bold commands were imbedded. Use the REPLACE option to delete these.

15 Save the file as an AppleWorks file with a new name. (perhaps just drop the .MW from the filename.) Hopefully, you left room on the 3.5 " disk to receive these new files; otherwise, you will need another 3.5 " disk. They will be viewed as new files and will not replace the older ones.

16. When the files you want have been saved in AppleWorks format, follow the directions on that Frank gives below to convert them to Microsoft Works.

AppleWorks to Microsoft Works

Use the following steps to transfer files from AppleWorks to Microsoft Works:

1. AppleWorks files should be saved on a 3.5" ProDOS formatted disk using the normal saving process. Do not place the ProDOS disk into the Macintosh disk drive at this time.

AppleWorks Hints

Have you ever put in a wrong spelling in the custom dictionary in AppleWorks 3.0 or QuickSpell and wondered how to get it out? Or, do you have a list of special words you'd like to add?

First, lets look at the file and see how it is constructed. The file is CUST.DICTIONARY, and you will usually find it near your MAIN.DICTIONARY and AppleWorks files.

Use the AppleWorks word processor to see what it is like. 'Load a Text File'; and call it TEMP. Turn on the show codes command OA-Z. You will see that the words are in the order you entered them, they are in capital letters, each word is followed by a carriage return, and there are probably a few duplicates. Now, remove this file.

Now Load a Text File again, but this time into the database. When asked how many fields, tell it one. Call it something like Cust.Diction.AW. The first thing you want to do is sort it, so use OA-A and Return to arrange it in alphabetical order.

Now remove any duplicates, correct any misspelled words, and add any new ones.If you have a list of words you'd like to add, make sure the list is in ALL CAPITALS, and each word is followed by a carriage return. Then 'Print to disk as an ASCII text file'. Next create a new database called Tech.Terms or something like that, importing this text file into it, with a single field. Enter Tech.Terms and copy all these records to the clipboard. Enter Cust.Diction.AW and copy from the clipboard. Sort the newly merged file.

Finally, go to Print, and choose 'Print to disk as an ASCII text file.' Give it the name CUST.DICTIONARY. AppleWorks will say the file already exists and ask if you want to write over if. Answer 'Yes'. Throw away the old Cust.Diction.AW since the next time you will need to import the Custom Dictionary from scratch anyway.

We are now done. With these techniques, you can improve the accuracy of your spell checker, and its speed. as well as quickly and easily add a complete new list of words and technical terms.

2. Unless you use subdirectories, you cannot save more than 51 files to the ProDOS disk.
3. From the desktop, double click on the hard drive to display the files found on the hard drive.
4. Find the Apple File Exchange Folder and double click on it to open.
5 Find and double click on the file called, Works "Works Transporter."
6. Now place your AppleWorks files disk in the Macintosh disk drive.
7. Locate the New Folder button on the side of the screen containing the hard drive information (lower left hand corner) and click once on it. Give the folder a name like AppleWorks files and click once on the OK button.
8 Highlight the file or files to be transferred from your ProDOS disk. Use the scroll bar to find additional files not found in the scroll window.
9. Click once on the Translate button.
10. The files to be copied should change from capital letters to lower case except for the first letter in each word and all periods will be removed. If this does not occur the files are not being translated properly.
11. Quit the program by clicking on File in the Menu Bar and dragging the cursor down to quit or by using command Q.
12. Close the Apple File Exchange Folder window by clicking on the close square.
13. Place a Macintosh formatted disk in the drive. Transfer the files from the hard drive to your disk by dragging the files or folder onto this disk.
14. Double click on your Macintosh formatted disk.
15. Double click on one of the files on your disk. If you were successful in transferring the file, the Microsoft Works program will load into the computer and the file will appear on the screen. NOTE: These files are not real Microsoft Works files until they are saved by Microsoft Works itself; other programs which can import Microsoft Works files will not recognize them as any type of usable file.

Byts and Pyces

by Gary Hayman

This is a regular monthly column which includes Apple II information of the hints, techniques, suggestions, helps, information, news, etc. genre. Information which may not, in itself, warrant a separate article in the Journal but would, nevertheless, be of interest to Apple II readers. You are asked to submit your hints, ideas and suggestions to me for monthly organization and publishing. You may do it via the TCS or direct mail to me at 8255 Canning Terrace, Greenbelt, Maryland 20770. Telephone calls to (301) 345-3230. Please note that this column is often submitted for publication 45 to 75 days prior to its appearance in print.

Apple News

The Apple II will be advertised only for the education market. [As you probably noticed there were] no Christmas ads for the home market. According to Rob Barnes of Apple Inc., some 500,000 units of Apple II's will continue to be produced and sold during and after 1994. But, according to the Apple People's paper, he also told developers that the Apple II's market is education and education only.

The Apple II has a niche in the '90's and that is going to surprise a lot of people. The Apple IIGS is the best multimedia machine on the market. It is a lot easier to develop educational software today using HyperStudio than it was five years ago using Applesoft. There should be thousands of new educational programs, and hundreds of really good ones, it's so easy.

(From the Apple Spice Newsletter, Delaware)

Support for the Apple II Computer

The formation of a company to support the Apple computer was formally announced today (November 11, 1991, Louisville, Kentucky). The Alliance International Incorporated (AII, get it?) was formed by a group of Apple II users and developers to encourage the use of the Apple II computer in small businesses, the home and in education. John Majka, one of the founders, is the Acting President of The Alliance International Inc. He is also the president of Raptor, Inc., an Apple II software developer and publisher and has had over 10 years experience with the Apple II computer.

He said, "From discussions with other Apple II users and with Apple II software and hardware developers, we felt that there was a need to spread the word that the Apple II computer is neither dead nor obsolete. The Apple II, and especially the Apple IIGS, is the ideal computer for small businesses, the home and education. As Apple IIGS users also know, the Apple IIGS is the best currently available computer for the latest trend in computing, Multi-Media. We are not, in any way shape or form, connected with Apple Computer. Inc. This is strictly an effort by Apple II users and developers."

Mr. Majka said, "When the words Apple Computer are mentioned, the first that thing people think of is the Macintosh computer. One goal of the Alliance International Incorporated is to get them to think 'Apple II and Macintosh,' instead. The Apple II is a great computer and deserves more recognition."

Another goal of The Alliance International Incorporated is to encourage developers of Macintosh and MS-DOS software to develop versions for the Apple IIGS also.

Mr. Majka also said that "Programming the Apple IIGS is better than programming the Macintosh

or for Windows 3.0. While the appearance of the Graphical User Interface operating systems is virtually the same to the user, the Apple IIGS tools make programming much easier and much faster. With a very fast 16-bit CPU (an even faster one is being developed) and the capacity of up to 8 MB of RAM available, there is nothing that can run on a Macintosh or 'DOS' PC that can not run on an Apple IIGS and maybe better. We have already asked several Macintosh developers to consider porting their software to the Apple IIGS. The future looks very good for the Apple II."

The Alliance International Incorporated is dedicated to the support of the millions of Apple II users around the world. 'We're just getting started. We have some ideas but what we really need is for current and future Apple II owners to write to us and tell us what they need, what they would like us to provide,' Mr. Majka said. The Alliance International incorporated can be reached at P.O. Box 20756, Louisville, Kentucky 40250.

(From the Apple Spice Newsletter, Delaware)

Frequently Asked Questions

The following was gleaned, in part, from a board called the "apple2 newsgroup" on the ProLine network and may be of interest to our readers. The head of the project is David Kopper and he's assisted by Larry Virden and Dan DeMaggio.

Q: What is the current system disk?

A: DOS System Master - 3.3 All Apple II'sProDOS 8 system disk - 3.2 All Apple II's with 64k or more IIGS System Disk - 5.0.4 Apple IIGS with 1MB or more (smaller memory configurations may work, although they are not supported/tested)

ProDOS 8 - 1.9 Available on the ProDOS 8Basic.System - 1.4.1 IIGS System Disks

The system disks should be available from your local Apple Computer dealer, a local Apple Users Group or from a commercial information system (GEnie, America On Line, or CompuServe).

[GH: IIGS System Software 5.0.4 is also on the WAP TCS.]

Q: What are technotes?

A: Technotes are short topics addressing questions that Apple's Apple II Developer Technical Support staff get from outside developers. Technotes are divided into various categories including (but not limited to): Apple IIc hardware, Apple II hardware, ImageWriter, Memory Expansion, ProDOS 8, GS/OS and IIGS hardware.

The Apple IIGS is the best multimedia machine on the market.

The idea of technotes is to distribute information about Apple computers that isn't readily available from any other source. The hundreds of pages are well worth the effort to get. DTS really does a great job with technotes! (Thanks DTS!!!)

You can find Apple II technotes on the FTP sites (apple2.archive and ftp.apple), or the commercial information systems. Another source of technotes is APDA, where one can order printed or diskette subscriptions to the technotes.

Q: What Apple II magazines are there?

A: • **GS+** is a bimonthly magazine for the Apple IIGS published on an Apple IIGS. This magazine is not as polished as some magazines, but they are honest and put together very good reviews and software. If they see something that is junk, they call it junk. Their idea is to show what an Apple IIGS can do, and they succeed very well at doing exactly that.

Some of their software is just downright great - their EGOed NDA editor is great, I also like their Shuffle INIT (shuffles the active window between all open windows). I'm not being paid for this favorable point of view - I'm simply a very happy subscriber.

Address: GS+ Subscription Services c/o EGO Systems P.O. Box 15366 Chattanooga, Tennessee 37415-0366 Phone (615) 870-4960 (Mon-Fri 9am-6pm EST).

Subscription Price: magazine $15/year, disk+magazine $36/year magazine $3/issue, disk+magazine $8/issue First class mail service for $1.50/issue, $9/year Tennessee Residents add 5.5% sales tax. Chattanooga Residents add 7.25% sales tax. Canadian/Mexican orders add $1 extra postage. All other foreign orders add $6 surface, $30 air.

• **inCider/A+** is a monthly Apple II/Macintosh magazine.

Address: inCider/A+ P.O. Box 56818 Boulder, CO 80322-8618.

Subscription: $27.97/year $43/2 years.

• **HyperStudio Network** is a quarterly newsletter about HyperStudio. Membership in HSN will get you the newsletter (HyperStudio Forum), an annual 'Best of HyperStudio' disk of stacks and access to discounts on HyperStudio accessories (including HyperStudio). This network seems to be a great place for teachers to get

information/stacks.

HyperPostCards is their current big success. The idea is to get students to include information about themselves and to distribute the HyperStudio stacks from one school to another.

Address: HyperStudio Network Box 103 Blawenburg, NJ 08504 Phone: (609) 466-3196.

Subscription/Membership: $29 for 1 year, $55 for 2 years. Institutional Membership: $99 for 1 year, $189 for 2 years. Includes 20 copies of both HyperStudio Forum and the annual "Best of HyperStudio" disk.

• **A2-Central** publishes several Apple II magazines:

A2-Central - The Apple II newsletter, there is an optional disk version. This is a monthly publication.

All of their other publications are 3.5" disk based only.

For the IIGS, the program to use is HyperStudio (they include the runtime version, in case you don't have HyperStudio).

For other II's, they include a text browser. Although any text browser will do the job.

Stack Central - HyperStudio-based disk. Each issue is a collection of HyperStudio additions. My guess is that it includes things like Clip Art/Sounds, XCMD's, PD Stacks and so on. There are two disks per issue - every other month.

TimeOut Central - every other month - all about TimeOut additions and AppleWorks, includes UltraMacros macros, Templates and so forth. There is one disk per issue.

Hyperbole - This disk-based publication is not about computers. It is HyperStudio based stories and poetry and so on. The sample issue that I saw was very interesting.

Address: A2-Central (or is it Resource Central now?) P.O. Box 11250 Overland Park, KS 66207 Phone (913) 469-6502.

• **The Road Apple** is an Apple II "End Users" Underground Newsletter.

Published six times a year.

Address: 1121 NE 177th, Suite B Portland, OR 97230 Phone: (503) 254-3874.

Subscription price: $9.95 per year (6 issues).

...the Apple II computer is neither dead nor obsolete.. [It] is the ideal computer for small businesses, the home and education.

• **Computist** is a publication devoted to gathering and distributing information on removing copy protection from Apple II software.

Address: P.O. Box 110846 Tacoma, WA 98411.

• **Softdisk and Softdisk GS** are monthly disk magazines containing a variety of software. Softdisk is available on 5.25" or 3.5" disks. Softdisk GS is available only on 3.5" disks.

Address: Softdisk Publishing P.O. Box 30008 Shreveport, LA 71130-0008 Phone: (800) 831-2694 (318) 221-8718.

Subscription: Softdisk: $19.95/3 months Softdisk GS: $29.95/3 months Both: $39.95/3 months.

Q: What programming resources are there?

A: Interested in writing programs for the Apple II? Good! There are many resources to draw from. With this type of support, who could resist writing programs for the Apple II?

A2-Central is a really good resource for programmers and non-programmers alike. It has questions (and answers) from readers, and articles from the moderators of an Apple II RoundTable on GEnie. One year subscription is $28 worldwide. For more information, contact: A2-Central, P.O. Box 11250, Overland Park, KS 66207. Phone (913) 469-6502.

APDA (Apple Programmers and Developers) is the place to get the latest and greatest from Apple and third party vendors. They have many programming tools and debugging aids not available anywhere else. You can get their free catalog by calling (800) 282-2732.

II SysOps is a bi-monthly newsletter for Bulletin Board System Operators. It explores every aspect of running a BBS: From the technical issues, to legal issues to sysop policy. They even have board-by-board news on the major BBS's. One year subscriptions are $10/13/16 for US/Canada/Int'l. Write to: II Sysops, P.O. Box 720, Eldersburg, MD 21784.

USUS is an international non-profit organization dedicated to promoting and influencing software standards to aid in the development of portable software. They have a large software library including a lot of source code (for almost every language or computer). One year membership is $45/51/75 for US/Canada or Mexico/Int'l. Student, professional and organization rates are also available. Contact Keith Frederick (Secretary), USUS Inc., P.O. Box 1148, La Jolla, CA 92038.

If you do start producing commercial programs for the Apple II, Apple

Computer Inc. may be your best resource. You can become an associate in the Apple Developer Program for $350 (for Mac and Apple II) or a mere $150 (for Apple II only) by calling (408) 974-4897. That gets you D e v e l o p e magazine, Apple Technical notes, the Apple Developer CD, discounts on Apple products, and more! If you want to license Apple Software for distribution with your product you can get information by calling (408) 974-4667. (Note: You need a license to distribute ProDOS, the Installer, and Apple System Software.)

Q: How do I get out of Basic (that little "]" prompt and flashing cursor)?

A: Type: BYE <RETURN>

Q: Can the Apple II connect to SCSI devices?

A: Yes. There are several cards that will allow you to do this. The standard one is the Apple High Speed DMA SCSI card. You will need an enhanced IIe or GS. For more speed, try the RamFast/SCSI from CV Technologies. For un-enhanced IIe's, try finding an old Rev C SCSI card. But this card only supports regular hard drives and CD ROM. The other two also support ejectable media and tape backup.

Q: Can my Apple read IBM/MAC disks, and take High Density disks?

A: Yes. 800K Mac disks can be read with several PD programs including A2FX for the IIe and GS/OS System 6.0. You can also transfer programs directly onto ProDOS disks with the Apple File Exchange program (comes with all Macs). With Apple's new SuperDrive, all Apple II's will be able to use High Density disks (2x the storage of Double density disks, which hold 800K). If you want to read IBM disks, it is only possible with the SuperDrive, but

...there is nothing that can run on a Macintosh or 'DOS' PC that can't run on an Apple IIGS ,maybe better

there are no programs to take advantage of this, yet.

Q: Can I hook up a LaserWriter, DeskJet, etc. to my Apple IIe?

A: Yes, all the above connections have regular serial or parallel connections. The tricky part is getting them to do what you want. The DeskJet, for example will print very nice looking text with regular old "PR#1". But if you want to change the font or print graphics, you may be up a creek. One excellent program for these types of printers is Publish it 4. You won't believe the output you can get from a IIe. For AppleWorks fans, there is the program called SuperPatch. Among its patches is a cool DeskJet 500 printer driver. You can print sideways, and change fonts with normal AppleWorks commands.

Q: Can I hook up a LaserWriter, DeskJet, etc. to my Apple IIGS?

A: On the GS, you can hook up a LaserWriter via AppleTalk or direct serial connection. GS/OS will let any program print to it if it's on AppleTalk. If you get a DeskJet, or PaintJet, etc., you can hook them up via the serial port. But in order to use them effectively, you will want Harmonie from Vitesse (better) or Independence (cheaper) from Seven Hills. With either of these, it's just plug and chug, but you will want LARGE font sizes (which it will reduce to get smoother looking output

Q: Can I hook a scanner up to my IIe? Can it do OCR?

A: Yes and Yes. there is the Quickie (by Vitesse) which is the same hardware as the LightningScanner, but better software. Basically, you scan 4" columns (you must have 512K to 1 MB) and can even paste them together to make 8" scans. If you want Optical Character Recognition (allows the computer to "read" text so you can load it into your word processor) then WestCode has the product for you. It's called InWords. Because it was written by Alan Bird, you know it's good. [GH: Watch for version 1.1 – out soon]

Q: My Applied Ingenuity drive died. Does anyone repair them?

A: Bill Heineman, Custom Software, Inc., 7734 S. Broadway Rd., Whitter, CA 90606 Phone: (213) 695-3966

Q: I get "ProDOS version not compatible" on my GS.

A: It's not the ProDOS, it's the SCSI drivers. Just install the Apple SCSI drivers from your System Tools Disk, not the SCSI disk.

Q: What is an Enhanced IIe? Do I have one?

A: Apple has two versions of the IIe. The best way to tell is watch you computer as it boots. It will say "Apple][" if it is not enhanced, or "Apple IIe" if it is. You can upgrade

for about $70 with the Enhancement kit. It contains a new Basic ROM (lets you type lower case basic commands), a new video ROM (lets programs display neat text symbols) and a new microprocessor (the 65C02, with 10 new instructions). The basic reason for upgrading is compatibility with programs that require an Enhanced IIe. If you have a IIc or GS, you have Enhanced IIe compatibility.

Q: I have a][+/Franklin. Where can I get tech support?

A: Send a Self Addressed, Stamped Envelope to: TEBR, RFD #1, North Salem, NY 10560-9705 or call (914)-669-5421

Q: I want to find out about something at Apple. Who do I call?

A: Apple - Customer Support Assistance: (800) 776-2333 "To Resolve issues about Apple policies, programs and products."

Q: Are there any dealers/user groups around me?

A: You can find out from Apple: call (800) 538-9696, Ext. 500, and tell them your ZIP code.

Q: What programming languages are available for the Apple II?

A: Oh, boy, here comes a can of worms. (+ means Free/ShareWare) There are several versions of Forth, including Purple Forth+, Mad Forth, and Q Forth+. There are several versions of C, including Hyper-C+, Orca C, APW C, and Manx Aztec C. I believe the last 3 are GS only. There is ALWAYS Applesoft! It can be extended with several utilities in commercial and non-commercial form. If you feel the need for speed, you can look into Beagle Brother's Applesoft Compiler. Or you could scrap Applesoft and go with a whole system, like TML Basic, Micol Basic, or Z-Basic. In the Pascal department, we have TML (now called Complete Pascal), Orca and Pecan Power System's Pascal. Other languages? Fortran, Lisp, Logo, etc. And don't forget assemblers! We have Orca/M, Orca/MGS, APW, Merlin 8/16 Plus, Lisa+, EDASM and others.

Q: Who do I call for help?

A: Apple Customer Support Assistance: (800) 776-2333

... start producing commercial programs for the Apple II, you can become an associate in the Apple Developer Program [which] gets you ...discounts o and more!

Q: My AppleWorks program suddenly freezes on the first screen.

A: It may be that AW is barfing on the date. If you have a GS, check your control panel for the right date (and if it keeps happening, you have a dead battery, dude. See next Q.)

Q: My GS control panel keeps resetting to the defaults.

A: It's probably your battery. If you have a ROM 03 GS, you just pop it out an get another. On the ROM 01, you will need a Slide-On Battery Replacement Kit from Night Owl Productions: Address: Nite Owl Productions, Slide-On Battery Dept., 5734 Lamar Street, Mission, KS 66202, Phone: (913) 362-9898. Price: 14:95 plus $2 for shipping

Q: I want a Y-adapter for my GS keyboard.

A: Redmond Cable has an ADB Y-connector cable for separating your mouse from the side of your keyboard (also can be used to work around a failing ADB port on the keyboard). Their address is: Redmond Cable Corporation, 17371-A1 NE 67th Ct, Redmond, WA 98052, Phone: (206) 882-2009.

Q: Is anybody still supporting the Apple II?

A: Try Quality Computers. If you call them up, they will put you on their Enhance mailing list for free. Enhance is chocked full of articles about the Apple II in education, new products, and (of course) contains the QC catalog.

Quality Computers, 20200 E. 9 Mile Road. Box 665. St. Clair Shores, MI 48080, Phone: (800) 443-6697.

Q: Can I get replacement chips for my Apple IIc?

A: Alltech Electronics carries all the IIc chips for $9 to $39 each (depending on the chip). Pick up the latest A+ and look for their ad. You can them at (619) 721-7733.

Q: What programs are there for conversion of graphic images? (i.e.: GIF's and other pictures)

A: Most of the following software only works on an Apple IIGS (So I won't continually say its for the IIGS):

* The Graphics Exchange (with library disk 1 - and soon with library disk 2 and The RGB Exchange) convert many formats of graphics into any of the other for-

mats.

* SuperConvert converts many graphics into IIGS SHR graphics. Many people love its dithering capabilities (I haven't seen them so I won't comment more).

* SHRConvert is the earlier SuperConvert (it used to be ShareWare before being published). It does a pretty good job on a limited number of types of graphics.

* Platinum Paint supports a fair number of different graphic types (I really like its MacPaint support - now don't throw anything at me... Beagle Bros has built a great program here).

* ShowPic 6 is an NDA that can display a fair number of different graphic types. You can also save the resulting graphic as a IIGS SHR painting.

* Dream Grafix supports all 3200 color picture types and also 16 color and 256 color pictures. This is a very impressive paint program with its 3200 color support.

* Emerald Image is supposed to be a 3200 color paint program, however I haven't heard much about it in a long time - does someone know something more about this software?

* IIGIF is a GIF converter for any Apple II. I don't recall seeing a version that works on an Apple IIc+, however there are some patches that may fix this problem.

Q: My IIGS keeps crashing with the error $911 - what is it and how do I get rid of it?

A: $911 errors are usually caused by too much heat inside your IIGS. You'll probably want to add a fan (either external or internal). Depending on your configuration, you may need two fans (My IIGS has a TransWarp GS, a RamFast/SCSI and a super power supply from AE - these three components generate so much heat that I need to use two fans - one inside and one outside). Just don't get a cheap fan because the noise of its vibration will probably drive you nuts.

Q: What HyperMedia programs are available?

A: For the IIGS: HyperStudio (3.0 was just released) and HyperCard IIGS, etc. For other Apple II's: Tech Tutor (although some folks won't agree that it is HyperMedia), HyperScreen, at least two different AppleWorks additions, and I believe there are a couple others.

Q: What desktop publishing software is available?

A: IIGS: GraphicWriter III (rev 1.1 was just released), AppleWorks IIGS, and a few others. Others: Publish-It! 4 (GH: the Apple II DTP of choice around here), GEOS Publish, and possibly AppleWorks with some additions may also work.

Q: What Apple II computers are currently being sold?

Q: Can my Apple read IBM/MAC disks, and take High Density disks?
A: Yes.

A: Apple IIGS, Apple IIe, Apple IIe card for Macintosh LC, Laser 128, Laser 128EX, Laser 128EX/2.

Q: How come ProDOS can only use 32 MB per partition?

A: It is a built-in restriction to the ProDOS file system. The ProDOS file system has 16 bits allocated to describe a disk block. This restricts you to accessing 32 MB per partition.

GS/OS does not have this restriction. Since GS/OS provides access to the ProDOS file system (through a file system translator), it appears to users that GS/OS is restricted. This is not the case at all. The AppleShare file system translator or the HFS (Macintosh file system) are not limited to 32 MB.

Q: What hard disk drive controllers are available?

A: The oldest is the Apple SCSI Card (Revision C is required by the current system software). This controller will only allow you to access 64 MB of a hard disk (i.e.: Two 32 MB partitions).

The Apple DMA SCSI Card will allow GS/OS to see lots of partitions This controller uses DMA (Direct Memory Access to transfer information from the disk controller directly to the memory where the CPU wants it read into or written from. The current version of ProDOS 8 can only access the first two partitions (a ShareWare program SCSI Part can get past this limitation).

The RamFast/SCSI controller can access up to twelve partitions under GS/OS or ProDOS 8. It also uses DMA to transfer data to and from the disk drive. This controller is the fastest hard disk drive controller (it has between 256k and 1MB of memory on it and there is a 10 MHz CPU to process the I/O requests on it). Another feature of the RamFast is that you can write-protect and/or disable access to each partition.

There are other controllers out there, however, I don't have any details about them so I'll stop here.

Q: My Apple IIe looses characters when I'm using the modem, how come?

A: There are various reasons for missing characters on the IIe:

1) Flip DIP switch 2-6 (if you have an Apple Super Serial Card) - this switch enables interrupts for the serial card.

2) The un-enhanced IIe has a scrolling problem in the 80-column mode.

3) You have the modem in an unrecommended slot.

4) Possibly interference between the modem and another card.

Q: How can I generate a postscript file on my IIGS?

A: Quick easy to follow steps:

Rename LaserWriter Driver to Postscript (or whatever you want)

Put it in Drivers directory

Select it as your direct connect printer in the NDA Control Panel

Select Print from file as normal

Hold down open Apple-F as you click on OK.

The postscript file can be found in the Drivers directory!

This method currently works, however this is not documented by Apple and may not work in the future.

Q: Do third party 3.5" Macintosh disk drives work on the IIGS?

A: No. Apple's 3.5" drive has logic to sense which machine it is hooked up to (Apple II or Macintosh) and it works accordingly. Use a Macintosh specific drive on a IIGS and it'll erase the first track of any disk that is inside and the access light will stay on.

Q: Where can I find oscillator crystals?

A: Digi-Key Corp. (Phone: 800-344-4539). They charge $3.75 per crystal and $5 for shipping an order. Some Digi-Key part numbers are:

SE1101 for 32 MHz (8 MHz TransWarp GS)

SE1103 for 36 MHz (9 MHz TransWarp GS)

SE1104 for 40 MHz (10 MHz TransWarp GS)

Q: How can I change the file type of a file?

A: Use either FAZ (File Attribute Zapper) for most Apple II's - other programs are available for the IIGS.

Q: Why am I getting "Not a Compatible version of ProDOS" when I try to run any ProDOS 8 program after I've modified ProDOS 8 with SCSI Part?

A: The system software is checking to see if P8 is the size that the system expects. SCSI Part has probably changed the size of P8. The fix is to patch

the system software to accept the new size of ProDOS 8 (Sorry, I don't have the details on how to do this for you).

Q: Apple II Resources?

This section points to Apple II resources - places to get more information about Apple II's.

To find the closest Apple II (or Macintosh) User Group near you, contact:

The Apple User Group Connection Apple Computer, Inc. 20525 Mariani Avenue, MS:36-AA Cupertino, CA 95014 Phone: (800) 538-9696, extension 500.

The Apple II Guide is a resource guide for Apple II owners. Apple has given this guide away at AppleFest and it should be available from your local dealer, your user group or directly from Apple.

From the comments I've heard about this book, Apple has done a very good job on it. Thank you Apple!

In order to find an Apple dealer in your area, call the Apple Dealer Relations toll free number: (800) 538-9696.

If you are having problems with a dealer in your area, call the Apple Customer Service Center toll free number: (800) 776-2333.

The above was prepared by the Adam and Eve Apple User's Group as reported in The Apple Spice Newsletter, Delaware.

Q: Anybody still supporting the Apple II?
A: Try Quality Computers, 20200 E. 9 Mile Road. Box 665., St. Clair Shores, MI 48080, Ph.: (800) 443-6697

The author is currently Chairman of both the AppleWorks and Apple IIGS Special Interests Groups. He is published frequently in the Journal of the Washington Apple Pi. He is also a Beagle Buddy, a Seven Hills Partner and a TimeWorks Ambassador for the WAP. Professionally, he is a Certified Hypnotherapist in private practice in McLean, Virginia and does part-time Apple II family computer application programs consulting and teaching. His latest software program The Magic File Cabinet is presently selling nationwide.

Copyrights

by Rick Donaldson

What is a Copyright and What Does it Do?

Copyrighting your work, whether it be software, a book, music, sculptures or drama is an important process in protecting your work. Without the Copyright, anything you created could and most likely would be used by others. This article will assist you in obtaining a copyright for your work, and will give you the details of what 'Copyright' means to you and users. Mainly, we will deal with software, however, you will be able to apply this information to other types of works as well.

What is a Copyright and what does the word mean? Essentially, a copyright is just as the word implies, the right to copy something, or to use it. According to Title 17, U.S. Code, copyrighting is a form of protection provided to the author of "original works of authorship," including dramatic, literary, artistic, musical and certain other intellectual works. Included somewhere in the 'other' part of the description, is software.

The protection of a Copyright extends only to the literary or textual expression contained in a computer program. This means, very specifically you can not copyright algorithms, systems, methods, ideas, program logic, concepts or layouts. The actual protection provided for this 'textual expression' is stated in Section 106 or Title 17. (See subhead entitled, "What is Not Copyrightable?")

The law provides for the owner of the copyright to have the exclusive right to do the following and authorizes others to reproduce the material (make copies), prepare a derivative work based upon the original, to distribute copies of the original work to the public (including sale or other transfer by rental, lease or lending), to use or perform in the case of plays or music, the work publicly, and to display the copyrighted work publicly. The last two items would be in the case of poetry/literary stories, dramatic, musical, and choreographic works.

It is illegal for anyone to violate any of these rights provided to the owner of the copyright. The law does not provide for unlimited scope of these rights, however, and if you are considering copyrighting anything at all, it would be best for you to carefully read the laws. At the end of this article there is an address for obtaining the required information and forms.

Who Can Make a Copyright Claim?

Copyright protection begins the instant you store anything on disk in a readable form for the first time. It is not protected if it can not be read, obviously. The work immediately becomes the sole property of the author and so does the copyright on the work of authorship. Only the author or those deriving their rights directly from the author can make any claim to a copyright. There are, however, a couple of minor exceptions, as there usually are in any law.

In the case of a work made for hire, the employer and not the actual author has the sole copyright. The law considers the employer to be the actual author, even though someone else may have actually taken the time to do the work. A work made for hire is defined as a work prepared by an employee within the scope of his/her employment. In other words, if you work for a software company and you write something in software, generally, the company can claim the work as theirs. You should consider this carefully, if you write a game or utility while not actually at work, because sometimes contracts for

companies have fine print that assigns the Company all the rights to anything you do, on or off duty. Check your contract carefully because that game you are working on at night, might just not be yours after all!

Co-authors automatically become co-owners of the copyright unless there has been a previous agreement stating otherwise. Also, be aware that if the project you are working on is a continuing series, each section of the program/software/article will have a separate copyright. This would be the case in serial stories and probably would not affect anything in software, at least nothing comes to mind right now.

What is Protected by Copyright?

Copyrightable works include the following: Literary works; musical works, including any accompanying words; dramatic works, including accompanying music; choreographic and pantomime works; pictorial, graphic, and sculptural works; sound recordings; motion pictures and other audiovisual works; software.

What Is Not Protected by Copyright?

The following may not be Copyrighted: Any work that has been written but not fixed in some readable form or expression. In the case of software, simply fixing it on disk, or hard copy begins the protection. If it were a choreographed dance step, it would have to be recorded visually or explained on paper.

Titles, slogans or phrases, names, familiar symbols or designs, slight variations of typographical ornamentation, lettering or coloring; listings of ingredients or contents all may not be copyrighted.

Ideas, procedures, methods, systems, processes, algorithms, concepts, principles, discoveries, or devices as distinguished from a description, explanation or illustration may not be copyrighted.

Only the author or those deriving their rights directly from the author can make any claim to copyright.

Works consisting entirely of common property or information with no original authorship. Some examples are height and weight charts, calendars, lists of tables taken from public documents.

How Do You Secure a Copyright?

Prior to 1978 it was required by law that you actually publish the article, book or other medium you authored, with notice of Copyright. This is no longer required to secure a Copyright for a work. Under the present law, the Copyright is automatically secured when the work is created "and fixed in a copy or phono-record" for the first time.

Copies are considered any material object from which the information can be read, including disk, tape, book, manuscript, sheet music, videotape, microfilm or any of several other devices.

If the work is being prepared over a long period of time, then the protection begins on the day of the fixing in readable form of the first piece of information. For example, if you are writing a program containing separate modules, but all necessary to the working of the program, and not 'stand-alone' modules, then the copyright for the whole series of modules is from the date of the first module.

How Do You Let the Public Know the Work is Copyrighted?

For software there are certain guidelines for this notification. All other types of copyrighted material have various guidelines which will not be covered here. The notice for visually perceptible copies must contain all of the following information.

1. The symbol (C) (the letter C with a circle around it) or the word "Copyright" or the abbreviation "Copr."
2. The year of FIRST PUBLICATION of the work.
3. The name of the owner of the copyright in the work, or an abbreviation by which the name can be recognized, or a generally known alternative designation of the owner.

Examples:

(C) 1990 Johnny Doe
Copyright 1990 J. Y. Doe
Copr. 1990 John Youst Doe

All of the above examples would be considered valid entries, however, it is suggested that you substitute your own name on your work for that of Mr. Doe!

Do You have to send Anything to Register Your Work?

Indeed, you do. In fact, though it is not required by law, it is highly recommended that you make copies of your works and send them to the Copyright Offices to be registered. This not only helps protect you, but you will also get a certificate of registration to indicate you have registered your work. Should anything ever come up with regards to 'Who did it first,' you will have

written proof of your dates of registration and a copy in the Library of Congress.

For your works to be accepted (again I will only deal with software), you must provide some copies of your works. For either published or unpublished works, this must be the first 25 pages and the last 25 pages of your work in the form of a "visually perceptible (image) without the aid of a machine or device, either on paper or in microfilm, together with the page or equivalent unit containing the copyright notice, if any."

If the software you are registering is a revised version of a program which has already been registered, previously published, or which is in the public domain, and the revisions occur throughout the program, then the first 25 and last 25 pages. If the revisions are not within those pages then any 50 pages of the program which is representative of the changes that have been made.

If your program is shorter than 50 pages, then a hard copy of the entire program will suffice.

The Copyright Office has assured me that they feel the best representation of the authorship in a computer program is a listing of the actual program in source code.

If you are unwilling to do this, or for some reason it is not possible, then registration will proceed, but will incur the 'RULE OF DOUBT'. Simply put, it just means that your work as deposited in object code, contains copyrightable authorship.

Finally, if there is a users manual, or other printed documentation, a copy of it should also be provided with the program.

What About Trade Secrets?

If a computer program contains a trade secret or something that is confidential to the company or person owning the copyright and the person is unwilling to disclose the information, the Copyright Office will consider a 'special relief request'. This means you may deposit less than the required 50 pages, again with some exceptions.

First you must make a written request to the Chief, Examining Division of the Copyright Office for special relief. Then you must do one of the following methods of depositing the source code.

...it is recommended that you make copies of your works and send them...to be registered.

1. First and last 25 pages of source code, with some portions blocked out. However, the blocked out portions must be proportionally less than the material still remaining.

2. At least the first and last ten pages of source code alone, with nothing blocked out.

3. First and last 25 pages of OBJECT code, plus any ten or more consecutive pages of source code, with no blocked out areas.

Which Forms Do You Use?

For software you will be using a United States Copyright Office Form 'TX'. To obtain these and other forms for Copyrighting your work, write to:

Publications Section, LM-445
Copyright Office
Library of Congress
Washington, DC 20559

or you may call directly to: 202-287-9100, the Forms and Publications Hotline in Washington.

Final Notes to Authors and Would-be Copyrighters

There is a fee, and the last time I checked it was $10.00, though it may be more now. Considering some of the trouble I've seen lately over who has ownership of certain articles and software, it would behoove you to keep your work a secret until you are ready to publish it, register it prior to releasing and finally, make sure you follow everything that is in this article. More information can be obtained through the above address, including instructions on filling out the forms, advice about various types of copyrights, and the laws themselves.

Once you have sent off your information, program, source code, and fee to the Copyrights Office in D.C., you will not be notified that they received your package, but can expect to see or hear from them within about 90 days. You will be either sent a certificate of registration, a letter rejecting your registration and an explanation as to why, or a telephone call from the copyright examiner if you need to provide more information to them to accomplish the copyrighting process.

I'd like to wish you all Good Luck with your programs and articles, and I certainly hope this article has helped.

This article appeared in 'Bits & Bytes,' an on-disk publication of the Apple Computer Enjoyment Society of South FL an organization of several user groups. Contributed for presentation by Gary Hayman.

Mainframe Batch Printing on the Apple III

by Paul Campbell

It's late at night and you've been working long and hard on a Three Easy Pieces database used to manage records for a client. You know that your client is expecting 12 different reports, all of them longer than 30 pages, all of them sorted differently, and all of them due by morning.

If you are like me, you do not look forward to punching out a report, then waiting until the printer catches up before sending another. A print buffer helps in situations like this, but 12 reports that are 35 pages long add up to a total of 420 pages.

A page of text on the Apple III averages about 2K in size, so a 256K print buffer will only hold about a fourth of the reports, leaving you to wait for the rest. Although the buffer would certainly make things go faster, wouldn't it be nice to do all the reports in ten minutes, then give a simple command to print all of them while you sleep?

Printing from the Wonderful World of SOS

The Apple III is the most device-independent computer I have ever used (and I've used a lot!). All devices connected to the III are controlled by device drivers which are loaded when the computer is turned on or rebooted. This feature of the SOS operating system allows your computer to print on virtually any printer or disk drive.

What does this have to do with your 420 pages worth of reports? Glad you asked! I don't know how fast your printer is, but a typical page on my Panasonic printer takes between 20 and 30 seconds in draft mode. This translates into a 2.9 HOUR print job for 420 pages in draft mode, and over six hours in letter quality.

The solution to this wait is using a subdirectory as a print queue, then printing to this subdirectory on your disk drive. This subdirectory could be called .PROFILE/PQ. If you have one of the new hard drives from On Three, you might want to place this on one of the different partitions. Three Easy Pieces (EZP) will allow you print a report to the printer, to an ASCII file, or to a disk drive as a formatted ASCII file.

Printing to disk takes place at the rate of 1.1 seconds per page for a time of 7.7 minutes for all 420 pages, much better than the 6 hours required for the printer. The formatted ASCII file output is the key. When Three Easy Pieces prints to disk in this mode, it also prints the file on disk with all of the margins, indents, headers, footers, and page numbers intact.

If you do not have your copy of Three Easy Pieces setup to print to disk, follow the instructions in the manual for adding a new printer, choose your printer type, then choose "To Disk." Set everything else like you would for your actual printer.

Now, you have made a subdirectory, sorted and printed all those reports to that subdirectory on the disk drive, and are ready to give that simple command so you can go to bed and wake up to a neat stack of reports. If I could only remember what it was, I would tell you...

Just kidding!

Apple III System Utilities; Still Doing What MS-DOS Can't

System Utilities can do all the neat things it is supposed to do, like delete, copy, lock, rename, or do most anything with files and volumes. It also has a few undocumented functions, one of which will let us print those reports that we created in Three Easy Pieces.

To print your reports from Sys-

tem Utilities, go to the file handling menu, choose the copy file command and type the pathname of your subdirectory followed by a slash and an equal sign, then press return. The program will then ask you for the file destination, you should respond with the device name of your printer, press return, and make sure your printer is ready with plenty of paper!

System Utilities will ask one more question before printing all those reports: Do you want to add a page of directory information before each file? If you answer no, it won't. If you answer yes, it will print 10 lines containing the date, time, and the filename before each file.

The Apple III System Utilities will now begin printing every file in your new "Print Queue" subdirectory regardless of size, and you can go to sleep. One thing to think about as you curl up under the covers is that this method will also work for word processing and spreadsheet files that have been printed to disk.

It is possible for an author to create a book 8,000 pages long, hook the Apple up to a high capacity printer, and print the whole book in one shot. A word of caution; you might want to experiment with some smaller files to get the hang of this method.

Once the printing starts, it can only be interrupted if the Utilities program cannot find the source file. You can cause this to happen by opening the floppy disk door, or by using a Desk Accessory to alter the pathname. You do not have to worry if the paper runs out or the printer is taken off-line, System Utilities will wait patiently until the problem is corrected.

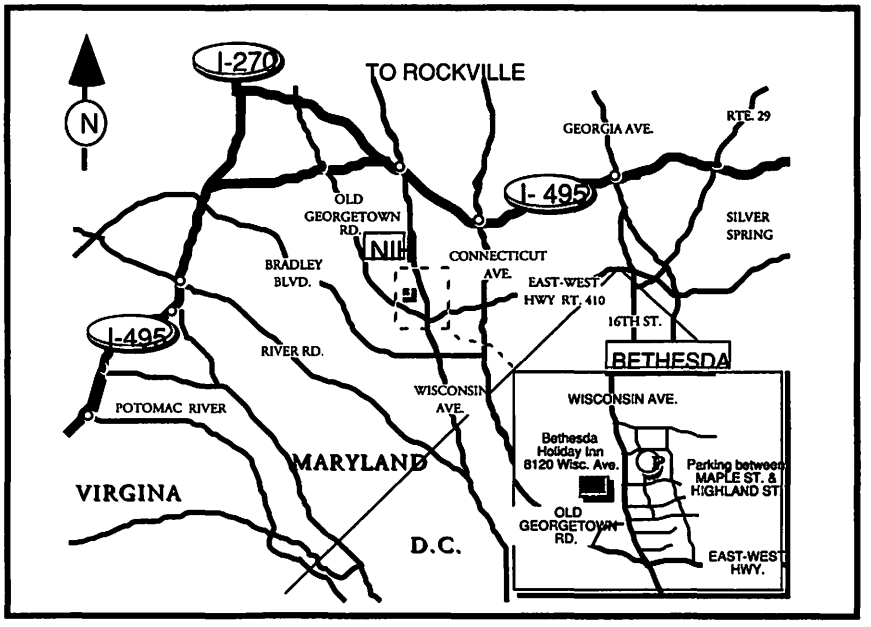
In using my print queue, I have never had to interrupt a job, so you will probably never have to use the emergency procedure information just mentioned, but as the saying goes, "It is better to have it and not need it, than to need it and not have it." That about wraps up this report, my SARA has a long night ahead of her, but as for me, well, sweet dreams!

And Many Thanks...

The December Garage sale was a resounding success. Hundreds of our members and a few visitors found good deals at many of the 70 plus tables of goodies. At the risk of missing someone, I'd like to thank Jon Slobins for the award winning Garage Sale poster (Save a Plastic Christmas Tree); Nancy Seferian for the map poster; Bernie Urban for publicity; Bob Schaffer and the other friendly early sellers for setting up the tables and chairs; John O'Reilly and Mark for the New WAP coffee Mug procurement and sales (if you missed them, there are still a few available for $5 at the office); Grace Gallagher and Frank Potter for running the ticketing operation with the assistance of Tim Helsing; Beth Medlin for Memberships sales; David Weikert and Fred Rodgers for the Disketeria; and Ken DeVito, Tom Vier and all the others that jumped in and helped.

If you missed this event , the Summer Computer Garage Sale will be in June. Maybe, if there is support for it, we will hold this one in VA. Tom Witte, (703) 683-5871.

Map to February 22 General Meeting at the Holiday Inn, Bethesda.



ON THE TRAIL OF THE APPLE III

by David Ottalini

New Members

We do continue to get new members and I'd like to welcome two in particular this month. I'm pleased to introduce our first member from Japan. Koji Annoura publishes a bi-monthly newsletter for Apple II, III, Lisa, Mac XL and Mac Plus users in Japan. The Newsletter is called "Annie's Letter" and is based out of Annie's Crafts in Fukuoka Japan (Full address is: Annie's Crafts, Inc., 303-3-27 Akasaka 3-chome, Chuo-ku, Fuku-oka 810 JAPAN Fax: 81-92-731-4555 70064.275)

Koji made his appearance in the MAUG (MicroNetworked Apples Users Group) section of CompuServe in late November. He indicated at that time that he wanted to join WAP, "and write our newsletter about your group and your information," as well as exchange newsletters. Beth at the WAP office sent him all the information and a sample Journal. So hopefully by the time you read this, we'll have him all signed up. More on this as we get additional information.

Our other new member is Clifford Dowling. According to III SIGer Seth Mize "plans to update peanut record keeping from hand to computer throughout Georgia with a dozen used Apple III's." I've talked to Mr. Dowling and asked him to write us an article about what he is doing with his III's, so stay tuned.

Paul Campbell Misses the Garage Sale

Sad, but true. Paul was one of the few III SIGers who missed the December WAP Garage Sale. (His only, appropriate, comment: "AAARRRRGGGGGHHHHHHH!")

There were lots of III's for sale this time at excellent prices. I even found some software. On a down note, our long-time friend and IIIer Bob Shaffer told me his final Apple III system is up for sale. Call him at 301-722-2500 if you're interested.

There will be another chance for Paul and any other unlucky IIIers who missed the December Garage Sale this coming June. So start planning now!

More Paul....

Paul continues his prolific writing for us as indicated recently on the III board of the WAP TCS:

"How would you like to print thousands of pages of text with a simple command on your Apple III? It's a piece of cake with our SARA and my latest article tells you how. The article is finished and I just need to proof it. I have already uploaded the one mentioning laser printers along with two poems. I just started a general article on the Panasonic KX-P1124, I'll try to get it in by the next deadline.

And, the continuing quest to show that the Apple III can still beat the pants off of Tandy's DeskMate:

A few Radio Shack employees got surprised to see someone put their DeskMate up against an Apple III and lose. You should have seen the puzzled expression on their faces. The new DeskMate on the 386 Tandy seems much better and the help files come on screen almost as fast as EZP now, too bad it's not any easier to use.

When in Paris

Write in French using AppleWriter. It can be done, even in the good old USA thanks to Dave Rutenberg. Recently on CompuServe he noted that:

AppleWriter III by Paul Lutus was converted to FRENCH. (Version Français) ("Traitement de Texte"). I have the program, which comes OnThree diskettes, i.e., Disquette Principle, Utilitaires, &

Sauvegarde. I do not have the manual but, like the English version, there are HELP screens.

If there's enough interest, I will be happy to contact Dave and ask him for a copy of the program as well for our Public Domain library. There actually were a tremendous number of programs written for our III all over the world. But getting hold of copies of them now are next to impossible (heck, its very hard to find lesser-known English versions of Apple III products as well.)

Great Deals!

Titan Support (originally GR&D), the company that sells the Titan III+IIe cards (that turns your III into an Apple IIe) has a new number, 313-429-8547. After talking with Greg Stuk at Titan, he's agreed to another group purchase for the cards.

That means from February 1 through May 31, you can purchase the Titan cards for just $199. That's the lowest price these cards have been offered in quite some time. Greg says this may well be the last chance you'll have to obtain the cards at this price because they are made to order.

Greg has also agreed to make the original Titan III+II card available as well for just $99. This is a single-slot card that will turn your III into a 128K II Plus. But more importantly, it can act as a RAM card in native mode.

The III SIG has made available our PD disk 3UTL-18 to Titan and it will be included with all orders. The disk contains the drivers you need to run either the III+II or III+IIe as RAM drives, something you will not be able to live without once installed.

To order, call Titan Support or write them at their new address: 1225 Jeffrey Lane, Saline, Mi. 48176.

Exchanging Parts

Can you take an analog board from an Apple III disk drive and use it to covert an Apple II drive? III's Company Guru Ed Gooding told IIIer Michael Hughs on CompuServe the answer is: Maybe yes, maybe no.

I tried a Disk II with a III analog board and had mixed results with it. Pascal definitely didn't like it for some reason. I eventually scrapped the project due to its lack of reliability.

And What About...

Converting files from the III to the MAC? OnThree's Bob Consorti offers one method:

With either the UniDisk 3.5 or our CPS 3.5 disk drive for the III you can copy the files over to the 3.5 disk with the System Utilities or whatever. Then, on the Mac run the software called Apple File Exchange which is included with every Mac. It will look at the disk as if it were an Apple II ProDOS disk.

Remember that ProDOS was a descendent of the III's SOS. The Apple File Exchange program allows you to copy groups of files at a time. It will directly copy over text files. Other companies sell AFE translators that will convert AppleWorks (III E-Z Pieces) files directly into MicroSoft Works or Excel formats, so converting is fairly easy.

And if you use the CPS 800K 3.5 drive on the Apple III, you can plug the disk directly into the Mac and use it there too. The UniDisk 3.5 is specific to the Apple III or IIe and can't be used on a Mac.

Check local dealers or mail order for 800K UniDisk drives. Or you can order a CPS 800K drive and software from OnThree (206)-334-8001. They also sell the UniDisk software driver you'll need.

WAP III SIG PD Library

by David Ottalini

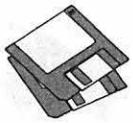
We offer two disks this month, III SIGers. The first disk, 3UTL-35, is called Font Generator III and was originally published by Apollo Software. It's a great font editing program you should find fun and easy to use. It's written in Business BASIC. Information files are on Side One and the program itself is on Side Two (including some font files for you to try out.)

Font Generator III not only allows you to design character fonts, but it also lets you check out how your fonts would look in different text modes (even with foreground and background colors.) As many as ten character fonts may be loaded at the same time, and the program can copy characters from one font into another one.

The second disk, 3INF-35 is another in our long-line of "Best of Ottalini" offerings. This time yours truly republishes all his articles from 1990 onto one disk.

They're fun. They're educational. And, most importantly, they're cheap. So grab a copy while they're still available (John Ruffatto will be working overtime to keep up with the expected demand.) As an additional added incentive, I've thrown in some article from a few other authors as well.

David Ottalini is the Apple III SIG Co-Chairman and faithful proponent of the Apple III computer.



Disketeria

Macintosh Disk Library

by Dave Weikert

New Disks

There are nine new disks this month; three System Utilities series (Mac Disks #16.20C through #16.22C), five System Software releases from Apple Computer and the Adobe Type Manager disk. We also revised Mac Disk #00.01, the Mac Catalog text files. Descriptions of the revised and new files are included below.

System Utilities Series

The System Utilities Disk Series now includes Mac Disks #16.01C through #16.22C. The latest three are Mac Disks #16.20C through #16.22C and include downloads. Descriptions of the new disks are below.

Most of the new and many of the older files are System 7.0 compatible. Not all of them have been tested by the Disketeria crew, so caution is advised. Because most of the newer files have been downloaded from telecommunications services, the majority of these files have been well tested by others.

Macintosh System Software

There are five new disks containing Macintosh system software. The first two, Personal LaserWriter LS Installation and StyleWriter Installation, are on 800K disks. The next three, IIe Installation, IIe Start-up and AppleTalk Remote Access Installation, are on 1.44M disks.

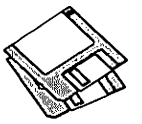
The Personal LaserWriter LS Installation and StyleWriter Installation disks are updates of the software for Apple's new printers. They provide fixes and enhancements that have been developed since the original software release. This includes faster printing for the StyleWriter, something that StyleWriter owners have been waiting for. This software may be used with System 6.0.5 or later and the TrueType font system extension on the disks. These disks are available individually at $3 each.

A card that emulates the operation of an Apple IIe computer can be added to a Mac LC. The software supporting this card is included on the two disk set we have just added to the library. These disks are available as a two disk set for $6.

Apple recently released software with the new PowerBook computers that permits them to hook up to remote AppleTalk networks. It provides some of the features of software provided by others such as Farallon Computing Inc., and Shiva Corp. That is, it permits you to remotely log onto a remote AppleTalk network via a modem. Unlike the Farallon and Shiva products, AppleTalk Remote Access is administered by individual users instead of a network administrator. There is some possibility that network security could be compromised by this approach and Apple has provided dial back security that disconnects after seven incorrect password entry attempts. Other security features permit limiting caller time and access to just the host node of the network. If you need the documentation, Apple sells the AppleTalk Remote Access package for $199; ask your Apple dealer about a discount for Pi members. The disk is available for $3.

Adobe Type Manager

As anticipated last month, we received Adobe Type Manager 2.03 and added it to our library. It is a system extension (INIT) that consumes approximately 200K of memory. Using ATM software under System 7 requires a minimum of 4 MB of RAM and under System 6, users should have at least 2 MB of RAM installed. Users of 2 MB Macintosh Classic and Macintosh LC systems will not have enough RAM to use ATM with most major applications. To use System 7 with



ATM, Macintosh Classic and LC users should upgrade their memory. Users of 68030-based Macintosh models, i.e., the 2 MB Macintosh Classic II and PowerBook 140, can use System 7's Virtual Memory feature to augment their systems.

Mac Disk Catalog

Mac Disketeria Catalogs are available at the office, at the monthly meetings and by mail order. Price is $3.00; add $1.50 to cover postage and handling if you order by mail. The catalog covers all Macintosh disks issued through July 1991.

This catalog includes only disk descriptions; alphabetical lists of programs and files were dropped from the catalog due to lack of space. We have added a disk to the library that includes a delimited text file listing all files in the Mac Disketeria. You may import the text file into the database of your choice for viewing and further manipulation. Additionally, a printed list arranged alphabetically by file name is available at the office for viewing or copying at the standard copy rate.

About ShareWare Requests

Please honor authors' requests for ShareWare fees if you decide to add these programs to your software library. ShareWare is an important distribution channel for low cost software and it is important to encourage authors to use this channel by paying them for their efforts.

Disk #00.01 — C 1
The Mac Catalog

Catalog.txt, By Dave Weikert. A delimited text file of all of the files included in our Mac Disketeria. It includes File Name, File Size, File Type, File Creator, Creation Date, Revision Date, and Folder and Disk Names. You should be able to import this list into your favorite database for sorting and selection and printing. You could also import the list into any word processor that accepts large text files.

Disk #16.20C — SU 20
System Utilities

Alias Maker 7.0: By James. H. Moore. Makes aliases of all applications on the start-up disk and places them in a folder. You may then launch applications from this folder or move the aliases to the Apple Menu folder. For System 7.0 and later.

AppDisk 1.3 *f*: **AppDisk 1.3**: By Mark Adams. A RAM disk that lets you use part of your RAM as a fast disk drive, without restarting your Mac. It is System 7.0 dependent. It has the ability to save its contents to provide some protection against loss of data due to system crashes. **AppDisk 1.3 Read ME!** is in text format. ***SW – $15.***

AppleEase 1.0 *f*: **AppleEase 1.0:** By Peter Kaplan. Two complementary files to enhance the use of the Apple Menu with System 7.0 and later. AppleEaseIn creates an alias of any file dropped on it and places it in the Apple Menu. AppleEaseOut removes Apple Menu items if you hold down the option key when accessing the menu item. AppleEase ReadMe is in text format. For System 7.0 and later.

Catalog 1.11 By Ola Boström. Creates a text file directory (catalog) of all floppy disks inserted after the program is launched. ***– SW $6.***

Compact Pro 1.32 *f*: **Compact Pro 1.32**: (Previously called Compactor.) By Bill Goodman. Lets you reduce the size of many of the files on your computer by "compressing" the data in the files. Also supports "archives" which are collections of files and folders combined into a single unit. You can simplify the storage of large amounts of data by grouping related items into an archive. **Compact Pro User's Guide** is in MacWrite format. ***– SW $25.***

CTC 1.2: By Brian Bechtel. Change type and/or creator of any file by dropping it onto this file. For System 7.0 and later.

DART™ 1.5 *f*: **DART™ 1.5**: By Apple Computer, Inc. A disk archiving and retrieval utility. Copy floppy disk to floppy disk with one or two disk drives or copy from floppy to archive format on your hard disk and vice versa. User Manual (MS Word) includes the documentation in Word format and **Release Notes 1.5** is in TeachText format. **DART™ Converter** is a HyperCard stack that permits batch conversion of earlier DART and Disk Copy formats and allows running DART by "remote control" across networks. System 6 compatible and System 7 savvy.

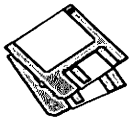
DeBNDLer 1.1 *f*: **DeBNDLer 1.1**: By Stephan Somogyi. Scans the active system folder or volume on which DeBNDLer resides and removes the Bundle information from PostScript font files. This increases the speed of rebuilding the desktop for systems with lots of PostScript font files. **Read Me—DeBNDLer 1.1** is in TeachText format.

Disk #16.21C — SU 21
System Utilities

DA Piggyback 1.4 *f*: **DA Piggyback 1.4**: By Kerry Clendinning. Converts Desk Accessories into stand-alone applications. **ReadMe** is in DOC-Maker application format. ***SW–$10.***

DiskDup+ 1.54 *f*: **Disk Dup+ 1.54**: By Roger D. Bates. A disk duplication program written to automate as much as possible the sector-by-sector duplication of a floppy onto one or more duplicates. Performs sector duplication of either 400K to 800K floppies. Formats copies as single or double sided. **Read Me - DiskDup+** is in TeachText format. ***SW – $20.***

DownLine 1.1.1 *f*: **DownLine 1.1.1** By Eric Bloodworth. An archive utility with set-and-forget preference files, background archiving and unarchiving, "drop-folder" operation, "drop-app" operation (with System



7), simultaneous operation with communications programs, and folder-oriented batch operations. It can (transparently and without much user intervention) decode Stuffit 1.5.1, Binhex and Packit archives and encode Binhex and Stuffit 1.5.1 archives. **DL 1.1.1 Rel Notes** is in text format. ***SW – $25.***

dTimer 2.0 *f*: **dTimer 2.0**: By David Hairston. Displays date or time, 2 alarms, countup or elapsed time and countdown time functions in four small custom windows on the desktop. **dTimer Docs** is in MacWrite format. Requires System 6.0.3 or later. ***SW – $5.***

DTPrinter 1.1 *f*: **DTPrinter 1.1**: By Leonard Rosenthol. Use this as an alternative to selecting printers from the Chooser. Creates icons on your desktop that represent specific printers. Just drag any document to the icon of your choice and follow the print dialogs after the application opens. **About DTPrinter** is in text format. Requires System 7.0 or later.

Easy Alias *f*: **Easy Alias**: By Allen H Simon. Drop any file onto Easy Alias to create an alias with the same name as the original file. **Read Me about Easy Alias** is in text format. Easy Alias Folder includes the program code. For System 7.0 and later.

EasyLaunch 7.0: By James H. Moore. Launches applications from the Apple Menu. You first have to create a folder into which you place EasyLaunch and aliases of all desired applications. This doesn't seem any easier than just installing the alias of each application in the Apple Menu folder. For System 7.0 and later.

File Typer 1.0.1 *f*: **File Typer 1.0.1**: By Daniel Azuma. Permits you to change a file's type, creator and finder flags. Compatible with System 6.0 and later and System 7.0 and later. **Typer read me** is in TeachText format.

FileEdit 3.0 *f*: **FileEdit 3.0**: By Dan Weisman. Changes and adds to the list of default application(s) the finder tries to use when an application cannot be found. **FileEdit.docs - Please Read!!!** is in text format. For System 7.0 and later. ***SW – $10.***

KeyHolder 7.0: By James H. Moore. Archives your old FKeys for use under System 7. Put this application or its alias in the Start-up Items folder. For System 7.0 and later.

LaserWriter Utility 7.1: By Apple Computer, Inc. The newest version of the application that sets up Apple's LaserWriter printers. This one supports the IIf and IIg printers as well as prior models. From the File menu you can download fonts, display a list of available fonts, print font samples and catalogs and initialize the printers hard disk A Utilities menu lets you name the printer, set or clear the start-up page, get the current page count, restart the printer, download a PostScript file and a number of other functions.

Disk #16.22C — SU 22
System Utilities

Lulluby *f*: **Lullaby**: By James H. Moore. A screen saver with "hot corner" selection for invoking immediately. Put this application or its alias in the Start-up Items folder. For System 7.0 and later.

No Cache 1.0 *f*: **No Cache 1.0**: By Tom Thompson. Turns 68040 processor caches in the Quadras off and on. This allows those applications that do self-modifying code no-nos to operate. No Cache doesn't change the operating mode of the caches: it simply disables them.

Nom de Plume 1.1 *f*: **Nom de Plume 1.1**: By Bill Monk. An elegant application that creates an alias of a folder or file and places it in a designated folder (such as the Apple Menu folder, etc.). Excellent for repetitive installation of aliases in the same folder. For System 7.0 and later.

PopOver 7.0: By James H. Moore. Launches applications from the Apple Menu. You first have to create a folder into which you place PopOver and aliases of all desired applications. Similar to EasyLaunch but doesn't require the presence of the Balloon Help menu. For System 7.0 and later.

Rename Delay Editor *f*: **Rename Delay Editor**: By Adam Stein. Lets you turn on or off or modify the rename delay time for the Finder. **Rename Delay Editor! Read Me!** and **Rename Delay! Order Form.MW** are in MacWrite format. Blurbs *f* includes information in text format on some other offerings. For System 7.0 and later. ***SW – $10.***

Reset ADB: By Alan Danziger. A small application to reset the Apple Desktop Bus (ADB).

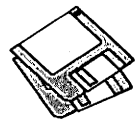
Set Clock 2.3: By Jim Leitch. Synchronize your Mac to within one second with a 10 second call to Toronto Canada, Washington D.C. or Chesapeake Virginia.

Simsonite 1.1 *f*: **Simsonite 1.1**: By Don Munsil. Create new suitcases without Font/DA Mover. **Simsonite 1.1 Read Me** is in text format. Compatible with System 6 and 7.

Slot Investigator 1.1: By Brett Bilbrey. Reads the slot resources information from any circuit cards installed in Mac II family computers. ***Fragware – send code fragments or programs.***

SoftLock 1.3: By David Davies-Payne. Place a software lock on any disk to prevent changing its contents. A password may be included so that only those who know it may change the locked status. ***SW – $20.***

Sound Extractor 1.0 *f*: **Sound Extractor 1.0**: By Alberto Ricci. Extracts sound resources from SoundMover and SoundEdit suitcases and creates a folder with sounds that can be played from within System 7 by double clicking them. Also extracts any contained sound resources from applications, stacks and other files. For System 7.0 and later. **SoundExtractor Doc** is in text format. ***SW – $5.***



Sound Mover Package 1.74 ƒ: By Riccardo Ettore. A package of four sound programs for different versions of the Mac and System Software. **SoundMover 1.74** moves sounds into and out of the System file and automatically converts between several different (and incompatible) sound formats. **IBeep2** lets you pick an alternative to the standard sound of the Macintosh beep and works with Mac Plus and SE users running System 4.1 and later. SndControl contains two complementary CDEV's to Apple's Sound control panel, one for System 6 and one for System 7. **StartupSndInit** plays compatible sounds placed in the System Folder. **SMP Read Me** is in TeachText format and **SndControl Manual** and **Format 1 vs Format 2 snds...** are in text format. ***SW – $25.***

Spam 1.0.1 ƒ: **Spam 1.0.1**: By Aron Nelson. Allows you to create groups of items in your Apple Menu. When you activate one of the groups, only the individual menu items in that group appear for selection. **FinderHack 1.0ß1** lets you create aliases right into the Apple menu. Requires System 7.0 or later. **Spam Docs.readme** and **In this package** are in TeachText format. ***SW – $15.***

Suntar 1.1 ƒ: **Suntar 1.1**: By Sauro Speranza. Allows any Mac with a Superdrive to exchange files with a SPARCstation, or any UNIX workstation having a 720 or 1440 Kbyte, 3.5 inch, MFM floppy disk drive. **suntar 1.1.doc**is in text format.

System Picker 1.0b11 ƒ: **System Picker 1.0b11** By Kevin Aitken. Automatically searches all mounted hard drives to list all System folders and then lets you select one of the Systems from the list to boot from. Perfect for switching between System 6.0.X and 7.0. This version can select System Folders on partitioned drives. **Read .Me (System Picker 1.0b11)**is in text format.

TrashMan 3.0 ƒ: **TrashMan 3.0**: By Dan Walkowski. A "smart" trash utility that automatically empties your trash after a pre-selected time has elapsed since you threw each file in the trash. **TrashMan 3.0 Docs** is in TeachText format. Requires System 7.0 or later. ***SW – $5.***

Sys Sftwre — SS.LW
Personal LW LS Installation

Personal LW LS ƒ: **Backgrounder** 1.3, **Font/DA Mover** 4.1, **Personal LW LS** 7.1, **Personal LW LS Prep** 1.0, **PrintMonitor** 6.1, **Serial Switch** 1.1, **TrueType™** 1.0 and TrueType™ Fonts with Chicago, Geneva, Monaco and New York. For System 7.0 and later or 6.0.5 and later with TrueType INIT.

Cleaning page, Installer, Installer Script, TeachText 1.2 and **ReadMe** are the supporting files.

Sys Sftwre — SS.SW
StyleWriter Installation

StyleWriter Software ƒ: **Backgrounder** 1.3, **Font/DA Mover** 4.1, **Image Utility** 1.0, **PrintMonitor** 6.1, **StyleWriter** 7.1, **TrueType™** 1.0 and TrueType™ Fonts with Chicago, Geneva, Monaco and New York. For System 7.0 and later or 6.0.5 and later with TrueType INIT.

Installer, Installer Script, TeachText 1.2 and **ReadMe** are the supporting files.

Sys Sftwre — SS.IIe I
IIe Installation

Apple HD SC Setup 3.0, **BASIC.SYSTEM, IIe Script, IIe Start-up** 2.0, **Installer, ProDOS, Read Me** and **TeachText** 1.2.

System Folder: **Brightness** 1.0, **Color** 3.3.2, **Finder** 6.0.8, **General** 3.3.3, **Keyboard** 3.3.1, **Monitors** 4.3, **Mouse** 3.3.1, **Portable** 1.2, **ProDOS File System** 1.0, **Startup Device** 3.3.1 and **System**. For Mac LC's with IIe card.

Sys Sftwre — SS.IIe SU
IIe Startup

BASIC.SYSTEM, IIe Startup 2.0 and **ProDOS**.

System Folder: **AppleTalk ImageWriter** 2.7, **Color** 3.3.2, **Finder** 6.0.8, **General** 3.3.3, **ImageWriter** 2.7, **Keyboard** 3.3.1, **Laser Prep** 7.0, **LaserWriter** 7.0, **Monitors** 4.3, **Mouse** 3.3.1, **Portable** 1.2, **ProDOS File System** 1.0, **Startup Device** 3.3.1 and **System**. For Mac LC's with IIe card.

Sys Sftwre — SS.AT_RA
AppleTalk Remote Access Installer

Installer, Network Extension 7.0.1, **Read Me, Remote Access** 1.0, **Remote Access Aliases** 1.0, **Remote Access resources, Remote Access Script** and **Remote Access Setup** 1.0.

AppleTalk Files: **AppleTalk** 57.0.1, **EtherTalk Phase** 2 2.3, **Network** 2.3.2, **Network Resources** 57.0.1, **Remote Only** 1.0 and **Responder** 2.0.3.

Dial Up: **Abaton Interfax 24/96, Apple Modem 2400, AppleTalk Remote Access** 1.0, **DSI 9624LE, DSI 9624LE Plus, Farallon Remote V.32, Global Village Teleport, Hayes Smartmodem 2400, Hayes Ultra 96, MicroCom MacModem V.32, Microcom MicroPorte 1042, MNPLinkTool** 1.0, **MultiTech MultiModemV32, Practical Peripherals 2400SA, Practical Peripherals 9600SA, Prometheus ProModem 2400, Prometheus ProModem Plus, Prometheus ProModem Ultima, Serial Port Arbitrator** 1.0, **Supra SupraMod-em 2400, Telebit T1600, US Robotics Courier 2400e** and **US Robotics Courier V.32bis.**

Serial Switch: **Read Me (Serial Switch)** and **Serial Switch** 1.1.

Sys Sftwre — SS.ATM
Adobe Type Manager® 2.0.3

Adobe Garamond, AGarIta, AGarReg, AGarSem, AGarSemIta, READ ME, TeachText 1.2, **~ATM 68000** 2.0.3, **~ATM 68020/030** 2.0.3, **~ATM™** 2.0.3 and **~Font Porter™ 1.0.**

MACINTOSH DISKS & WAP DISKETERIA ORDER FORM

Pi Library
__ 0.01 - C 01

Anti-Virus Utilities
__ 5 disk set: $15
__ 1.01D - AV 1
__ 1.02D - AV 2
__ 1.03D - AV 3
__ 1.04D - AV 4
__ 1.05D - AV 5

Desk Accessories
__ 15 disk set; $45
__ 2.01C - DA's 1
__ 2.02C - DAs 2
__ 2.03C - DAs 3
__ 2.04C - DAs 4
__ 2.05C - DAs 5
__ 2.06C - DAs 6
__ 2.07C - DAs 7
__ 2.08C - DAs 8
__ 2.09C - DAs 9
__ 2.10C - DAs 10
__ 2.11C - DAs 11
__ 2.12C - DAs 12
__ 2.13C - DAs 13
__ 2.14C - DAs 14
__ 2.15C - DAs 15

FKeys (Function Keys)
__ 4.01A - FKs 1
__ 4.02A - FKs 2

ImageWriter Fonts
__ 15 disk set; $45
__ 5.01 - IW 1
__ 5.02 - IW 2
__ 5.03 - IW 3
__ 5.04 - IW 4
__ 5.05 - IW 5
__ 5.06 - IW 6
__ 5.07 - IW 7
__ 5.08 - IW 8
__ 5.09 - IW 9
__ 5.10 - IW 10
__ 5.11 - IW 11
__ 5.12 - IW 12
__ 5.13 - IW 13
__ 5.14 - IW 14
__ 5.15 - IW 15

LaserWriter Fonts
__ 25 disk set; $75
__ 6.01 - LW 1
__ 6.02 - LW 2
__ 6.03 - LW 3
__ 6.04 - LW 4
__ 6.05 - LW 5
__ 6.06 - LW 6
__ 6.07 - LW 7
__ 6.08 - LW 8
__ 6.09 - LW 9
__ 6.10 - LW 10
__ 6.11 - LW 11
__ 6.12 - LW 12
__ 6.13 - LW 13
__ 6.14 - LW 14
__ 6.15 - LW 15
__ 6.16 - LW 16
__ 6.17 - LW 17
__ 6.18 - LW 18
__ 6.19 - LW 19
__ 6.20 - LW 20
__ 6.21 - LW 21
__ 6.22 - LW 22
__ 6.23 - LW 23
__ 6.24 - LW 24
__ 6.25 - LW 25

TrueType Fonts
__ 7 disk set; $21
__ 7.01 - TT 1
__ 7.02 - TT 2
__ 7.03 - TT 3
__ 7.04 - TT 4
__ 7.05 - TT 5
__ 7.06 - TT 6
__ 7.07 - TT 7

INIT's & CDEV's
__ 24 disk set; $72
__ 9.01A - I/C 1
__ 9.02A - I/C 2
__ 9.03A - I/C 3
__ 9.04A - I/C 4
__ 9.05A - I/C 5
__ 9.06A - I/C 6
__ 9.07A - I/C 7
__ 9.08A - I/C 8
__ 9.09A - I/C 9
__ 9.10A - I/C 10
__ 9.11A - I/C 11
__ 9.12A - I/C 12
__ 9.13A - I/C 13
__ 9.14A - I/C 14
__ 9.15A - I/C 15
__ 9.16A - I/C 16
__ 9.17A - I/C 17
__ 9.18A - I/C 18
__ 9.19A - I/C 19
__ 9.20A - I/C 20
__ 9.21A - I/C 21
__ 9.22A - I/C 22
__ 9.23A - I/C 23
__ 9.24A - I/C 24

Miscellaneous
__ 10.01 - M 1
__ 10.03 - M 3

Paintings (MacPnt)
__ 5 disk set; $15
__ 11.01 - P 1
__ 11.02 - P 2
__ 11.03 - P 3
__ 11.04 - P 4
__ 11.05 - P 5

Digitized Sounds
__ 31 disk set; $93
__ 12.01 - S 1
__ 12.02 - S 2
__ 12.03 - S 3
__ 12.04 - S 4
__ 12.05 - S 5
__ 12.06 - S 6
__ 12.07 - S 7
__ 12.08 - S 8
__ 12.09 - S 9
__ 12.10 - S 10
__ 12.11 - S 11
__ 12.12 - S 12
__ 12.13 - S 13
__ 12.14 - S 14
__ 12.15 - S 15
__ 12.16 - S 16
__ 12.17 - S 17
__ 12.18 - S 18
__ 12.19 - S 19
__ 12.20 - S 20
__ 12.21 - S 21
__ 12.22 - S 22
__ 12.23 - S 23
__ 12.24 - S 24
__ 12.25 - S 25
__ 12.26 - S 26
__ 12.27 - S 27
__ 12.28 - S 28
__ 12.29 - S 29
__ 12.30 - S 30
__ 12.31 - S 31

Telecommunications
__ 9 disk set; $27
__ 13.01A - T 1
__ 13.02A - T 2
__ 13.03A - T 3
__ 13.04A - T 4
__ 13.05A - T 5
__ 13.06A - T 6
__ 13.07A - T 7
__ 13.08A - T 8
__ 13.09 - T 9

Programmer/Hacker
__ 25 disk set; $75
__ 14.01 - PH 1
__ 14.02 - PH 2
__ 14.03 - PH 3
__ 14.04 - PH 4
__ 14.05 - PH 5
__ 14.06 - PH 6
__ 14.07 - PH 7
__ 14.08 - PH 8
__ 14.09 - PH 9
__ 14.10 - PH 10
__ 14.11 - PH 11
__ 14.12 - PH 12
__ 14.13 - PH 13
__ 14.14 - PH 14
__ 14.15 - PH 15
__ 14.16 - PH 16
__ 14.17 - PH 17
__ 14.18 - PH 18
__ 14.19 - PH 19
__ 14.20 - PH 20
__ 14.21B - PH 21
__ 14.22A - PH 22
__ 14.23 - PH 23
__ 14.24 - PH 24
__ 14.25 - PH 25

Miscellaneous Utils
__ 11 disk set; $33
__ 15.01A - MU 1
__ 15.02A - MU 2
__ 15.03A - MU 3
__ 15.04A - MU 4
__ 15.05A - MU 5
__ 15.06A - MU 6
__ 15.07A - MU 7
__ 15.08A - MU 8
__ 15.09A - MU 9
__ 15.10A - MU 10
__ 15.11A - MU 11

System Utilities
__ 22 disk set; $66
__ 16.01C - SU 1
__ 16.02C - SU 2
__ 16.03C - SU 3
__ 16.04C - SU 4
__ 16.05C - SU 5
__ 16.06C - SU 6
__ 16.07C - SU 7
__ 16.08C - SU 8
__ 16.09C - SU 9
__ 16.10C - SU 10
__ 16.11C - SU 11
__ 16.12C - SU 12
__ 16.13C - SU 13
__ 16.14C - SU 14
__ 16.15C - SU 15
__ 16.16C - SU 16
__ 16.17C - SU 17
__ 16.18C - SU 18
__ 16.19C - SU 19
__ 16.20C - SU 20
__ 16.21C - SU 21
__ 16.22C - SU 22

Word Processing Utils
__ 17.01A - WP 1
__ 17.02A - WP 2
__ 17.03A - WP 3

Adobe Screen Fonts
__ 16 disk set; $48
__ 18.01A - AF 1
__ 18.02A - AF 2
__ 18.03A - AF 3
__ 18.04A - AF 4
__ 18.05A - AF 5
__ 18.06A - AF 6
__ 18.07A - AF 7
__ 18.08A - AF 8
__ 18.09A - AF 9
__ 18.10A - AF 10
__ 18.11A - AF 11
__ 18.12A - AF 12
__ 18.13A - AF 13
__ 18.14A - AF 14
__ 18.15A - AF 15
__ 18.16A - AF 16

HyperCardStackWare
__ 44 disk set; $132
__ 19.01A - SW 1
__ 19.02A - SW 2
__ 19.03 - SW 3
__ 19.04 - SW 4
__ 19.05 - SW 5
__ 19.06 - SW 6
__ 19.07 - SW 7
__ 19.08 - SW 8
__ 19.09 - SW 9
__ 19.10 - SW 10
__ 19.11 - SW 11
__ 19.12 - SW 12
__ 19.13 - SW 13
__ 19.14 - SW 14
__ 19.15 - SW 15
__ 19.16 - SW 16
__ 19.17 - SW 17
__ 19.18 - SW 18
__ 19.19 - SW 19
__ 19.20 - SW 20
__ 19.21 - SW 21
__ 19.22 - SW 22
__ 19.23 - SW 23
__ 19.24 - SW 24
__ 19.25 - SW 25
__ 19.26 - SW 26
__ 19.27 - SW 27
__ 19.28 - SW 28
__ 19.29 - SW 29
__ 19.30 - SW 30
__ 19.31 - SW 31
__ 19.32 - SW 32
__ 19.33 - SW 33
__ 19.34 - SW 34
__ 19.35 - SW 35 †
__ 19.36 - SW 36 †
__ 19.37 - SW 37
__ 19.38 - SW 38

Mac II Series
__ 13 disk set; $39
__ 20.01 A- M II 1
__ 20.02 A- M II 2
__ 20.03 A- M II 3
__ 20.04 A- M II 4
__ 20.05 A- M II 5
__ 20.06 A- M II 6
__ 20.07 A- M II 7
__ 20.08 B- M II 8
__ 20.09 B- M II 9
__ 20.10 A- M II 10
__ 20.11 A- M II 11
__ 20.12 A- M II 12
__ 20.13 A- M II 13

HyperCardExternals
__ 5 disk set; $15
__ 21.01 - HE 1
__ 21.02 - HE 2
__ 21.03 - HE 3
__ 21.04 - HE 4
__ 21.05 - HE 5

Serially Numbered
__ Disk 30/92
__ Disk 74/75
__ Disk 77/78
__ Disk 80/84
__ Disk 85/89
__ Disk 91/95
__ Disk 96/104
__ Disk 105/106
__ Disk 108/128
__ Disk 134/143
__ Disk147
__ Disk 150/151
__ Disk 153

Best of Pi Series
__ 10 disk set; $35

System Software
__ 6.0.5 - 4 disk set; $12
__ 6.0.7 - 4 disk set; $12
__ 6.0.8 - 4 disk set; $12
__ 7.0 - 9 disk set; $20
__ LsrWrtr LS Install; $3
__ StlWrte Install; $3
__ TrueType - 2 disk set; $6
__ Adobe Type Mgr; $3
__ 7.0.1 - 6 disk set; $20 (1.44M)
__ Apple IIe - 2 disk set; $6 (1.44M)
__ AT Rmt Acc.- 2 disk set; $6 (1.44M)

HyperCard Update
__ 1.2.5 - 3 disk set; $9
__ 2.0 - 5 disk set; $15

19.35† 6 disk set; $15
19.36† 2 disk set; $7

HyperCard Upgrade requires HyperCard proof of purchase; any of original disk, first page of manual, receipt or previous HyperCard Upgrade disk.

Mail this form with your check to :
Disketeria
Washington Apple Pi
7910 Woodmont Avenue, Suite 910
Bethesda, Maryland 20814

Number of Disks	Member Price @	Extended
Singles		
__ 4 or less @	$4.00=	
__ 5 or more @	$3.50=	
__ Sets (marked above)	$(above)	
+ postage $1.00/disk, maximum $5.00.	$3.00=	
__ Disk Catalogs + postage @ $1.50		
TOTAL AMOUNT DUE	$	

Are you a member of Washington Apple Pi, Ltd.? Y/N __ If Yes, Member Number _____.
All payments must be in U.S. funds drawn against U.S. banking institutions.
Non-members add $3.00 per disk to listed prices.

Name

Box Number, Apartment, Suite, etc.

Street Address

City **State** **Zip Code**

Day Telephone **Evening Telephone**

FOR YOUR REFERENCE - THE NUMBERS SHOWN IN PARENTHESES ( ) AFTER THE DISK NAMES ARE THE OLD DISK NUMBERS

Apple Disk Library

compiled by John Ruffatto

The Apple Disk Library has been updated and reformatted to enable you to more easily and quickly locate those disks in which you are interested. All 3.5" disks are listed first, followed by the complete listing of all 5.25" disks. Look for the and icons which distinguish them.

3.5" DISKS **(SW) INDICATES SHAREWARE**

Apple II GS

SYSTEM DISKS (2 DISK SET $6)
__ GSAS-01 System Disk V. 5.0.4
__ GSAS-02 System Tools V. 5.0.4

IIGS COMMUNICATIONS
__ GSCM-01B FreeTerm (2003)
__ GSCM-02A SnowTerm (SW)

IIGS DEMO (16 DISK SET-$48)
__ GSDM-01 Cartooner's Demo
__ GSDM-02 Deluxe Paint II Demo
__ GSDM-03 Music Studio Demo
__ GSDM-04 Beagle Writes GS Demo
__ GSDM-05 Calendar Crafter Demo
__ GSDM-06 G.A.T.E. Demo
__ GSDM-07 Crystal Quest, Dragon Wars, Pyramid GS
__ GSDM-08 Diversi-Tune, Nexus, ProSel 16, Salvation
__ GSDM-09 Shanghai Demo & Extra Tile Sets
__ GSDM-10 Medley V. 2.0 Demo
__ GSDM-11 Battle Chess Demo
__ GSDM-12 Task Force Demo
__ GSDM-13 Genesys, ProTerm 2.2, TIC
__ GSDM-14 Space Harrier Demo
__ GSDM-15 HCGS Screens, MasterTracks Jr., SysEx MIDI
__ GSDM-16 AC Basic, DesignMaster, GS16 Forth, Micol, MicroDot

IIGS DESK ACCESSORIES (11 DISK SET-$33)
__ GSDA-01 Desk Accessories 1 (2020) (SW)
__ GSDA-02 Desk Accessories 2 (SW)
__ GSDA-03 Desk Accessories 3 (SW)
__ GSDA-04 Desk Accessories 4 (SW)
__ GSDA-05 Desk Accessories 5 (SW)
__ GSDA-06 Desk Accessories 6 (SW)
__ GSDA-07 Desk Accessories 7 (SW)
__ GSDA-08 Desk Accessories 8 (SW)
__ GSDA-09 Desk Accessories 9 (SW)
__ GSDA-10 Desk Accessories 10 (SW)
__ GSDA-11 Desk Accessories 11 (SW)

IIGS DEVELOPER (7 DISK SET-$21)
__ GSDV-01 Demo Source Code 1 (2005)
__ GSDV-02 Demo Source Code 2 (2006)
__ GSDV-03 Shell Applications (EXE) 1 (SW)
__ GSDV-04 Shell Applications (EXE) 2 (SW)
__ GSDV-05 Miscellaneous Developer Files 1 (SW)
__ GSDV-06 Miscellaneous Developer Files 2
__ GSDV-07 Miscellaneous Developer Files 3

IIGS FONTS (27 DISK SET-$81)
__ GSFT-01 A-Plain
__ GSFT-02 A-Fancy, Foreign, Graphic
__ GSFT-03 B-Plain, Foreign, Graphic
__ GSFT-04 B-Plain, Fancy
__ GSFT-05 C-Plain
__ GSFT-06 C-Plain
__ GSFT-07 C-Graphic, Foreign
__ GSFT-08 C-Fancy
__ GSFT-09 D-Plain, Fancy, Foreign, Graphic
__ GSFT-10 E-Plain, Fancy, Foreign, Graphic
__ GSFT-11 F-Plain, Fancy, Graphic
G-Foreign, Fancy
__ GSFT-12 G-Plain, Graphic
__ GSFT-13 H-Fancy, Foreign
I
__ GSFT-14 H-Graphic, Plain
J
__ GSFT-15 K
M-Fancy
__ GSFT-16L M-Foreign
__ GSFT-17 M-Plain
__ GSFT-18 M-Graphic
__ GSFT-19 N-Plain, Fancy
__ GSFT-20 N-Foreign, Graphic
O
P-Foreign, Graphic
__ GSFT-21 P-Plain, Fancy
__ GSFT-22 Q
R
__ GSFT-23 S-Fancy
T-Fancy
__ GSFT-24 S-Plain, Graphic
__ GSFT-25 S-Foreign
T-Plain
__ GSFT-26 T-Foreign, Graphic
U
V
__ GSFT-27 W
Y
Z

IIGS GAMES (22 DISK SET-$66)
__ GSGM-01A Mean 18 Golf Courses (2007)
__ GSGM-02A Mean 18 Golf Courses 2 (2018)
__ GSGM-03 Bouncing Bluster Boot Disk
__ GSGM-04 Bouncing Bluster Data and Docs
__ GSGM-05 Bouncing Bluster Consn. Set
__ GSGM-06 Games 1
__ GSGM-07 Games 2
__ GSGM-08 Games 3
__ GSGM-09 Games 4
__ GSGM-10 Games 5
__ GSGM-11 Games 6
__ GSGM-12 Games 7
__ GSGM-13 Games 8
__ GSGM-14 Games 9
__ GSGM-15 Games 10
__ GSGM-16 Games 11
__ GSGM-17 Mean 18 Golf Courses 3
__ GSGM-18 Games 12 (SW)
__ GSGM-19 Games 13 (SW)
__ GSGM-20 Games 14
__ GSGM-21 Columns GS V. 2.0 (SW)
__ GSGM-22 Lode Runner GS

IIGS GRAPHICS (21 DISK SET-$63)
__ GSGX-01 Demo Disk A (2002)
__ GSGX-02 Slide Show 1 (2004)
__ GSGX-03 Slide Show 2 (2016)
__ GSGX-04 Slide Show 3 (2017)
__ GSGX-05 Nucleus Demo-ROM 3
__ GSGX-06 GIF Graphics 1 (SW)
__ GSGX-07 Pics and Utilities 1 (SW)
__ GSGX-08 Pics and Utilities 2
__ GSGX-09A Pics and Utilities 3
__ GSGX-10 Pics and Utilities 4 (SW)
__ GSGX-11 Modulae
__ GSGX-12 Paula Abdul Demo
__ GSGX-13A Pics and Utilities 5 (SW)
__ GSGX-14 Slide Show 4
__ GSGX-15 Slide Show 5
__ GSGX-16 Nucleus Demo-ROM 1 (2024)
__ GSGX-17 PSGS Graphics 1-Color
__ GSGX-18 PSGS Graphics 2-Mono

___ GSGX-19 PSGS Graphics 3-Mono
___ GSGX-20 Marilyn Monroe Slide Show
___ GSGX-21 Pics and Utilities 6 (SW)

IIGS HYPERSTUDIO (21 DISK SET-$63)
___ GSHS-01 HS System-Demo Version
___ GSHS-02 HS Demo-Demo Version
___ GSHS-03 HS Sounds-Demo Version
___ GSHS-04 More Stacks-Demo Version
___ GSHS-05 More Stacks 2-Demo Version
___ GSHS-06 Video Demo-Demo Version
___ GSHS-07 Comm Stack-Demo Version
___ GSHS-08 MUG 087-Demo Version
___ GSHS-09 USA-Demo Version
___ GSHS-10 HS Art 2-Demo Version
___ GSHS-11 Miscellaneous HS Stacks 1
___ GSHS-12 Miscellaneous HS Stacks 2 (SW)
___ GSHS-13 Arizona Stack Disk 1
___ GSHS-14 Arizona Stack Disk 2
___ GSHS-15 Photography Stack Disk 1
___ GSHS-16 Photography Stack Disk 2
___ GSHS-17 1906 SF Earthquake & Fire Disk 1
___ GSHS-18 1906 SF Earthquake & Fire Disk 2
___ GSHS-19 Miscellaneous HS Stacks 3
___ GSHS-20 Miscellaneous HS Stacks 4
___ GSHS-21 Miscellaneous HS Stacks 5 (SW)

IIGS ICONS (8 DISK SET-$24)
___ GSIC-01A Finder Icons 1 (2022) (SW)
___ GSIC-02A Finder Icons 2 (SW)
___ GSIC-03A Finder Icons 3 (SW)
___ GSIC-04A Finder Icons 4 (SW)
___ GSIC-05A Finder Icons 5 (SW)
___ GSIC-06A Finder Icons 6 (SW)
___ GSIC-07A Finder Icons 7 (SW)
___ GSIC-08 Finder Icons 8 (SW)
___ GSIC-09 Finder Icons 9 (SW)
___ GSIC-10 Finder Icons 10 (SW)
___ GSIC-11 Finder Icons 11 (SW)

IIGS MISCELLANEOUS
___ GSMS-01 New Member's Disk (2000) (SW)
___ GSMS-02 GS Disk Library Catalog Disk 1
___ GSMS-03 GS Disk Library Catalog Disk 2

IIGS MUSIC (12 DISK SET $36)
___ GSMU-01A SoundSmith and Songs (SW)
___ GSMU-02 SoundSmith Songs 1
___ GSMU-03 SoundSmith Songs 2
___ GSMU-04 SoundSmith Songs 3
___ GSMU-05 SoundSmith Songs 4
___ GSMU-06 SoundSmith Songs 5
___ GSMU-07 Deversi-Tune (C) Songs 1
___ GSMU-08 Music Studio Songs 1
___ GSMU-09 MS Songs 2 (Golden Album Rock 2)
___ GSMU-10 A Variety Pack of Songs
___ GSMU-11 SoundSmith Songs 6
___ GSMU-12 MCS Song "Slide Show"

IIGS SOUNDS (16 DISK SET-$48)
___ GSSN-01A Sounds 1 (2014)
___ GSSN-02A Sounds 2-Nostalgia (2015)
___ GSSN-03 Sounds 3
___ GSSN-04 Sounds 4
___ GSSN-05 Sounds 5-Simpsons 1
___ GSSN-06 Sounds 6-Simpsons 2
___ GSSN-07 Sounds 7
___ GSSN-08 Sounds 8
___ GSSN-09 Sounds 9
___ GSSN-10 Sounds 10
___ GSSN-11 Sounds 11
___ GSSN-12 Sounds 12-Cartoons 1
___ GSSN-13 Sounds 13-Cartoons 2
___ GSSN-14 Sounds 14-Cartoons 3
___ GSSN-15 Sounds 15-Cartoons 4
___ GSSN-16 Sounds 16-Cartoons 5

IIGS UTILITIES (9 DISK SET-$27)
___ GSUT-01B Utilities 1 (2001)
___ GSUT-02 JumpStart Prog Sel V. 3 (2021)
___ GSUT-03A Utilities 2 (2028) (SW)
___ GSUT-04A Utilities 3 (2029) (SW)
___ GSUT-05A Utilities 4 (SW)
___ GSUT-06A ZZ Copy-V. 2.21 Disk Copier
___ GSUT-07A Utilities 5 (SW)
___ GSUT-08C Utility Works GS V. 0.9.2 (SW)
___ GSUT-09 Utilities 6 (SW)
___ GSUT-10 Utilities 7 (SW)
___ GSUT-11A Utility Works Launcher V. 2.2.3 (SW)

3.5" DISKS **(SW) INDICATES SHAREWARE**

APPLE II

APPLE SYSTEM DISKS
___ 2APS-01 System Disk - Utilities V. 3.1

COMMUNICATIONS
___ 2COM-01 TCS Instructions 1.05
___ 2COM-02 Applenet V. 1.3

EDUCATION
___ 2EDU-01 Newton's Apple/Cocaine & Teeth

TECH NOTES
___ 2TEN-01 IIGS-GSOS-About-Index
___ 2TEN-02 IIc-IIe-IMWR — etc.
___ 2TEN-03 FTNS-STDS-Tidbits

UTILITIES
___ 2UTL-01 New Member Disk 2.01
___ 2UTL-02 DB Master V.5 (ShareWare)

5.25" DISKS **(SW) INDICATES SHAREWARE**

APPLE II

** indicates single sided disks

APPLE SYSTEM DISKS
___ APSD-01 System Disk-Utilities V. 3.1

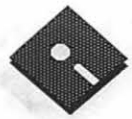
APPLEWORKS
___ APWK-01 Desk, Printer and Money Helpers (813/814)
___ APWK-02 Food. Lists, etc. (815/816)
___ APWK-03 Reserved for Tax Templates

COMMUNICATIONS
___ COMM-01 TCS Inst. 1.05 A & B- Disk 1 of 2 (825)
___ COMM-02 TCS Inst. 1.05 A & B- Disk 2 of 2 (826)
___ COMM-03** WAPABBS.1 Documentation(121)
___ COMM-04 WAPABBS.1 (135/136)
___ COMM-05 DI COMM-(SW)(503)
___ COMM-06 Kermit 3.78-Kermit File Transfer (516/820)
___ COMM-07 CommTerm and Telecom (808/817)
___ COMM-08 MicroModem II (SW)-Hayes Term(116/169)

CP/M
___ CP/M-01** Master Catalog (401)
___ CP/M-02 Utilities I and II (402/404)
___ CP/M-03 Communications (403/409)
___ CP/M-04 ZCPR2 Install and Utilities (406/408)
___ CP/M-05 ZCPR2 Doc. and Essential Utilities (407/410)
___ CP/M-06 Text Editor and Spreadsheet (411/412)
___ CP/M-07 MDM740 (SSC. Comm, 7710, & A-CAT)(413/414)
___ CP/M-08 Kermit Source and Running Code (416/418)
___ CP/M-09** Kermit Documentation (417)
___ CP/M-10 Utilities (419)
___ CP/M-11 Small C. Compiler (420)

EAMON ADVENTURES
___ EAMN-01 Utilities II and III (220/221)
___ EAMN-02* Dungeon Designer and City /Clouds(180/229)
___ EAMN-03 Beginners Cave (Master) & Alt (181/214)
___ EAMN-04* Lair of Minotaur and Cave of the Mind (182/183)
___ EAMN-05* Zyphur Riverventure and Castle/Doom(184/185)
___ EAMN-06* Death Star and Devil's Tomb (186/187)
___ EAMN-07* Caves of Treasure Is. and Furioso (188/189)
___ EAMN-08* Magic Kingdom and Tomb of Molinair (190/191)
___ EAMN-09* Lost Island and Abductor's Quarters (192/193)
___ EAMN-10* Quest and Undergr City (194/195)
___ EAMN-11* Merlin's and Hogarth Castle (196/197)
___ EAMN-12* Deathtrap and Black Death (198/199)
___ EAMN-13* Temple of Ngurct Black Mountain (200/201)
___ EAMN-14* Nuclear Nightmare /Feast of Carroll (202/203)
___ EAMN-15* Master's Dungeon /Crystal Mountain (204/205)
___ EAMN-16* Lost Adventure and Manxome Foe(206/207)
___ EAMN-17* The Gauntlet and Caverns of Langst (208/209)
___ EAMN-18* Future Quest and House of Secrets (210/211)
___ EAMN-19* Sewers/ Chi /Slave Pits of Kzorland(212/213)
___ EAMN-20* Lifequest and Swordquest (215/216)
___ EAMN-21* Priests of Xim! and Heroes Castle (217/218)
___ EAMN-22* Temple of the Undead and Quest (223/224)
___ EAMN-23* Caves/Mondamen &Orb of Polaris(225/226)
___ EAMN-24* Death's Gate /Escape From Orc's Lair(227228)
*-Requires EAMN-03

EDUCATION
___ EDUC-01 Education and Personal Education (76/110)
___ EDUC-02 Personal Education 2 and Education 3 (131/139)
___ EDUC-03 Math / Science and Education 4 (127/140)



___ EDUC-04 Advanced Math and Vectors / Motio (510/513)
___ EDUC-05 Albert Camus Int and Elementary Math(53/150)
___ EDUC-06 French Vocab/ Tutorial (46/123)
___ EDUC-07 Boot for L'Hote and L'Hote (48/49)
___ EDUC-08 Tic-Tac-Toe in French /L'Hote Quiz (47/50)
___ EDUC-09 French Poetry Tut and Appollinaire (51/51)
___ EDUC-10 Rafel Boot Disk and Rafel (55/56)
___ EDUC-11 Tic-Tac-Toe in Spanish /Rafel Quiz (54/57)
___ EDUC-12 Matute and Lo Fatal (58/59)
___ EDUC-13 Reading Fun (ShareWare) (505)
___ EDUC-14 Language Arts Treasures
___ EDUC-15 Floppy Book 1
___ EDUC-16 Computration Game /AW Temp
___ EDUC-17 Algebra Tutorial and Bagels Disk
___ EDUC-18 Newton's Apple (Cocaine)
___ EDUC-19 Newton's Apple (Teeth)
___ EDUC-20 WAP Stack and Tutorial Demo

FORTH
___ FRTH-01 Assembler/Disassembler /Screen Editor(700/701)
___ FRTH-02 Go Forth Tutorial and Fig/Forth 78 (702/703)
___ FRTH-03 Forth and Floating Point Arithmetic (704)

GAMES
___ GAME-01 Games A and B (102/107)
___ GAME-02 Games C and D (111/128)
___ GAME-03 Games E and F (162/164)
___ GAME-04 Keyboard and Paddle Games (72/74)
___ GAME-05 Pinball and Arcade Games (142/157)
___ GAME-06 Text Adv /Mystery House (SIERRA)(73/517)
___ GAME-07 Educational Games G and H (508/509)
___ GAME-08 Sports and Utilities / Games (143/160)
___ GAME-09 Adventures /Game Room (811/812)
___ GAME-10 Haunted House (176/810)
___ GAME-11 Mostly Games /Wizard Worker I (122/161)

LOGO
___ LOGO-01 Logo Tool Kit and \DocS (145/146)
___ LOGO-02 Sample Disk and Dallas Apple Logo(147158)

MISCELLANEOUS
___ MISC-01 SS (Coin Collect) and Misc. (95/115)
___ MISC-02 Miscellaneous (119/120)
___ MISC-03 Miscellaneous and Recipe Files (125/159)
___ MISC-04 Glaq and No Name Yet (129/175)
___ MISC-05 Special Databases /Jim's Data Base
___ MISC-06 Misc and Applesoft /AppleWriter IIe) (152/156)
___ MISC-07 Astronomy Short Programs (506)
___ MISC-08 Griffith and Weise Astronomy (507)
___ MISC-09 Aviation - General (Disk 1 of 2) (514)
___ MISC-10 Aviation - Navigation (Disk 2 of 2) (515)
___ MISC-11 Gardner's Assistant (518)
___ MISC-12 Music and Sights / Sounds (71/126)
___ MISC-13 Merry Christmas and Happy Holidays (103/165)
___ MISC-14 Graphics and Cat Graphix (108/171)
___ MISC-15 Print Shop Graphics (172)
___ MISC-16 Color Graphics for Fun/Science / Engi.(75/106)
___ MISC-17 Plots / Graphs and Charts / Graphs (163/166)
___ MISC-18 Business/Math Stat and SS (70/90)
___ MISC-19 SS (Investment) and SS (Business) (91/92)
___ MISC-20 Business A and B (104/113)
___ MISC-21 Investments A and B (153/154)
___ MISC-22 Spreadsheet A and Miscellaneous (137/155)
___ MISC-23 Riley's Personal Instrumentation (173)

NEW PRINT SHOP
___ NWPS-01 Graphics 01
___ NWPS-02 Graphics 02
___ NWPS-03 Graphics 03
___ NWPS-04 Graphics 04
___ NWPS-05 Graphics 05
___ NWPS-06 Graphics 06
___ NWPS-07 Graphics 07
___ NWPS-08 Graphics 08
___ NWPS-09 Graphics 09
___ NWPS-10 Graphics 10
___ NWPS-11 Graphics 11
___ NWPS-12 Graphics 12
___ NWPS-13 Graphics 13
___ NWPS-14 Graphics 14
___ NWPS-15 Graphics 15
___ NWPS-16 Graphics 16
___ NWPS-17 Graphics 17
___ NWPS-18 Graphics 18
___ NWPS-19 Graphics 19
___ NWPS-20 Graphics 20
___ NWPS-21 Graphics 21
___ NWPS-22 Graphics 22
___ NWPS-23 Graphics 23
___ NWPS-24 Graphics 24
___ NWPS-25 Graphics 25
___ NWPS-26 Graphics 26
___ NWPS-27 Graphics 27
___ NWPS-28 Graphics 28
___ NWPS-29 Borders 01
___ NWPS-30 Borders 02
___ NWPS-31 Fonts 01

PASCAL
___ PASC-01 AttachBios for Pascal 1.1 and Utilities (300/
___ PASC-02 Crypto/Graphics and Bios/Printers (302/303)
___ PASC-03 Misc. and Read/Write DOS / Printers (304/305)
___ PASC-04 Cataloger and Hires Printing/Lisp (306/307)
___ PASC-05 Puffin / Holiday Music -CPM-Pascal(308/309)
___ PASC-06 3D Education /Drill /Hackers Stuff (310/311)
___ PASC-07 Stocks/Weightwatch/Guerrilla Guide (312/313)
___ PASC-08 Pascal / To & From DOS (133/314)

PILOT
___ PILT-01** Pilot Language (167)

UTILITIES
___ UTIL-01 New Member's Disk - 2.01 A/ B (821)
___ UTIL-02 New Member's Disk - 2.01 C/D (822)
___ UTIL-03 Utilities A and B (100/101)
___ UTIL-04 Utilities C and D (112/118)
___ UTIL-05 Utilities E and F (124/132)
___ UTIL-06 Utilities G and H (138/43)
___ UTIL-07 Utilities I and J (44/77))
___ UTIL-08 Mach. Lang. Utilities and One-Key DOS(41/42)
___ UTIL-09 Beg.Choice /Intermediate Utils. (501/502)
___ UTIL-10 Diversi Copy and Diversi DOS (45/130)
___ UTIL-11 Additions to ProDOS and Zap Utility (804/806)
___ UTIL-12 Utilities A (ProDOS) and File Cabinet (802/803)
___ UTIL-13 Imageworks (174/807)
___ UTIL-14 DOS 3.3 System Master and Tutorial (511/512)
___ UTIL-15 Visi-Trend / Visi-Plot and Calculink (93/94)
___ UTIL-16 AppleSoft Tutor and Picture Packer(109/117)
___ UTIL-17 AppleWriter Utilities (168)
___ UTIL-18 AppleSoft Programs and Love's Follies(144/170)
___ UTIL-19 "Old" New Member's Disk (134)
___ UTIL-20 JoyReader (ShareWare) (819)
___ UTIL-21 Large Type JoyReader (SW) (823)
___ UTIL-22 DB Master V. 5 - Program Disk (SW)
___ UTIL-23 DB Master V. 5 - Sample Files /Docs (SW)

5.25" DISKS **(SW) INDICATES SHAREWARE**

APPLE III

ACCOUNTING
___ 3ACT-01A Easy Accounting
___ 3ACT-02 Easy System and Accounts Rec.
___ 3ACT-03 Easy System, A/P & G/L

III 3EZP & AW TEMPLATES
___ 3AWZ-01 AW - EZP Bus Templates (1060)
___ 3AWZ-02 Checkbook Plus by Lomartire
___ 3AWZ-03 Accounting/Finance Templates
___ 3AWZ-04 Mortgage Templates
___ 3AWZ-05 Checkbook Templates

III BUSINESS BASIC
___ 3BSB-01 Pohlman Disk 01 (1017))
___ 3BSB-02 Pohlman Disk 02 (1018)
___ 3BSB-03 Pohlman Disk 03 (1019)
___ 3BSB-04 Pohlman Disk 04 (1020)
___ 3BSB-05 Pohlman Disk 05 (1021)
___ 3BSB-06 PPT Demo / BASIC Helps (1098)
___ 3BSB-07 BASIC 1.23 & Utilities / Auto Basic by Boston
___ 3BSB-08 Best of OnThree-Basic Programs

III GAMES
___ 3GAM-01 Games 01 (1001)
___ 3GAM-02 Games for Kids (1007)
___ 3GAM-03 Cap'n Magneto-Revised 1/89 (1041)
___ 3GAM-04 Games 02
___ 3GAM-05 Star Trek

III GRAPHICS
___ 3GRX-01 Sketchpad and Slideshow (1012)
___ 3GRX-02 Fig Factory Manual (1069)
___ 3GRX-03 Fig Factory - Black and White (1070)
___ 3GRX-04 Fig Factory - Color (1071)
___ 3GRX-05 Raster Graphics Tool Kit (1072)
___ 3GRX-06 3-D Modeling Tool Kit (1073)
___ 3GRX-07 Chartmaker III (1074)
___ 3GRX-08 Graphics Utilities (1075)
___ 3GRX-09 Graphics Disk 01 (1062)
___ 3GRX-10 Graphics Disk 02 (1076)
___ 3GRX-11 Graphics Disk 03 (1077)
___ 3GRX-12 Graphics Disk 04 (1078)
___ 3GRX-13 Graphics Disk 05 (1079)
___ 3GRX-14 Graphics Disk 06 (1080)
___ 3GRX-15 Calendar by Bloom (1081)
___ 3GRX-16 Typewriter Art Disk 01 (1082))
___ 3GRX-17 Typewriter Art Disk 02 (1083)
___ 3GRX-18 Poster by Bloom (1084)
___ 3GRX-19 Raster Demo / Tmapio
___ 3GRX-20 Icon Demo / Tfont
___ 3GRX-21 Trixelmap Demo / Mask Demo
___ 3GRX-22 Tmem Demo / Trects Demo
___ 3GRX-23 GIF Graphics 01
___ 3GRX-24 GIF Graphics 02

___ 3GRX-25 GIF Graphics 03
___ 3GRX-26 GIF Graphics 04
___ 3GRX-27 Grafixworks 1 and 2 (SW)
___ 3GRX-28 Grafixworks 3 and 4 (SW)
___ 3GRX-29 Sign by Bloom
___ 3GRX-30 Scanned Graphics #1
___ 3GRX-31 FOTOView by Lomartine
___ 3GRX-32 A2/A3 Graphics

III INFORMATION

___ 3INF-01A WAP /// SIG PD Catalog-7/1/90 (1000)
___ 3INF-02B New Member's Disk-7/8/90 (1005)
___ 3INF-03 Best of MAUG Side One (1008)
___ 3INF-04 Best of The Source (1A) (1009)
___ 3INF-05 Best of TAU (1A) (1010)
___ 3INF-06 Best of ATUNC (1A) (1055)
___ 3INF-07 Best of III's Company - 01(1A) (1015)
___ 3INF-08 Best of III's Company - 02(1A) (1057)
___ 3INF-09 The Best of Bloom (1A) (1035)
___ 3INF-10 Impert's Corner by Bloom (1) (1096)
___ 3INF-11 Phase III Conference Plus! (1) (1047)
___ 3INF-12 Best of Ottalini - Disk 01 (1) (1040)
___ 3INF-13 Best of Ottalini - Disk 02 (1) (1058)
___ 3INF-14 Best of Ottalini - Disk 03 (1) (1059)
___ 3INF-15 Best of Ottalini - Disk 04 (1) (1087)
___ 3INF-16 Best of Pair BBS (1)
___ 3INF-17 Reviews by Bloom (1)
___ 3INF-18 III Cheers (Boot and Program)
___ 3INF-19 III Cheers (Issues 1 and 2)
___ 3INF-20 Best of Ottalini-Disk 05
___ 3INF-21 Three's Company BBS
___ 3INF-22 Best of Bloom-Disk 02
___ 3INF-23A WAP 3 SIG PD Catalog
___ 3INF-24 Best of ATUNC-Disk 02
___ 3INF-25 Best of ATUNC-Disk 03
___ 3INF-29 How Do I?
___ 3INF-31 ThreeWorks for Apple 3 - Disks 1 & 2
___ 3INF-32 ThreeWorks for Apple 3 - Disks 3 & 4
___ 3INF-33 ThreeWorks for Apple 3 - Disks 5 & 6
___ 3INF-34 ThreeWorks for Apple 3 - Disks 7 & 8
___ 3INF-35 Best of Ottalini-Disk 06

III MISCELLANEOUS

___ 3MSC-01 File Cabinet / Sort Directory (1046)
___ 3MSC-02 Contributions - Disk 01 (1A) (1053)
___ 3MSC-03 Contributions - Disk 02 (1A) (1061)
___ 3MSC-04 Contributions - Disk 03 (1A) (1086)
___ 3MSC-05 Le Grayhaven Cookbook Plus! (1A) (1097)
___ 3MSC-06 Double Boot (1099)
___ 3MSC-07 Apple III Demo Disk 01 (1100)
___ 3MSC-08 Apple III Demo Disk 02 (1101)
___ 3MSC-09 Apple III Demo Disk 03 (1102)
___ 3MSC-10 Apple III+ Keyboard Demo
___ 3MSC-11 Best of Salerno (1)
___ 3MSC-12 Apple II Boot Disk
___ 3MSC-13 French tutor
___ 3MSC-14 Italian Tutor
___ 3MSC-15 Contributions - Disk 04 (1)
___ 3MSC-16 Bowling Grid/Grade
___ 3MSC-17 Floppy Book by Shapiro (1)
___ 3MSC-18 Music-Music-Music

III PASCAL

___ 3PCL-01 Pascal 1.2
___ 3PCL-02 Pascal 2.0 Compiler/TookKit
___ 3PCL-03 Pascal ToolKit #2/#3
___ 3PCL-04 Pascal Pronto Debug/SANE
___ 3PCL-05 Pascal SANE #2/#3
___ 3PCL-06 Pascal SOS I/O/ExerSOS (1)
___ 3PCL-07 Pascal Utilities: PutDemo/PutLib
___ 3PCL-08 Pascal Wade's Patch/PCode Dis
___ 3PCL-09 Chaos Programs in Pascal
___ 3PCL-10 Power Keys DM & Source Code
___ 3PCL-11 Power Keys DM-Disk 2
___ 3PCL-12 MacStuff
___ 3PCL-13 David Craig-Disk 1
___ 3PCL-14 David Craig-Disk 2
___ 3PCL-15 David Craig-Disk 3

III REPAIRS

___ 3REP-01 Apple 3 Diagnostics - Disk 01 (1013)
___ 3REP-02 Apple 3 Diag - Block Edit (1094)
___ 3REP-03 Repairing your Apple III (1A) (1088)
___ 3REP-04 Brain Surgeon (1089)
___ 3REP-05 Disk Map (1090)
___ 3REP-06 Disk Check and Pro Health (1091)
___ 3REP-07 Vindicator and Catalyst Fixer (1092)
___ 3REP-08 (Block Editor and Block Byter 1093)
___ 3REP-09 Jeppson Disassembler (1095))

III TELECOMMUNICATIONS

___ 3TEL-01 Telecom - Disk 01 (1A) (1063)
___ 3TEL-02 Telecom - Disk 02/Access III (1064)
___ 3TEL-03 Telecom - Disk 03 (1) (1065)
___ 3TEL-04 Kermit III (1066)
___ 3TEL-05 XModem III (1067)
___ 3TEL-06 TerminALL Manual (1032)
___ 3TEL-07 TerminALL(1033)
___ 3TEL-08 WAP TCS Disk (1)
___ 3TEL-09 InfoNet (Source, Docs, & Program)

III UTILITIES

___ 3UTL-01 System Utilities and Data (1004)
___ 3UTL-02 Apple II Emulation - Disk 01 (1A) (1043)
___ 3UTL-03 Apple II Emulation - Disk 02 (1A) (1044)
___ 3UTL-04 SOS Drivers - revised 9/90 (1A) (1052)
___ 3UTL-05 Basic Boot Disk(1014)
___ 3UTL-06 Basic Utilities - (1A) (1002)
___ 3UTL-07 Programmers Power Tools (1A) (1056)
___ 3UTL-08 Applecon (1016)
___ 3UTL-09 Diskmaker and Appleseeds (1A) (1045)
___ 3UTL-10 Basic XT and Basic Utilities (1A) (1022)
___ 3UTL-11 The Retriever (1023)
___ 3UTL-12 Power Print III (1A) (1024)
___ 3UTL-13 Disk Window III (1A) (1025)
___ 3UTL-14 Source Window/Data Window (1) (1026)
___ 3UTL-15 Powercat and Basic XRF (1) (1027)
___ 3UTL-16 Basic Extension (1A) (1031)
___ 3UTL-17 Power Keys DM Plus (1A) (1034)
___ 3UTL-18 RAM+3/Two-n-Fro III /128K (1036)
___ 3UTL-19 Basic GTO (1051)
___ 3UTL-20 Custom Font Manual (1037)
___ 3UTL-21 Custom Font (1038)
___ 3UTL-22 Fonts - Disk 01 (1039)
___ 3UTL-23 Disk III Backup by Bloom (1011)
___ 3UTL-24 Gucspar by Bloom (1042)
___ 3UTL-25 ACCIDIF by Bloom-4/88 (1028)
___ 3UTL-26 Mail List Manager Manual by Bloom (1068)
___ 3UTL-27 MLM Utilities by Bloom-Disk 01 (1048)
___ 3UTL-28 MLM Utilities by Bloom-Disk 02 (1049)
___ 3UTL-29 MLM Utilities by Bloom-Disk 03 (1050)
___ 3UTL-30 AppleWriter to 3 EZP by Bloom (1085)
___ 3UTL-31 Pascal Menu Maker (1054)
___ 3UTL-32 Catalyst Release
___ 3UTL-33 Reformatter III
___ 3UTL-34 Custom Font Demo & Font Bib PD
___ 3UTL-35 Custom Font Demo & Font Bib PD
___ 3UTL-36 ASCIIUPLD By Bloom

III WORD PROCESSING

___ 3WDP-01A AppleWriter (1006)
___ 3WDP-02 Footnote III (1003)
___ 3WDP-03 InkWell Manual (1029)
___ 3WDP-04 InkWell Program (1030)
___ 3WDP-05 AppleWriter Demo
___ 3WDP-06 A3 - IBM by Bloom

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Apple II Tutorial Coordinator
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Basis	_____
Franklin	IBM or compatible
Apple III	Non-Apple laptop
Mac 128	Modem 300
Mac 512	Modem 1200
Mac 512 e	Modem 2400
Mac Plus	Modem 9600
Mac SE	Fax modem
Mac SE/30	Printer, dot matrix
Mac portable	Printer, impact
Mac other	Printer, laser

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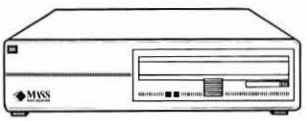

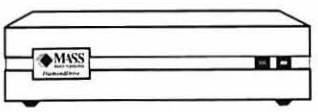

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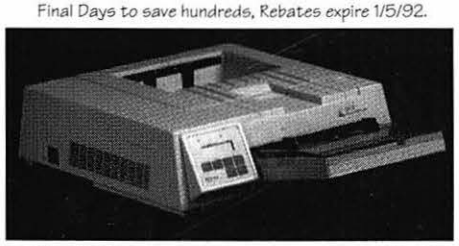

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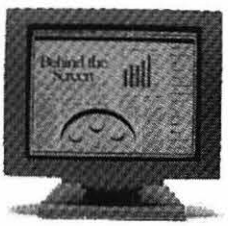

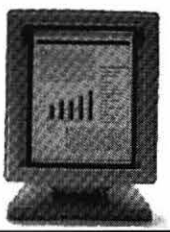

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