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washington apple pi

The Journal of Washington Apple Pi, Ltd.

Volume 12, Number 8

August 1990

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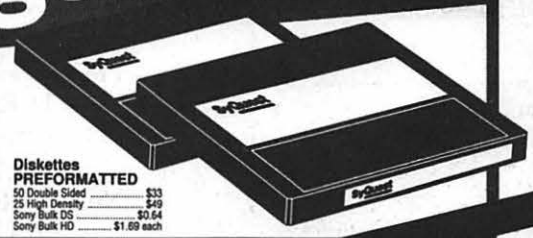

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washington Apple pi

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The July meeting will be held at the Bethesda Holiday Inn, (8120 Wisconsin Avenue), and the August meeting will be at the Crown Plaza Holiday Inn (1750 Rockville Pike). We are desperately ISO a more permanent meeting place, as you will learn after reading the Office News (page 8), and you will earn uncountable brownie points if you can find us a regular place for our monthly meetings.

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October .....August 23
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October ..September 1
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September .....July 20
October .....August 20
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October .....August 27

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WAP Reviewers Wanted

by Lou Pastura

Review Update

For the past month or so I have been going about the process of trying to involve more members in reviews for the Journal. It occurred to me recently that an overview of what's going on and where we're heading might be in order.

We are planning, during the month of July, to contact developers and request review copies of anything they have that might be appropriate for a review. In addition we are trying to expand the list of volunteer reviewers to include everyone who might be interested in helping out.

When all of this process comes together, reviewers will be assigned from the following sources (in priority order):

1. A list of volunteers based on inquiries from interested members;

2. Responses to a listing in each month's Journal of items currently unassigned;

3. Individuals identified with special interest or expertise through SIGs or by the editors.

At this point, once something is assigned, we would like to see the review within 60 days. A review that takes longer than that is not as useful as it otherwise would be, and this will help us deal with well-intentioned members who agree to do a review, but who are unable to meet that commitment due to unforeseen circumstances. Until the review is complete and accepted by the editors, all review software will remain the property of the Pi. Registration cards and materials will be kept in the office and forwarded to the reviewer when the review is complete.

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Fractal Programming in C—M & T Books

Macintosh Small Business Companion–Simon & Schuster

If you are interested in any of these packages or would like to volunteer to be a reviewer, please contact Lou Pastura (Mac) or Rick Zeman (Apple) on the TCS or by phone at (703)560-1477 (Lou) or (301)498-8531 (Rick).

More importantly, at least for now, if you have a piece of software or hardware you'd be willing to review for the Journal, please contact one of the editors. We are currently in need of good material and we'd love to hear from you if you've got something good or bad to say that you'd like to share with the rest of us.

CPAs — Accountants — Auditors — Attorneys

If you are a CPA and are interested in receiving an invitation to bid on the preparation of Washington Apple Pi's tax returns (for its year ended May 31, 1990), please contact the Pi office (654-8060).

The Pi is also seeking volunteers to serve on its audit committee. Accounting and audit experience wanted but not absolutely necessary. For more information, please contact Tom Vier at (703) 860–4810 (before 6pm on weekdays).

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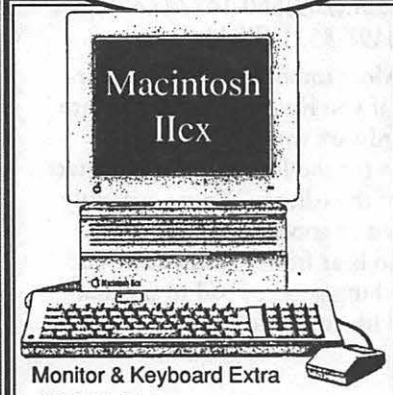

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What's Happening

Office News

by Nancy Pochepko

For this issue I thought I might pass along some useful information about Bethesda, as well as the office in general.

The office

As most of you know, we are at 7910 Woodmont Avenue in Suite 910, more commonly recognized as the Landow Building. The construction on the lobby is almost completed, both the front door and the side door are now fully accessible, only the finishing touches remain to be done. One of the features (or bugs, depending on your outlook), of the new renovations is the security system which controls entry to the building after hours and on weekends. We still want you to come to meetings and visit the office. To get in, pick up the black telephone. A security representative will answer and unlock the door when you tell him or her where you are going. This will only work on nights or Saturdays when there are scheduled activities. If the office is closed, or if there are no meetings scheduled, they won't unlock the doors....we hope.

The office hours are 10:00 a.m. to 2:30 p.m. Monday through Saturday and 7:00 to 9:00 p.m. on Tuesday evenings. The office houses the book library and the disketerias. It is not uncommon to find knowledgeable members there on a Saturday or on Tuesday night.

Now for my standard recording. WAP needs some volunteers to help out at the office whenever they have got some time during the day. We need people to answer the phone, stuff envelopes, call stores and members to keep in touch, work in the library, create new member kits, etc. Not much in the way of fun, but definitely necessary. PLEASE DONATE JUST A TEENSY BIT OF YOUR TIME!

Other projects

Deja vu? No—just something you've read a few times already. We still need volunteers to help with the following:

- Contacting stores and vendors to open lines of communication. The job entails simply contacting the store, talking to them about who WAP is and what we can do for Apple and Mac owners, and seeing if they would be willing to carry our brochures and Journals.
- We need volunteers who would be willing to contact new members to welcome them to Washington Apple Pi. This program is still in the planning stages, but we need to organize the base of volunteers that will be helping out. You can help WAP and meet new people all at the same time. The more members we have for this program, the better. Call the office if you can lend a hand!
- Of course, there is the ever-popular envelope stuffing. We always need help in this area. We send out mailings two to three times a month,so even if you can only come in for an hour or two, it would be a great help!
- If you like to talk to people on the phone, answering questions, or trying to help with a problem, we welcome your help during the day.

If you can spare some time, the office staff would love to have you drop by. Speaking of the office staff, if you would be interested in working in the WAP office on a part-time basis (around 25 hours per week) please give me a call at the office. The hours are 10-2:30 Tuesday through Saturday. The duties include answering the phone, filling disk orders, sending mail, etc.

Meeting sites

We are in search of alternate meeting sites, and will consider anything in the Washington Metro area (including Northern Virginia and PG County) meeting all or most of the following criteria:

1) CHEAP!!!
2) Near a metro station.
3) Close to the beltway, or other major highway.
4) Handicapped accessibility.
5) 2 rooms or auditoriums, 1 able to seat 350 - 400, the other able to seat 75 - 100. We also need some hallway space with 5 tables and chairs, and electricity.
6) Air conditioning or heating available (preferably heat in the winter, A/C in the summer ...).
7) Parking facilities, preferably at no charge (at least 200 spaces).
6) Decent acoustic qualities (cafeterias don't work well because they are designed to absorb noise).

If you know of any facilities that can handle our group, please call me at the office 301/654-8060.

Again, thanks to those volunteers who pitch in to get the job done. Your work is appreciated, and the WAP wouldn't be WAP without you.

Onward, ever onward...

President's Corner

by Eric Rall

Elections. This month welcomes a new Board of Directors to WAP. With this new board comes the renewed opportunity to improve the services and support that WAP provides. We have much work to do to build and strengthen WAP. We need your help.

The Year Ahead. I have some lofty goals for WAP this year. If we are successful in meeting some of those targets, this will be a banner year for WAP. Your cooperation and commitment is necessary for us to be successful. There are no words strong enough to describe my exasperation with a very small, vocal minority that complains about WAP not doing enough for them. This is your club. If you want your club to do something, get involved and offer to help do it!

Direction. I would like to see a few task forces formed. An Apple II and a Macintosh task force are two in particular. These groups don't need to be formal committees and their memberships can be fluid. The purpose is to encourage a free and open exchange of ideas. The charter of these groups is simple. They would be responsible for identifying the needs of the members and finding the people to help implement the solutions. The biggest difficulty in getting something done has always been finding someone to do the work, which conveniently brings up the next topic.

Volunteers. Unfortunately, these are the people we all too often take for granted. They are the backbone and lifeblood of this club. I am a volunteer. The Board of Directors, the people that sell disks, the booth workers, the Journal distributors, the telecommunications system crew, the Journal authors, SIG chairs, hotline, group purchase, Apple tea coordinator and a whole host of others, are all volunteers. The next time you think that your club isn't doing enough for you, think about what you can do for yourself and your fellow members. It is easier to help than you might suspect.

A Volunteer's Story. I've been a member for seven years. About five or six years ago, I called a hotline volunteer for some help. The next thing I knew this strange individual with a red feather in his hat (Lee Raesly for the very few of you that don't immediately recognize that description) got me involved in this thing called a bulletin board service (this story predates the name TCS). I knew next to nothing about telecommunications. I didn't even own a modem. I had read the Journal and knew there were far more qualified people than I. That didn't seem to matter to Lee, because I'd volunteered. Quickly, I became an active volunteer in programming the TCS.

Bernie Urban convinced me to write my first article for the Journal. He felt there was a need for a beginner's guide to the TCS. Although I know there are far more qualified writers than I, I agreed.

Lee convinced me to run for the Board of Directors. I knew there were many, many more qualified people in this club, but I agreed to run. Before I realized it, I won.

One day Bernie called and asked if I would run for Macintosh vice president. After much convincing, I agreed. Besides, I figured there was no way those far more qualified individuals wouldn't come forward this time. Wrong again! There I was, veep for two years.

During those two years, people like Bernie, Lee, Tom Warrick and David Morganstein encouraged me to run for president. Confident that this was the silliest idea that I had ever heard, I agreed. Well, here I am. I'm not really sure how this all happened. I still know that there are dozens of other people more qualified than I. Sadly, those people never took the first step and got involved.

If you sit back and wait for someone else at WAP to entertain you, you're missing most of the benefits of membership. I mastered my Apple II programming skills while working on the TCS. I learned all about Macintosh while scheduling the Macintosh meetings and the Q&A sessions. These and many other things I learned only after getting involved. I've made many wonderful friends and acquaintances, since I became a volunteer.

You don't need any special skills to be a volunteer. I've proved that often. You only need an interest in computers and the want to get more out of your membership in WAP.

If you've tried to volunteer and haven't been successful, give me a call. You can also send me a note or leave a message to me in Eric's Room on conference 1 of the TCS.

Volunteer coordinator. I'm expecting an overwhelming response to the previous section and know we will be needing someone to coordinate the offers to help. This is a great place to get started. It doesn't require any special skills or previous experience. The coordinator's responsibility is to get those that want to help in touch with those that need the help. Simple, huh? In doing this you get the chance to meet and talk to those infamous Pi notables such as Lou Pastura and Rick Zeman, our Macintosh and Apple II editors. Who knows, you may even become a legend yourself?

Membership. WAP funds itself mostly by membership dues. These dues help pay for the wide array of

services that WAP provides. This Journal, the monthly meetings, our office, phone lines, the telecommunications system, Special Interest Groups, the reading and disk libraries and many other benefits of WAP are paid for by members. Members provide much more than just monies. Member volunteers are the people that do the work and deliver these services. Surely, each of us knows at least one other individual that would benefit by joining WAP. When you bring in a new member, you're not only helping the club, but you're helping yourself.

Free Tickets For MacWorld Boston '90

by Bob Shaffer

That's right, a free ticket in return for assisting at the Washington Apple Pi Booth. I even have a free ticket for someone with a van that can drive the WAP booth and supplies to Boston. MacWorld Boston will be held in Boston on August 8-11. Helping in the booth gives volunteers a chance to help the club and meet interesting people.

The ticket grants access to all of the vendors' booths. Ticket-holders will get to see hundreds of new products and demonstrations, talk to that manufacturer about his buggy software, and just have fun.

Anyone who can volunteer or wants more information, call Bob Shaffer (301-384-3724).

June BOD Report

The WAP Board of Directors met on Wednesday, June 13, 1990.

* The minutes of the April 12 and May 9 BOD meetings were corrected and approved.

* The financial report was presented by Ed Myerson. Rich Wohltman is assisting in the selection of a collection agency to deal with delinquent advertising accounts.

* The Board passed a resolution directing the incoming Treasurer to chair a Committee to develop a perpetual inventory system of sale items, and an improved system for fixed asset accountability, as suggested by WAP's accountant.

* The accuracy of Journal advertising content and activity schedules was discussed. Nancy Pochepko has been asked to review all ad copy to make sure it is current and accurate.

* MacWorld plans were discussed. A subtenant has been obtained for the WAP booth, to defray exhibit expenses. Efforts will be made to separate WAP and subtenant activities in the booth.

* A change in the Bylaws was suggested, dealing with attendance of Officers and Directors at meetings of the Board

The text of the proposed amendment follows: (existing text is in normal type face; **text to be added is in bold face**):

ARTICLE VII - BOARD OF DIRECTORS

Section 6. REGULAR MEETINGS

Regular meetings of the Board of Directors shall be held monthly, unless otherwise determined by the Board of Directors. Regular meetings shall be held, at such time and place as may be determined by the Board of Directors, without further notice. **In order to effectively exercise the foregoing powers, it is incumbent on all Directors to attend meetings of the Board. Directors who fail to attend three consecutive regular meetings, or a total of six regular meetings of the Board in on year, will be considered by the Board to have tendered their resignation from the Board. The Board of Directors, in deciding whether or not to accept any such resignation, may take into account all circumstances and causes of the absences.**

In line with current Board procedures, this proposed change is being published in the Journal for review and comment by the membership, and will be discussed and voted on at the August, 1990 BOD meeting..

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Apple IIgs SIG

by Paul Tarantino

Our usual stalwart band was there at Dolley Madison Library in McLean, eager to witness Robert Gurskey's demonstration of two novel and useful GS graphic applications. The first of these was Graphic Disk Labeler, by Triad Venture. Bob picked this program up at the New Jersey Applefest last month; it is currently available by mail order from the publisher (and maybe, by the time you read this, your favorite software store or mail order merchandiser). GDL comes on a single 3.5" disk, with a small manual and fifty pinfeed labels for 3.5" disks. The program disk itself is unlabeled, giving its new owner a first project with which to learn the program, via a step-by-step tutorial in the manual.

GDL allows the user to create or import a graphic for the front of a disk label, and to print text using any available GS font or combination of fonts on the front, back and spine of the label, all properly oriented . Selected portions of the text can be printed in color on an Imagewriter II.

The many options for incorporating graphics make this a very powerful application, which can produce very professional-looking labels. The package comes with an NDA called "Label Grabber" which will capture part of an SHR graphic (320 or 640 mode) and size it to fit onto a disk label as a background graphic. Imported graphics can be modified with the program's basic painting capabilities, or with your paint program.

GDL allows one to open and display an entire icon file, import an icon onto a label, or paste several icons (or PSGS graphics) onto one label. One can fill the label with a single icon, or "tile" icons into the corners of the label. GDL's print routine aligns labels in the printer, and will print multiple copies of your design. (CAUTIONARY NOTE from several of those in attendance: be very careful when backing any gummed labels into a printer; they can jam in nasty and expensive ways.)

GDL is unprotected, and lists for $39.95 from the publisher (Triad Venture, Inc., POBox 12201, Hauppage NY, 11788). An additional disk full of 100 label designs, plus PS graphics and icons, is also available at $9.95.

Which free plug for GDL leads us to this month's Handy Hint (also a free plug), regarding membership in the Big Red Computer Club ($19.95 per year), which allows access to a very large and comprehensive library of PD software, at $3.50 per 3.5" disk (LOTS of clip art, PSGS graphics, and suchlike neat stuff). BRCC, 432 Norfolk Avenue, Norfolk, NE 68701.

Robert's next topic was MECC's Calendar Crafter (about $40 list; a school edition is also available for $60 or so), which produces very classy-looking calendars (monthly, weekly, daily and other options), complete (if you wish) with SHR illustrations. The program allows for a large number of "categories" of events to be entered (e.g. a IIgs SIG meeting on the last Monday of every month from April 1988 to February 2001). Events can have icon-like graphics associated with them, which can be modified or designed from scratch , and will then show up on a finished calendar on each of those dates when those particular events occur.

Calendar Crafter knows what the calendar should look like for all dates between 1 and 9999 A.D. (we're not sure how it handles the transition to the Gregorian calendar a few centuries back). Day and month names can be displayed in several languages. Different GS fonts can be selected for various parts of the calendar, and several additional options can be selected which will "dress up" the finished product. The program also includes two NDA's, a clock readout and MECC Keycaps, which opens a window of a keyboard and will display what any keypress will produce from a given font (especially useful for accessing the many "hidden" characters in some GS and Mac fonts which can be found by pressing Option-(letter) or Option-Shift-(letter). (Note: a similar Keycaps NDA is available on the TCS, but the window is smaller and thus harder to read.)

Calendar Crafter is copy-protected (backup disk available for $10), but can be backed up with Copy II+ 9.0. Robert could not get the software to run under system 5, but at least one other attendee (Rich Sanders?) said his copy runs fine.

Before the meeting degenerated into the usual frenzy of disk copying, Kim Brennan took the floor to talk about some of the hoops he had to go through to get his HP LaserJet to work well with his IIgs. Obviously endowed with an excess of discretionary income, Kim has acquired a LaserJet IIP, some additional memory for the printer, and a PostScript font cartridge (JetPage from Computer Peripherals, Inc., cheaper than HP's equivalent) which includes 37 fonts and makes the IIP look like and Apple LaserWriter IINT, only a LOT less expensive.

Lacking an AppleTalk network interface, and since nobody has yet produced a LaserJet driver for the IIgs, Kim must now print his PostScript files to disk, then send them to the printer with a comm program. Rumor has it that such gyrations may soon be rendered obsolete, as both HP and Seven Hills (the Graphicwriter III people) are working on HP drivers for the IIgs.

WorksSIG Report

by Chris Bastian

The June meeting of the Microsoft Works Special Interest Group featured several new faces, and focused on two user queries:

1) Can a word processing document be created and linked to a database file, so that data entered into the document in specified fields would be stored as database records (a la Filemaker); and how many individual records can be stored in a single database file? Answers: no, text in a word processing document would have to be manually Cut and Pasted into a database file, and would have to be in tab-delimited (each field's entry separated by a [TAB] from the previous entry) format. However, when a database file is displayed in FORM (as opposed to LIST) format, the data entry boxes for each field can be resized, and moved around the screen as desired. Unfortunately, no graphics enhancements or extraneous text can be added. As for file size, both versions 1.0 and 2.0 can store up to 6,000 records in a database file on a 1 meg machine, assuming 100 characters per record (your mileage may vary...).

2) What's the easiest way to set up a basic time accounting system to keep track of work done on separate projects? Suggestion: create a basic spreadsheet template with each row representing one data entry, and different columns used for time started, time stopped, totals, unit costs, etc., and SAVE AS... under a general name like "Time Form." Then, each time a new project is started, OPEN the file, enter the appropriate information to identify the project and then SAVE AS... the file under a specific project name (ie. "Jones Contract"). The result is a working copy for your data, and an untouched blank copy for the next time you need it.The Works SIG meets the the THIRD Wednesday of each month (assuming we don't get bumped for Board meetings) at 7:00 PM in the WAP office. All are welcome. Call me at 301/907-8187 for more details.

GameSIG Report

by Steven Payne

GameSIG regulars braved record-breaking heat to attend our monthly meeting on July 5. We began talking about the recent WAP elections, noting that, despite the poor voter response, two GameSIG members (Chris Bastian and David Wood) were swept into office, while another member (Ray Hakim) served on the election committee — all part of GameSIG's sinister plot to take over the Pi!

Chairman Paul Moore and David Wood reported on plans for the gaming extravaganza at the main WAP meeting on August 24, 1990. So far, we have a tentative commitment from some folks at Mindplay, who may be able to demo Magic Candle II for us. Other gaming luminaries are sure to follow.

We received for review both Macintosh (Mac Plus or better) and IIGS versions of:

Jack Nicklaus' Greatest 18 Holes of Major Championship Golf (Accolade): golf simulation with customized courses and holes;

Jack Nicklaus Course Disk, Vol. 1 (Accolade): additional courses designed by Nicklaus, such as Oak Hill, Royal Troon and Kemper Lakes; and

Jack Nicklaus Course Disk, Vol. 2 (Accolade): further Nicklaus-designed courses, such as the Australian Golf Club (Kensington, Australia), Saint Creek Golf Course (Nagoya, Japan) and St Mellion Gold and Country Club (Cornwall, England).

These will be reviewed in upcoming issues.

Meanwhile, we discussed once again what to do about the shift in new gaming products to the MS DOS machines. We are seriously thinking of expanding our scope (as other SIGs have done) to include electronic games of all sorts, possibly in collaboration with other user groups in town. Without relinquishing our interest in Mac and Apple products, starting next month we may begin asking volunteers also to demo some of the products available for other machines. Let us know what you think of the idea.

The regular Robot Tanks tournament turned into a one-on-one between Jeff Stetekluh and Davy Hakim; Davy graciously accepted defeat at the hands of the original programmer. Davy also demonstrated a new stock simulation he designed, called Stokz.

Our next meeting will be on August 2 at the main WAP Office, when we will finalize plans for the August Gaming Extravaganza. See you there!

Finally, I owe an apology to Ron Wartow for the missing April GameSIG meeting report, which was submitted late and never made the Journal's final editorial cut. Ron happened to be in town on April 5th and generously substituted for Paul Moore at the last minute. Though he's still threatening not to renew his WAP membership unless his Journal listing as "GameSIG Chairman Emeritus" is restored, he remains our revered founder and mentor. Think of us as you're sipping margaritas and gazing out over the Pacific at Redondo Beach, Ron!

Typefaces explained...

Building fonts

by Jim Donnelly

Tech Note

When I began submitting these observations to the *Journal* it was pretty clear that occasions would arise when I'd like to send in some short sample texts set in more or less obscure typefaces—sometimes even in made-up typefaces. Hence the question: How could these samples best be transferred to the *Journal?* Setting the texts as plain encapsulated PostScript files would not do the trick, because although an eps file includes a screen representation that might look fairly decent, and although this screen representation travels well from one computer to another, the eps file does not confer any magical ability to print the desired fonts. The fonts must be available on the host computer in order to be downloaded to the printer.

We thrashed about for a while, using some terribly tedious and elaborate work-arounds.

The ideal solution seemed to be to find a way to convert a typeset item into outline drawings of the individual letters. These outlines could then be filled with black in a program like Illustrator, and if they were THEN saved as an eps file, such a file wouldn't even be aware that a font was involved at all; it would think that it contained a bunch of little line drawings and it would dutifully draw them without bothering to go off looking for a PostScript font.

If you read the August issue of *MacUser,* you may have seen the article in which Gregory Wasson details nine different ways to perform this conversion to outline drawings. The method we've been using here for the past six months or so corresponds to Wasson's "Scenario 3." It involves the use of Brøderbund's TypeStyler and Adobe Illustrator 88, and it's the most straightforward of Wasson's nine methods: (a) Set a line in TypeStyler; (b) save the file in Illustrator format; (c) open the file in Illustrator and paint all the outlines with a black fill (and all the counters with white); (d) save the Illustrator file as eps and send it over the telephone. That's it.

There is one fly in this Ben-Gay, however—one address at which Murphy maintains a *pied-à-terre*—and that's the fact that before you can even begin to follow the procedure outlined above you must first convert a PostScript font into TypeStyler's own proprietary font format. This normally presents no problem, but sometimes things go amiss. TypeStyler seems to think so little of some fonts, for instance, that it doesn't even list them among the fonts available for conversion; at other times it will list a font but chicken out when you try to convert it, telling you that "This version of the font" is not compatible with TypeStyler. So far, I've found these problems insurmountable, and I've occasionally been forced to draw letters from scratch in Illustrator, which isn't much fun.

Presumably this difficulty stems from a problem with the fonts rather than with TypeStyler, but TypeStyler does have one moderately serious bug that emerges from time to time and causes the program to write slightly erroneous PostScript code when it saves text in Illustrator format. Illustrator won't open the file; it will say something like "Cannot open document. Offending command: U." I've been able to remedy this each time it's happened by changing the file's type from EPSF to TEXT and searching for the "offending command."

Without knowing any PostScript, I've simply searched for U and found that in all cases but one it will have been preceded by S. The single instance of U not preceded by S certainly looks like an offending command to me, so I've inserted an S, changed the file's type back to EPSF, and found that that little change has been enough to make Illustrator happy, and it will open the file. I have no idea what S and U mean, or what makes TypeStyler inconsistent about using them.

New Directions

For the past few months I've been engaged in a sort of feeding frenzy, downloading public domain and shareware PostScript fonts. These offerings can exert a certain obvious attraction in that their cost ranges from free to about $20, while Adobe's list price for (six styles of) the font you're looking at now is $275. The fonts I'll be showing you will not generally be so carefully drawn as Adobe's, of course, but I think that many of them might be used without apology. I should also admit that I'll probably be using some shareware fonts that I have no intention of keeping or paying for, but I don't think the designers will object; free exposure in a publication as respected as this one should count for something. (I won't identify the fonts that I plan to chuck out.)

To start off on a high note, here's one that I DID pay for. It's a clone of a typeface called Michelangelo, which is a titling alphabet (all capitals) designed as a companion face for use with Palatino. It has more graceful curves than Palatino (some so graceful that they bump up against the limits of 300-dpi resolution), and it is more stylized. If the crossbar of Palatino's A is high, Michelangelo seems to push it a little higher; if Palatino's G is low-slung, Michelangelo slings it lower. This version of Michelangelo comes from John Paul McCarty of Washington,

and it's called Medici. Mr. McCarty has the kindness to include with his font packages the outline drawings of the letters as an Illustrator file. This is fortunate because, as it happens, Medici is one of the fonts that TypeStyler will not allow me to convert.

MEDICI
(MICHELANGELO)

Zapf's Palatino was introduced by the Stempel foundry of Frankfurt and by Linotype in 1950. Only Stempel supplied Michelangelo, however, as well as the bolder variety of titling alphabet called Sistina.

I believe that Palatino underwent some sort of regularization over the years; when I first became aware of the face I was most impressed by its gorgeously asymmetrical W, and by the fact that the S seemed to be bending over backwards, tilting to the left. The S seems more upright to me now, and the W seems less remarkable. I don't think it's merely a question of familiarity breeding indifference; I think I recall reading that some of the letterforms of Palatino proved too extreme for the more reactionary reader, and that compromises had to be made. In any case, no such tinkering was done with Michelangelo, and it retains several features that recall the original Palatino. No doubt that's why I like Medici.

Roots

To begin at the beginning, let's examine a few blackletter alphabets. They hearken back to the earliest days of printing.

Laser London
Shareware
"$10 or $20"

Laser London is an attempt to provide a PostScript look-alike of Apple's bit-mapped London font, one of the earliest Macintosh fixtures. The shareware fee, "$10 or $20," is charmingly expressed, and I think the font in fact does what it sets out to do. The wisdom of using PostScript to imitate a bit-mapped font, however, does not shine forth to me with any real urgency.

Here's another:

Faustus
Shareware
$15.00

Faustus, as its name is no doubt intended to imply, is a kind of Fraktur alphabet of the sort that was common currency in Germany until quite recently. I can remember long ago collecting postage stamps bearing the likeness of Herr Hitler that also bore the legend "Deutsches Reich" set in a Fraktur face. Many of us can recall high school German textbooks published significantly later than Hitler's day but still set in Fraktur type. The blackletter faces, of course, including the various kinds of "Old English," are all native Germanic (Aryan?)

I can easily imagine a font like this—not necessarily Faustus—being occasionally useful for book jackets and theater posters and programs. The Frakturs inevitably carry a certain grim overtone, at least to my ear, but many books and theater productions are pretty grim, too.

Some of the regions of eastern Europe that are largely populated by ethnic Germans (descended from the wave of German emigration that gave rise to the legend of the Pied Piper leading the children off into the mountain) are also celebrated as the home territories of unpleasant individuals like Count Dracula. It's easy for me to imagine an edition of *Dracula* with a dust jacket showing Fraktur type. I believe that Mr. Stoker had in mind as the historical model for the good Count an unpleasant real-life fellow with the apparently Slavic name of Vlad; but didn't Mrs. Shelley sprinkle German surnames around Dr. Frankenstein's neighborhood? I don't remember—but even if she didn't, the name Frankenstein itself might suggest a Fraktur typeface.

And another:

Cloister
Freeware
by me

This is my own attempt to copy Morris Benton's Cloister Black. I've used it (sparingly) for at least a thousand certificates of various kinds. It's free, principally because I never got around to drawing the numerals, so it can't even be used to trumpet a shareware fee for itself. (Actually, I haven't made this font available anywhere, and I won't until I add the numerals. But it will still be free.)

Gothic Hand
Freeware
George Williams

This face is one of several very nice fonts supplied free by George Williams of Glendale, CA. Williams is a calligrapher at heart, and he provides documentation describing this font as an exaggerated variety of his own blackletter hand-lettering, designed so that the word "minimum" will be illegible:

minimum

I'd say he succeeded. But I very much doubt that he designed it that way out of perversity. That's just about exactly the way "minimum," a perfectly good Latin word, appears in hundreds of Latin manuscripts. (Evidently it becomes clear in context.)

Next month

Forward and backward in history AT THE SAME TIME, with a look at a wonderful Lombardic font. Learn why Fred Goudy, who loved to draw such alphabets, thought that Lombardic was a poor name for them.

The fonts that I've presented this month may be weighted somewhat heavily in favor of free-form, calligraphic lettering, but don't get the impression that there are no mechanically precise fonts available through shareware channels. Here's a teaser to whet your appetite: On the Eastern Shore of Maryland, somewhere in or near the town of Easton, there dwells an excellent, excellent designer of shareware fonts worth many times the requested $10 fee, who names his/her fonts with beguiling whimsy. Thus Poster Bodoni, or Bodoni Black, becomes Bodidly Bold, and Cooper Bold becomes Oswald Black. (The original designer's name was Oswald Cooper.) Stay tuned, and you will see Bodidly Bold go head-to-head against Poster Bodoni as supplied by Compugraphic. Oswald will take on Cooper Bold from Altsys. Be prepared for some surprises.

Where do these things come from? As usual, the answer is that they come from local bulletin boards, including WAP's own TCS. As far as I can tell at this point, every free or shareware font that I'll be showing you will have come either from the TCS or from the Twilight Clone, though if there's enough interest in shareware fonts, I may also pay my annual visit to GEnie in search of more.

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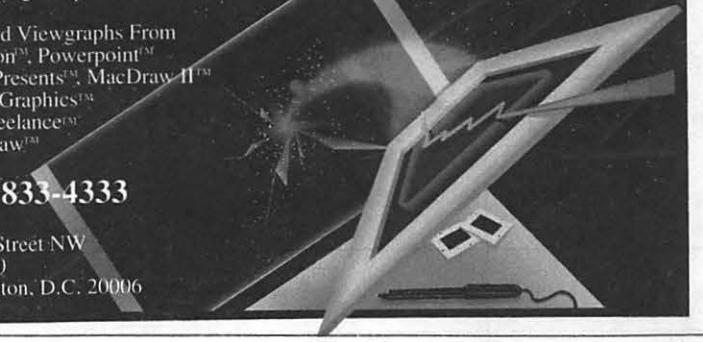


Artists on exhibit

by Nancy Seferian

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

Art: *Leverage* (below), *In the Middle* (opposite left), *Closing* (opposite right)

Artist: Joe Batts submitted several drawings he created in MacPaint, and those pieces will be printed at a later date. However, as we talked beside his computer he also showed me a presentation of overhead transparencies he created using PowerPoint and clip art, and since we haven't talked about either PowerPoint or clip art on these pages yet, I decided to use three selections from the presentation.

Joe specializes in recruiting data processing and telecommunications professionals in the Washington, DC, area, operating the practice out of an office in his home.

How they were done: "PowerPoint is a software program for creating presentations of slides, overhead transparencies or flip charts. It has an option for the creating the master page where you put the company logo and the main title of the presentation. Whatever you put on the master shows up on every slide. Then under the Edit menu you click on the New Slide command and you are presented with a new slide that is blank except for the title and the logo. There is also a default Slide Title box where you put the title of each individual slide. For example, Leverage is the title of a slide and the title of the entire presentation is *The Selling Process.*

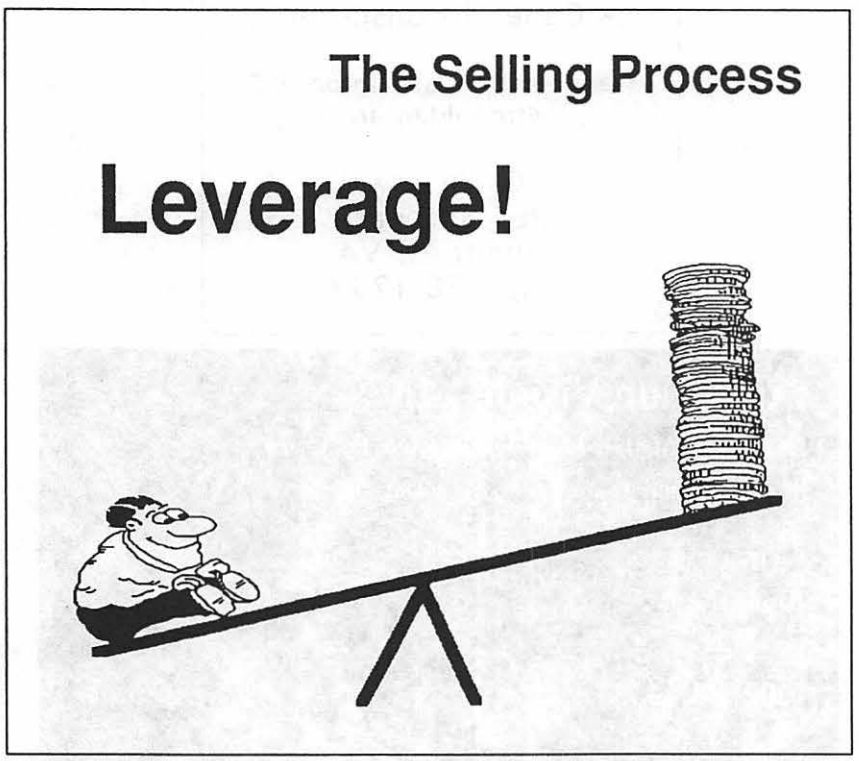
"PowerPoint has an outliner in two formats that helps you organize the presentation. One format is an outline for numerical listing of the slides. The second format is a display of the slide in a reduced version permitting you to view many slides at a time so you can get an over-all view of it.

"There is also a color scheme option so that if you select a certain hue as a base color, complimentary colors for your slides will be chosen.

"It's easy to select and open a particular slide and make modifications or delete the entire slide. You can also change the order of the listing.

"For *Leverage* I chose portions of the clip art and used the lasso tool to select just the portion I wanted. Then I copied it to a new MacPaint document and made the changes that I had in mind. I used the line tool selecting a large line size to draw the board and the fulcrum. I have four megs of ram so I could keep PowerPoint and MacPaint open at the same time while I imported the graphic to PowerPoint. I used the lasso to select the entire image and then copied it, selected PowerPoint, and pasted it onto the slide.

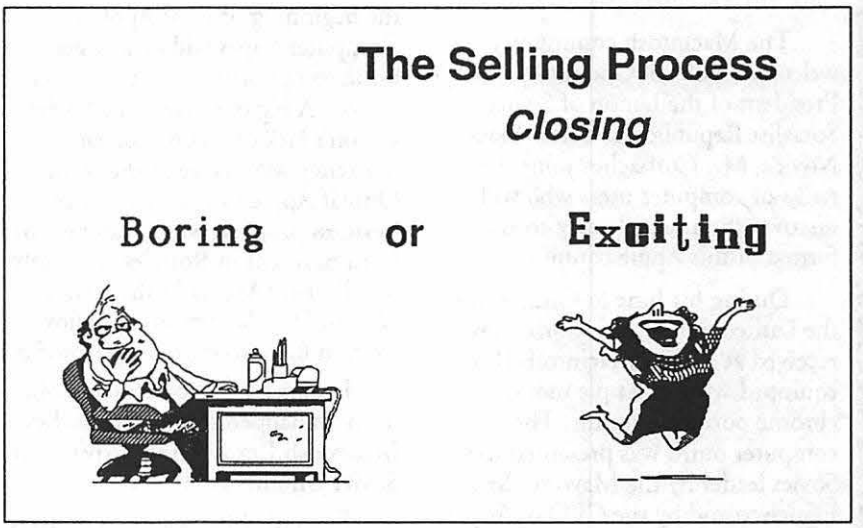
"The clip art for *In the Middle* was from a MacPaint document of monsters. I lassoed one monster which looks like the one on the left, but the tail was flat. I modified the tail to make it turn up and added the hot breath using the pencil tool. I duplicated it and reversed it so the



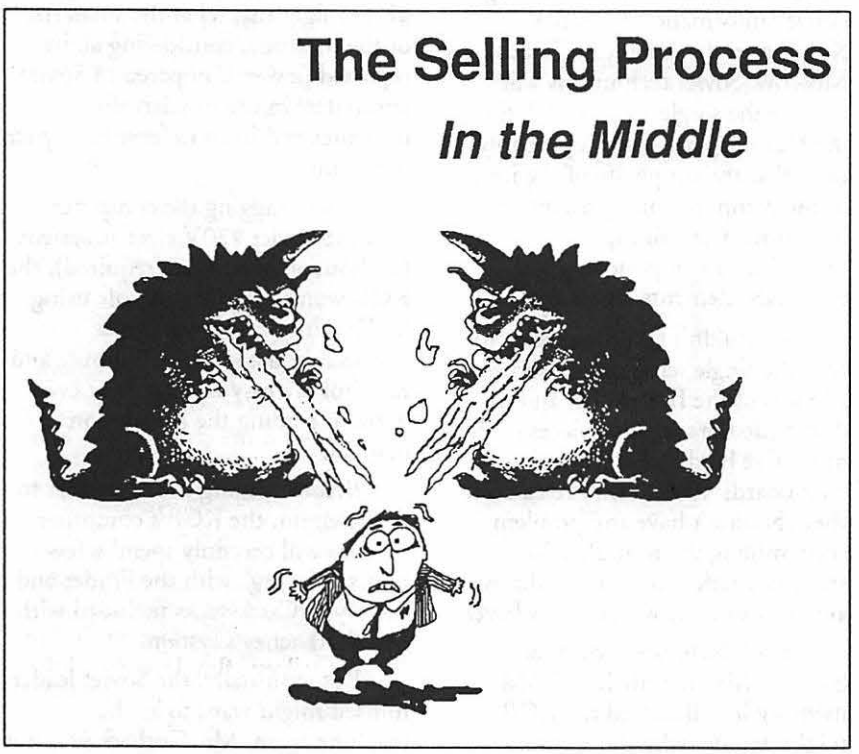
Leverage

monsters faced one another. Then I lassoed in that character at the bottom which is part of another cartoon ('Anxiety' or 'Overworked'). I added the motion lines to indicate that he's rattled. In my presentation I ask each person in the seminar if they know an ogre like the one on the left and on the right, and everyone has an answer.

"Closing was an easy one. I just used the lasso to capture each cartoon character and pasted them into a new paint document. The fonts were selected to go with each cartoon. 'Boring' is the New York font and 'Exciting' is San Francisco. Not very many people use San Fransisco, but it's one of my favorites because I think it conveys dynamism."



Closing



In the Middle

Tools: PowerPoint, MacPaint, Mac IIci, LaserWriter, Business Cartoons by
T-Maker and Personal Graphics.

Note: If you think clip art might be fun to try, there's a new book out that looks like a good reference. It lists clip art by publisher and also has over 15,000 small images of the art in the clip art packages. It's called *Canned Art, Clip Art for the Macintosh*, Erfert Fenton and Christine Morrissett, Peachpit Press, Berkeley, CA, 1990 ($29.95). ■

To submit art by mail, send it to Nancy Seferian
1425 Foxhall Road, NW
Washington, DC 20007.

To submit art by modem to the TCS, dial 986-8085. At the Main Menu select (F) for File Transfer Area. Then choose area 24 for Journal Submissions, and upload.

MACINTOSH

MacGlasnost

by Ralph J. Begleiter

Welcome, Comrade Gorbachev

The Macintosh community welcomes Mikhail Gorbachev, President of the Union of Soviet Socialist Republics, as a new MacNovice. Mr. Gorbachev joins the ranks of computer users who will discover the amicable easy-to-use format of this Apple computer.

During his June Summit visit to the United States, Mr. Gorbachev received as a gift a Macintosh IIcx, equipped with an Apple monochrome portrait monitor. The computer outfit was presented to the Soviet leader by the Mayor of San Francisco and by the CEO of Apple Computer.

To understand the significance of this gift, it's important to know that the Soviet Union has been attempting for years to obtain American computer technology, which even the Soviets acknowledge far surpasses Soviet computer hardware and software development. Until recently, the West has sharply restricted sales of off-the-shelf computers to the Soviets, believing that the USSR defense establishment could put them to use developing and operating sophisticated weapons systems such as the Soviet anti-ballistic missile system and guidance systems for the missiles themselves.

Apple //s and some Macintoshes are already in use in the USSR. (There is even a non-Soviet firm operating a small desktop publishing outfit in Moscow using Macs.) But the most powerful machines and software aren't there, and certainly not in large numbers. IBM and its clones are more widely used, and IBM recently was selected by the Soviet government as the computer standard for the USSR.

Mr. Gorbachev's Mac IIcx is the beginning of what Apple Computer hopes will be a larger business opportunity in the Soviet Union. A big obstacle is the Soviet Union's lack of "hard" currency (currency with value in the west). Only if Apple can come up with a business proposal which can benefit from payment in Roubles is it likely to sell many Apples in the Soviet Union. (The Soviets do not allow western firms to export their profits.)

Imagine, for the moment, what's likely to happen to Mr. Gorbachev's Macintosh IIcx upon its arrival in the Soviet Union.

First, his Mac is sure to undergo thorough examination by the KGB, which will want to be certain that the Mac is not equipped with any special "enhancements," such as listening devices or transmitters which might convey information from the Kremlin to the American Embassy in Moscow. Soviet technicians will remove the single screw which holds the IIcx's top on. They'll probably marvel at the simplicity of the inside of the computer, and perhaps have a hard time determining whether any of the Mac's components are espionage elements.

It shouldn't take them long to find the single screw which secures all parts of the IIcx inside, and to dismantle the snap-out pieces of the disk drive holder and the various chip boards. And, if they're careful, they shouldn't have any problem reassembling the Mac after its security check is complete. Almost anyone can do it with a screwdriver.

In all likelihood, Mr. Gorbachev's Mac has 5MB of RAM memory installed, and the KGB might wonder why the memory modules appear to be different, consisting of four 1MB modules plus four 256K modules. They'll have to start a subscription to a Macintosh computer magazine to understand that the Mac IIcx can use a mixture of memory chips to achieve a 5MB RAM total. If the Soviet President chooses to expand his computer to its 8MB limit, he'll have to purchase four more 1MB modules (at about $60 each) and discard the 256K pieces.

The KGB will probably take detailed photographs of the insides of the computer, including each of its relatively few parts. The photographers might marvel at the small size of the machine, considering all its reported power, compared to Soviet computers in use in scientific institutes and in its defense and space programs.

After plugging the computer into the Soviet 220V electric system (without any converter required), the KGB won't have any trouble using it. The simple series of cables connecting the keyboard, mouse and monitor are easy to figure out even without reading the instruction manual.

Before sending the Mac back to the Kremlin, the KGB's computer whizzes will certainly spend a few hours "playing" with the Finder and the HyperCard stacks included with Mr. Gorbachev's system.

But eventually, the Soviet leader himself might want to see his machine again. Mr. Gorbachev is not reported to have any special expertise

in computers. In fact, he's probably just one of "the rest of us" users for whom Apple developed the intuitive, icon-oriented on-screen system. He won't have to learn any arcane "commands" for making backup copies of his software before getting started. He probably won't even bother to read the instruction manuals before using his Mac for the first time.

He might be amused at the metaphor of the desktop, with its file folders and disk icons, not to mention the trash can. (He probably won't even realize the significance of the fact that that he understands perfectly what each of those icons represents, without requiring any Russian language translation.) It might take him a few moments to figure out how to use the mouse, and he may be momentarily startled when he presses the mouse button over the menu bar, discovering how magically his menu choices appear. (It is to be hoped that Apple will have presented Mr. Gorbachev with a version of the System and Finder with Russian translations in the menus and alert boxes. If not, it will be easy for a computer-savvy aide to use Apple's ResEdit program to "edit" the menu and alert "resources" to display Cyrillic words.)

The Soviet President might comment on the crisp visual display of the full-page monitor, and the fact that he can see the entire page of a document at once.

If he's lucky, Mr. Gorbachev will have enough time to toy with one of the Mac's drawing programs, and he'll discover that even someone who's not an artist can draw diagrams and other pictures. He may discover some clip-art in his Scrapbook.

Mr. Gorbachev might tinker immediately with the Kremlin's organizational structure, creating an organization chart displaying his new political organization (perhaps using the outlining program the Americans call "MORE!"). And a bright young assistant might suggest to the Soviet leader that the Kremlin could

produce a truly attractive in-house newsletter to be circulated daily, which could keep Soviet officials up-to-the-minute on Mr. Gorbachev's continuing reforms. It could include diagrams and photographs of officials featured in the reforms. It probably would not include (the aide might quip) any pictures of Boris Yeltsin.

The Soviet budget chief might ask to see on the screen this world-famous Macintosh computer program called "Excel," which the budget official knows is supposed to make working with numbers easy. He'll be amazed at his ability to use the mouse to create spreadsheets capable of sorting out even the Soviet Union's murky defense and civilian budgets, and calculating the "what if..." results of Mr. Gorbachev's proposed economic reforms.

Mr. Gorbachev himself, of course, won't have much time for playing with his new Mac IIcx. Probably it will end up in the office of an assistant, who will suffer the complaints of his wife when she finds him staying late at the office "playing" with the President's new computer (perhaps even playing that addictive Soviet-developed Macintosh game called "Tetris").

During the next high-level negotiating session with the United States, Soviet note-takers (who currently monitor the talks through electronic systems and transcribe them into IBM-style computer word processors in a narrow Kremlin hallway) might envy the operator of the single Mac IIcx. That operator can produce print-ready transcripts after seeing on his screen exactly what will appear on the printed page.

And the Soviet leader, if he's aware of any of this, might even comment to Secretary of State James Baker about the versatility of the Mac. Baker will be able to acknowledge that, since his own aides have recently discovered the usefulness of the Macintosh in preparing attractive documents and public information sheets for his own State Department. (Baker might later inquire of his

aides whether Mr. Gorbachev's Macintosh doesn't violate U-S regulations against the transfer of "high-technology" to the Soviet Union. He'll be informed that it doesn't, under recently revised regulations which allow some off-the-shelf computer technology to flow eastward.)

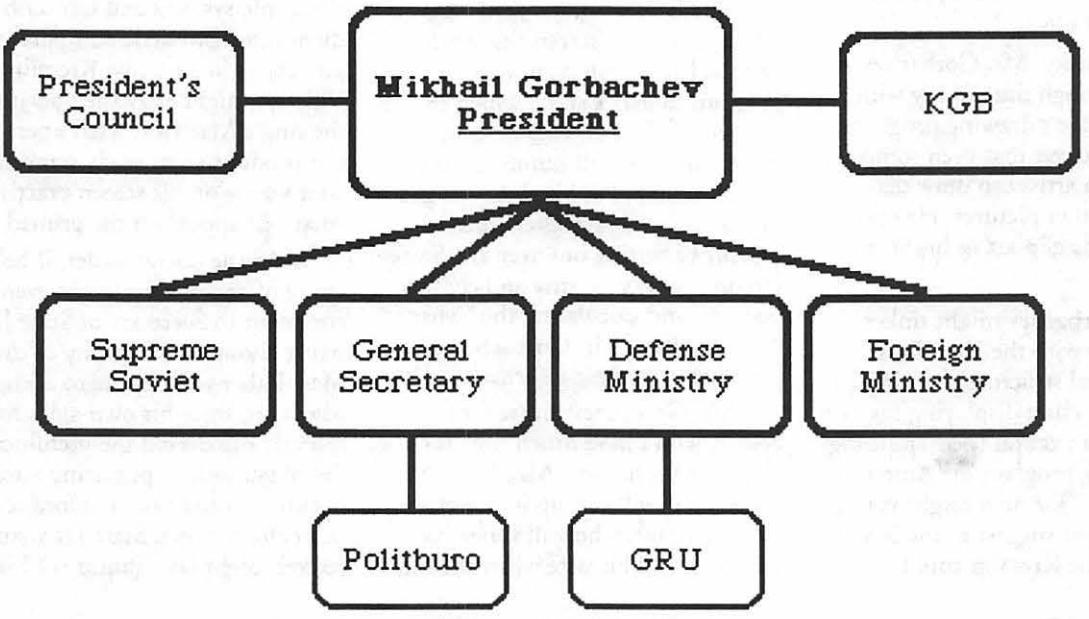
At the next occasion on which Mr. Gorbachev must deliver a speech to the Supreme Soviet or a Party Congress, his aides might prepare his text using one of the Macintosh's many easily-readable, large-size fonts. They might even use the Mac to project the Soviet leader's text onto a screen or telePrompter. That could help the Soviet President appear less tied to his paper text. Last-minute revisions would be simple to handle. And ad-libs by Mr. Gorbachev during the speech could be quickly inserted into the text being made available to the news media.

Ultimately, aides will decide that the Soviet Union should have more of these Macintoshes, and the Soviets might find a way to overcome the restrictions of their investment laws for westerners to allow Apple to distribute Macs in the USSR more widely.

And ultimately, Mr. Gorbachev will inquire about obtaining a two-page monitor and perhaps a Mac Portable for use on his plane.

Note: Some of the illustrations accompanying this article are from "Tetris" by Spectrum Holobyte.

Ralph J. Begleiter is "World Affairs Correspondent" for CNN, covering foreign policy issues for Cable News Network's Washington Bureau.



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Canvas 2.1

by Bill Baldridge

History

(with apologies to the devout)

In the beginning there was MacPaint. And it was good. And it was fun! And many legions of users created a multitude of bitmaps to share with and entertain their amazed friends who were not of the MacFold. And the morning and the night (sometimes 'til 3 a.m.) were the first years.

Then the creator rested, and he did unbundle MacPaint from the tree of life and there followed many unrestful nights in the land of developers. And lo!, there were born unto the Land of Mac a bountiful harvest of progeny, all proclaiming their worth unto the multitudes—the MacBillboard, the FullPaint, and the SuperPaint. All vied for the coveted title of "Best of Paint."

For a while, confusion reigned in the land of paint...which to choose? FullPaint did full-window edits, Billboard did just that, and SuperPaint added a new twist to editing dots—drawing! (see sidebar "Dots or Draw") Lines of dots! Boxes of dots! But with a difference...you could now reorganize everything after you'd drawn it, and resize it sort of like MacPaint & MacDraw rolled into one. SuperPaint attracted thousands of followers, except for one...me. I had evolved into a 'Paint or Die' MacMonster, and, to turn a phrase...it just didn't "feel right."

At this point (circa Spring '87), I was into multi-pass multi-color painting, and had generated some fairly sophisticated (if I do say so myself) posters using just ThunderScan (the struggling non-artist's savior) and FullPaint. I would scan a picture in at, say, 400% of original size, then chop the picture into 8"x10" paint files, separate out the colors by hand, and then do a multiple pass print of each of the colors by creating a continuous loop of tractor-fed paper and changing the ribbons on my ImageWriter for each color. Tedious and time consuming, to say the least...but it was a challenge, and FUN! Some of you may have seen my abortive attempt at trying to market a color poster done this way under the title of 'Michelle'—a 16"x24" four color poster. As I look back, I can't imagine anyone REALLY going to that much trouble for a simple poster.

Enter Canvas

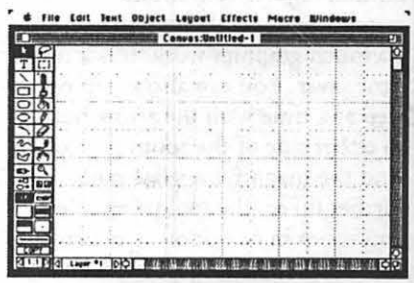
About this time (Summer '87), a new kid on the block arrived—Canvas! Canvas brought the familiar MacPaint tools to the Macintosh, but it also brought two other features that immediately made me a Canvas convert—a 9'x9' (yes, that's feet!) editing area and an integrated draw tool palette...no more flopping back and forth to edit a document with mixed graphics types, they were all right there! It also brought a unique Macro menu to the genre with the ability to put any object just a menu selection away. But rather than dwell on the original, let's have a look at the latest incarnation...they aren't going to give me the whole Journal to detail a blow-by-blow report!

Canvas 2.1 was released in December 1989, and has garnered the highest ratings whenever it has been reviewed by the press. Without a doubt, it is by far and away the most versatile graphics tool available for the Macintosh—at *any* price. But let's get down to specifics...

General Features

When you first launch Canvas you are presented with a fairly innocuous looking window, with tool palette on the left, scroll bars and title bar at the top.

Along the left side of the tool palette are the draw tools, and along the right the paint tools. Most people will recognize the standard tool icons for text, line, box, rounded rectangle, circle, arc, and possibly polygon on the draw side. And on the paint side, the lasso, marquee, paint can, paint brush, paint bucket, pencil, and eraser should be fairly familiar.



The tools that might not jog the synapses are, on the draw side, the freehand curve and Bezier curve tools, and on the paint side, the paint canvas tool, which allows you to create as many bitmap objects you want, in any color you want, wherever you want at any resolution up to 2540 dots-per-inch. The only limits to this ability are the capabilities of the system you are using, and the aforementioned 9'x9' area.

Canvas takes a unique tack to handling paint objects—each paint object is just like any draw object, but can be edited dot-by-dot. Another unique feature is that each bitmap (or paint object) can be scaled OR the resolution can be changed to match the output device—anywhere from 72dpi to 2540dpi! At 2540 dots-per-inch a MacPaint document is approximately 1/4" square! When you tell Canvas to change a bitmap's resolution, however, you also have the option to maintain its size...in effect, chopping each dot into smaller pieces, so one can manually (yuch!) clean up a bitmap.

When editing any object, Canvas will let you zoom in to do detail work or out to see the big picture. There are several ways to accomplish this, first of which is the 'zoom palette,' which is at the bottom left of the window. If you click on this box, a palette pops out from which you can select any magnification from 1/32 to 32x.

Deneba, the creator of Canvas, was the first developer to implement a feature that is just now being imitated by others—if you have an object selected, and select a zoom factor, Canvas automatically centers on that object. This sounds like a minor point, but believe me, if you do much graphics work, it is a **major** time saver. You can also zoom one step at a time with the arrow buttons to either side of the zoom palette. And the magnifying glass tool, further up on the tool palette, lets you zoom in or out on a particular area without having to select any particular object.

Layers...no draw package is complete nowadays without layers. Yes, Canvas does layers. How many? How many do you want? You are limited only by the system. That's the way it should be... and the layer menu (yes, MENU) is detachable, so you can go to any layer.

Precision? To four decimal places. I think you might be starting to get the point (pun intended).

Draw Features

Canvas' draw tools are fairly generic, with a couple of notable exceptions. First, with the advent of version 2.1, any draw object can be turned into any other object. That is, a circle can be turned into a Bezier object, a Bezier object can be turned into a polygon, and any object (or group of objects) can be turned into a bitmap. (Talk about getting back to your roots!) However, a bitmap cannot be turned into a draw object...can't make a purse out of a sow's ear! (Canvas *does* have an autotrace feature, which can trace a bitmap to a polygon, but it, like most other autotrace products, leaves a lot to be desired.)

Paint Features

The paint tools in Canvas are fairly mundane. Anyone who has used a paint package of any worth will immediately feel at home with the tools provided in Canvas. A great debt is owed to Bill Atkinson for creating a standard (MacPaint) by which all others are judged in this respect, and Canvas carries these features over very well.

The main areas where Canvas differentiates itself from most other paint-capable packages are in its abilities to have multiple bitmaps in a single document, to scale or change the resolution to match the output device, and to apply any color to individual bitmaps.

The Text Tool

Text manipulation is standard in Canvas. Text can be entered either as a draw object or paint object, can be rotated, scaled, skewed, or colorized, just like any other object. A couple of items of note to graphic artists—if you turn text into a picture object (via the Object Manager), it can be stretched to fit any size, and will still print at full resolution. Also, Canvas supports fractional character widths, so if the font you are using has the proper FOND information for kerning, it will print (to a PostScript printer) using that feature.

Though line spacing (or leading) is not adjustable in Canvas, I do not consider this a limitation. If necessary, lines of text can be entered individually and manually positioned for the best results. Canvas is not a page layout package....

A nice feature of Canvas is that if you've rotated some text and later want to edit it, you just select the text tool and click on the object. The text snaps back to horizontal for editing, and then rotates back after editing and hitting Enter.

Another feature of the text tool is, if you are importing (via the Clipboard) a block of text from a word processing package, you can click-drag a box where you want the text to flow, and then paste your text into the box you've created.

The Line Tool

The line tool is crucial to those doing drafting work in any draw package—it must be flexible and multifaceted. Canvas' line tool is both.

A line can be any weight or color, and can be dashed, dotted, arrowed or dimensioned. Arrowheads are fully editable, as are dashes. If you need to insert dimensions, there are three dimensioning options, and dimensions can be decimal or fractional (set in the Preferences dialog).

A unique feature of Canvas is that line weight is adjustable by axis—that is, vertical line weight can be .125 point, while horizontal line weight is 10 points. This makes for interesting circles, boxes, and rounded rectangles, and is a signature of Canvas (sort of like dropped shadows used to be a giveaway that a graphic was done on the Macintosh).

The Bezier Tool

Polygons are neat, but Beziers are better. Polygons are OK for things like trapezoids, octagons, and the like, but basically are terrible for doing freehand curves. Canvas does have a 'smooth polygon' feature that basically gives you a spline curve (a mathematical average of the inter-point dimensions), but artists don't want averages...they want precise!

The Bezier tool is very straight forward to use in Canvas. You just click on the desired control points, and when you either double-click on the last point or click on the first point the tool is released. From here, you can select "Edit Bezier Curve" (or Command+E) from the Edit menu, and each curve can be set with handles at each control point. With version 2.1, Deneba gave the Bezier tool a much desired feature: the ability to "break" a handle, and control each side of a control point independently. This allows more freedom in creating right angles, points, and cusps—something you could not do with earlier versions without multiple curves.

Also, Canvas has an interesting, if not unique, ability to bind a polygon to a Bezier. And the earlier mentioned ability to change any draw object into a Bezier rounds out this versatile tool.

The Duplication Manager

A feature that I originally noted in MacDraft has been implemented in Canvas—if you duplicate an object, and then position the duplicate, say, two inches diagonally, each subsequent duplicate (or Command+D) will mimic that spacing. Not being content to, let's say, "borrow" a feature, Deneba innovated with the Duplication Manager (or 'DM'). Via the DM one can create some of the most abstract and bizarre effects known to Mac-Dom, or one can create graduated/ radial fills, fountains, grids, and other useful effects. The DM is truly one of the power centers of Canvas.

Once duplicated, objects can be aligned vertically, horizontally, or to a line via the Alignment Manager. This dialog may look familiar to some MacDraw II users in the crowd. There seems to be a lot of "sharing" amongst the developer community nowadays....

The Object Manager

The other power tool in Canvas' arsenal is the Object Manager (or 'OM'), which I have mentioned in passing earlier. Via the OM, one can control all aspects of an object, from its height, width, and origin, to its shading, color, resolution, and type. The OM is a tool designers and engineers will love for its precision and ease of use.

Color

Deneba could have left Canvas as a powerful black & white draw/ paint package, and it would probably have been just as successful as it is today. However, with the growth in use of color in both industry and commercial art, they realized color was needed. With version 2.0 they added a color palette that is fully editable.

You say you need CYMK or HSL? Canvas can do it! The familiar color wheel is there, too, for those who just want a different shade.

(Continued on p age 27)

Dots or Draw

Dot-addressable graphics have been around practically since there were dot-matrix printers to print the dots. Since the late 70's, users have wanted to print out their "creations," and the dot-matrix printer was a willing collaborator. Nowadays, we call these type of graphics "bitmapped," because one dot on a black & white monitor is usually stored as a single bit of information. The lowly bit has been massaged ad infinitum, and some fairly impressive graphics have been created using this medium. However, high-end users, whose needs encompassed the fields of engineering and architecture, could not work with bitmapped graphics. Practically since the advent of the computer, vector graphics have been the mainstay of these professional artisans.

Vector graphics is a high-sounding term that means "from a given point (or x,y coordinate [for those geometrically literate in the crowd]) draw a line of length z at 273°." To this day, most computer aided design (CAD) applications use this vector-oriented approach—mainly to retain "portability" to other computer systems, as they too grew from these roots.

So, basically, where dot-addressable (or bitmapped) graphics take a dot-by-dot approach—each dot requiring a single bit of memory for storage, a vector (or draw) graphic is represented by a series of polar coordinates (x, y, z), a mathematic equation, or (in the case of the Macintosh) a Quickdraw "primitive." This latter approach saves a lot of storage space, and has the flexibility and power that are required by high-end graphic artists.

As an example, I once took an 8x10 photograph and scanned it using my trusty Thunderscan at 400%. I then took the scan into Canvas, and traced it with the polygon tool, filled and shaded it, and then saved it. The bitmap required 485K of storage, whereas the draw version only required 17K! Now that's what I call saving storage space!

With the advent of cheap storage and memory, however, many of the "savings" arguments fall by the wayside, and 24-bit color bitmaps of over 10 megabytes are possible. Unfortunately, the practical horse-power to actually do anything other than display these monstrous creations is not yet manifest in the desktop computer world. We all sigh...and hope.

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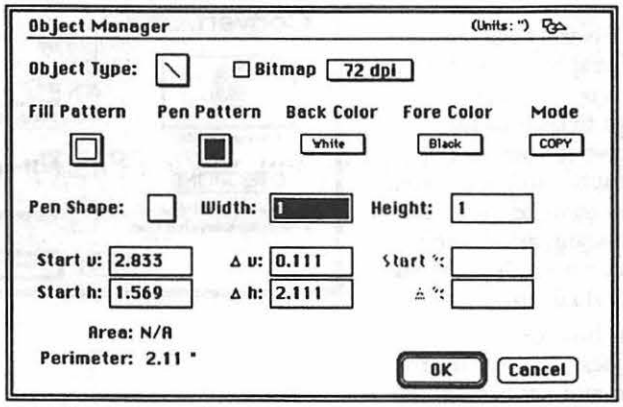


(Continued from page 25)

Canvas comes out of the box with nine palettes, and you can add your own, and save any custom palette you have created.

Other Editors

Besides the line and color editors, Canvas provides editors for fill patterns and spray patterns. On the pattern side, three pattern palettes are available from the window by using Option+click and Shift+Option+click controls.

Import/Export & Save

Canvas supports most standard Macintosh graphic file conventions, such as PICT (including color pictures), TIFF (limited), and MacPaint. It cannot open EPS or RIFF files, but does support EPS/PICT graphics (i.e., if you option+copy a graphic in Freehand and paste it into Canvas, it will retain the Encapsulated PostScript data). It will open MacDraw II (v 1.1), MacPaint, PICT, and, earlier versions of Canvas files. It can save in Canvas, MacPaint, Stationery (for saving start-up preferences), PICT, and TIFF formats. See 'Other Features' for more information.

Other Features

The Help dialog in Canvas is HyperCard based, and complete—'nuf said. Anything this much fun doesn't need much help, anyway.

A 100,000 word spelling checker is included, though I've always wondered why. Maybe Deneba felt they needed one more nail for MacDraw's coffin....

Though not technically a 'feature,' Canvas comes with a free Desk Accessory version. The Canvas DA is a "subset" of the main program, but includes most of the main features, and is more powerful than most standalone applications!

Canvas has a wealth of so called 'hidden' or 'undocumented' features. If you look closely at the tool palette, some of the boxes have hash marks down the right side. These boxes are 'option+click' selectable for features that usually reside on a menu. For example, with combinations of the option, shift, or command keys one can select font type, size, or style from the text tool box. When editing a polygon or Bezier, you can choose to edit, add, remove, or remove multiple points this way.

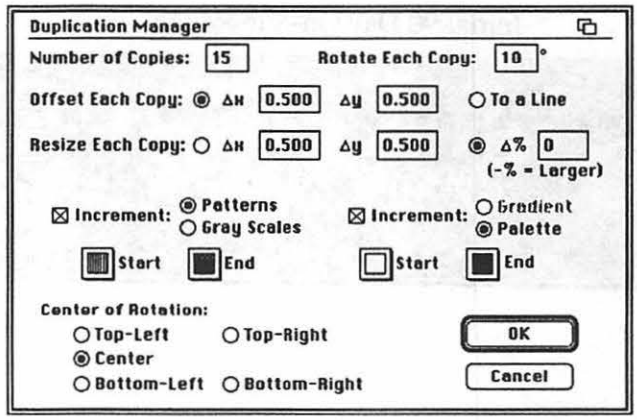
Palettes are removeable. By holding down the shift key and clicking on the fill pattern, line pattern, foreground color, background color, line weight, copy, magnify, or layer palettes, they can be 'torn off' to be placed wherever you want on the screen. This feature is of limited use for those with 9" screens, but on a two-page display it's heaven!

The ability to "select by attribute" is another undocumented feature. If you hold down the option key while choosing "Select All" from the Edit menu, you can then select all objects with the same line weight, fill, or color for editing at one time.

Again, though not technically a feature, Canvas comes with a separation utility. This application puts Canvas in a league by itself. It gives the ability to print a Canvas document as Encapsulated PostScript to print process color separations to an imagesetter, or convert a document to any of four formats (ready to import into your page layout package of choice). These features, according to Deneba, will eventually be included in the main application.

Technical Support

In the first dozen or so times I called Deneba at their 800 technical support number, I usually got through to a technician first shot. In the last year or so, however, the busy signal has been almost continuous, unless you can catch them early in the day (before the western U.S. wakes up). When I did get through, help was usually immediate and knowledgeable.



System Requirements

I have used Canvas for the last four years on just about every Macintosh (including the IIci). It runs on any system with a minimum of 1 megabyte of RAM, and only complains when you try to go beyond your system's configuration—and then does so with a dialogue, not a bomb!

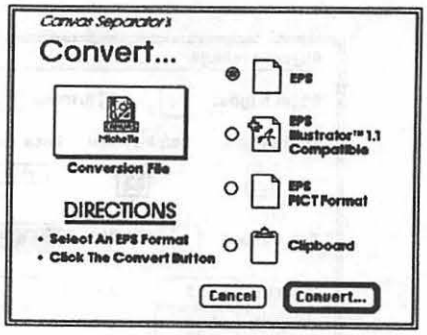
On the few occasions when Canvas has bombed, either through operator error or conflict with some other system configuration, it is the only application I have found that will actually recover enough to let you quit to the Finder—you will lose your work, but you won't have to restart or press the reset button.

Conclusions

Canvas 2.1 is truly the "Swiss army knife" of graphics tools for the Macintosh. It is powerful and versatile enough to be used for engineering drawings, yet can handle most graphic art chores. Only two deficiencies come to mind: it can't edit color scans, and it can't bind text to a curve—although you can rotate individual letters.

Canvas has been on Softsel/MacAmerica's best seller list for the last 26 months, and has been in the top five for the last six; it is currently rated #1.

If you want to see examples of what can be done with Canvas, just page back through this and past Pi Journals—all the MacInOffice ads have been done with Canvas...



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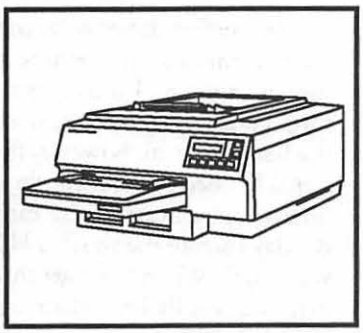

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MACWORLD EXPOSITION

The Windows Hype

by Robb Wolov, M.D.

Windows 3.0

By now, if you're like me, you are just about Windowed-out. It's been almost embarrassing to read the various industry pundits and columnists falling over themselves in praise of Microsoft's release of Windows 3.0 for the IBM *even before its release.* Was any of this by chance "review by press-release"?...Nah! It's been reported that Bill Gates spent 10 million dollars just in promotional expenses for Windows 3. If true, he's gotten his money's worth! At this stage I'm not quite sure if the consensus ranks it up with the invention of the wheel. As a Mac'er I find all of this interesting only because it is being touted by many as (pick one): (1) the final justification of the Mac's interface, (2) the killing blow and final death knell of the Mac as the world flocks to Windows-equipped Intel platforms, (3) the dawning of a new resurgence of Macintosh interest and sales, (4) all of the above, (5) none of the above. I also find it of interest because in my normal work I am now forced to use Windows 3.0 and have reached my own opinions.

Good, bad or indifferent, Windows is a force to be reckoned with, if for no other reason than that there are a lot of IBMs (and clones) out there that can run Windows. Remember that about eight out of every ten business machines out there is Intel based (though not all have the "oomph" to run Windows). Zenith and Tandy are now both bundling Windows with their 286 and 386 machines and Microsoft is heavily promoting upgrades. By the time you read this there should be a lot of Windows packages out there. How many will actually be used is another matter, but they'll be out there. In the coming months there will be a lot of money going into the pockets of Microsoft and other software companies just marketing the upgrades to their current stuff to make them Windows compatible, let alone for new application sales.

For starts, Windows is not as good as sliced bread. Remember that most of the reviews that you have been reading have been written by die-hard DOS users that only know the classic DOS prompt "C>". *Anything* to these folks is an improvement. On superficial aesthetics, Windows is pretty. The first icons coming out of Microsoft don't look quite as elementary as the first ones from Apple back in '84. In many respects the aesthetics of the title bars and slider buttons are *nicer* then the Mac's. There is a very pronounced Steve Jobs, NeXTStep-ish look about Windows with its three dimensional look, depressible buttons and classy use of grays that I prefer over the now somewhat dated appearance of the Mac's windows. But that's as far as it goes.

Remember, the Mac's System/finder, and NeXTStep/Mach(Unix) for that matter, are integrated operating systems. Windows was, is and always will be a "shell" running on top of DOS. To paraphrase a recent report, Windows is DOS with liposuction and a nose-job, but it is still DOS. It has all the weaknesses that DOS has always possessed. If you want to aggravate a Windows devotee, just ask him in the middle of a session to insert an unformatted floppy disk into his computer. It can't do anything with it—same old DOS nonsense!

Unlike the Mac's OS which runs on all Macs, Windows *requires* heavy hardware. Fast 80286's are the minimum ticket of entry while 80386's running at 25 or 33 MHz are preferred. Two megs of RAM are reported to be minimum *to load* Windows but if you actually wish to *do* anything with it, think 4 megs. Somewhat simplified, when you talk to the Mac through the keyboard or mouse, your input goes directly to the application which passes commands on the operating system which passes them on the hardware. In the Windows environment, you key to the application which then talks to Windows which only then talks to the operating system and the hardware. That extra step can be and frequently is a real bottle-neck.

Windows is not well behaved, even in what is now its third iteration. Idiosyncrasies with Apple's Installer program pale by comparison. Recently a routine Windows installation very methodically, thoroughly and completely erased every macro and batch file from a colleague's '386 machine. Once running, Windows is somewhat clumsy. Not bad if you're coming from a "C>" but coming from a Mac it's awkward. The Mac is slicker. With Windows, there is a less than intuitive mix of pull down menus with dialog boxes which then require you to start typing into them to get anything done. It's not really bad, just not particularly good. It makes you wonder if some of the Mac's better interface sequences were bypassed in order to avoid any questions of "look and feel" by Microsoft's lawyers. In fairness, changing operating system interfaces from what you are normally used to is strange for anyone—like driving different makes of cars, the switches all seem in the wrong places at first. But NeXTStep, which is certainly different from both the Mac OS and Windows, hardly jars on your nerves when coming from the Mac, where Windows does.

Windows interface consistency takes you back to where the Mac industry was in 1984. This predates my Mac days, but I am told it was

every man for himself before Apple stepped in with their formal Interface Guidelines. Microsoft and IBM (with Presentation Manager for OS/2 which is based on Windows) have both eschewed any formal equivalent to the Apple guidelines. This does not bode well since Microsoft is the biggest violator of the Mac interface judging from their offerings!

Why should any of us care about this? Well, for one thing this is a potentially big market. More then one Mac programming house has announced that they are eyeing if not working on Windows software, and if not abandoning the Mac market at least putting it on the back burner to simmer for a time. The counter argument is that since Windows-based software is more easily ported back to the Mac, we could see even more software for our machines—we shall see. Another effect is on Apple's thrust to get more Macs into the mainstream of business *and to keep* their educational market. The main sales pitch has been ease of use and lowered training costs with the Mac OS.

Granted, Windows is not as slick and polished as the Mac, but if it is *perceived* to be, many a potential customer will stick with his Intel iron and software when upgrading, things he is already comfortable with, rather then switch to a totally alien platform. The same holds true for the educational market. True, Windows will not run on cheap 8088 clones but cheap 80286SX clones are here and look very attractive in some circles compared to aging Apple IIs. During the Windows roll-out it was commented upon that the DOS'ers were cheering and the Mac'ers were yawning. I hope Apple's sales and software engineering departments were not amongst them. They *will* have their work cut out for them. Off the laurels guys...time to get to work!

Until next time...

Robert B. Wolov, M.D. is a pathology resident at Georgetown University School of Medicine. His areas of interest, besides molecular and orthopaedic pathology, are digital microscopic image analysis and writing medical education software. He can be reached via InterNet at WOLOVR@GUVM.BITNET

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Software review

A Great Sequencer, But What About My Dishes?

by Ellen Baniszewski

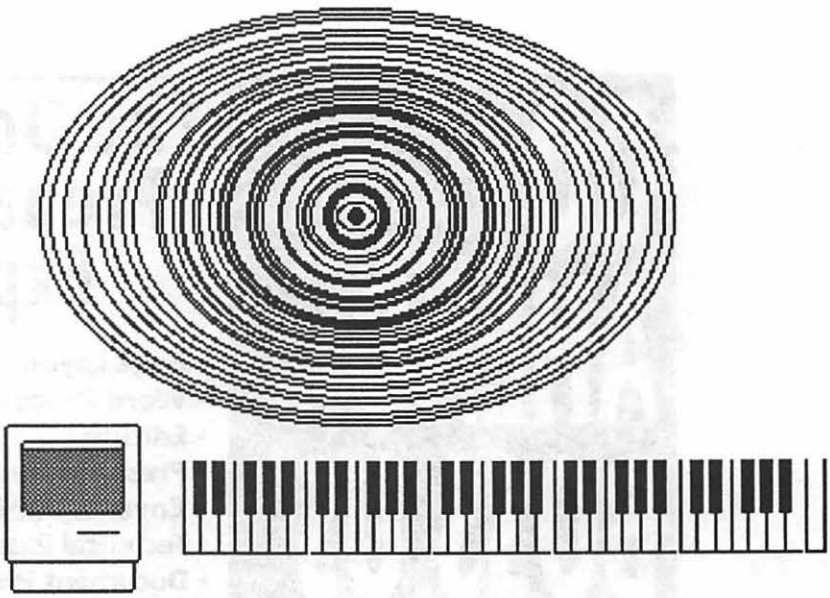
It won't do the dishes, but in spite of this obvious flaw, Deluxe Recorder 1.0 (DR) is a very good software sequencer for the MIDI based musician who can't afford one of the more expensive alternatives. With a list price of $149, and a street price (mail order) under $100 DR is definitely a bargain.

Experienced MIDI musicians may skip this paragraph while I provide a few definitions:

MIDI—Musical Instrument Digital Interface. A group of musicians will agree about as often as a group of doctors, but somehow a standard called MIDI has been accepted as a language used to allow performance information to be exchanged between electronic musical instruments, computers, and other MIDI equipment.

Sequencer—A sequencer is software or hardware that can record music entered on a computer or played on synthesizers or on other electronic musical instruments, and play it back. If you still don't understand what a sequencer is, imagine a Wurlitzer. (You do know what I mean...an old fashioned organ that roughly simulates the sounds of many musical instruments depending upon its settings.) This Wurlitzer is not played by a human, but has the score recorded on a piano player roll. Also on this same roll is an indication of which notes will be reproduced by which simulated instrument. Now, instead of simulated instruments, we're going to try for some realism by electronically and mechanically attaching actual trumpets, drums, bells, violins, cymbals and you name it, to our mighty Wurlitzer. Next, assume that this contraption actually works. (It does. There is a working machine like this in a museum in London.) This should give you have some idea of how a very simple multi-track sequencer functions when it converses with electronic musical instruments.

Now, back to DR. After reading a generally positive review in the March *Macworld*, I decided this was the right sequencer for me. I've been using DR for almost a month on my 2.5 meg Mac Plus with a Roland D-20 sequencer/synthesizer—and I love it!



So, what's so great about DR? First, it's easy to use. I usually read the manual before I touch a new program, but I decided to try this one out a bit before I cracked the book. Because I'm still a beginning MIDI user, I was able to conduct a good test of just how intuitive the interface is. I recorded a fairly complex song with multiple tracks and played it back without peeking at the manual or the easy-to-use tutorials. Also, I was able to easily import some standard MIDI file sequences. I needed to check the manual to figure out how to record several tracks simultaneously from the D-20's on-board sequencer. Other than that, the interface proved to be intuitive.

Because I had never owned any sequencer software before (except for a primitive public domain program from Altech), I expected that it would take several weeks before I could do any real work with DR. I was thrilled to find that I was able to use DR productively the same day it arrived in the mail. Better yet, DR is not copy protected as are some of the high priced sequencers.

DR is a 16 track sequencer and supports 32 channels if you use both the modem & printer ports. You give each track a name, and you can assign sounds by name instead of by number. By using the Name Editor you can create your own customized name tables if the table you need is not supplied with the program.

DR's console window has controls similar to a tape deck plus several other controls including those in the track list. During playback you may reassign sounds and manipulate track volumes, pan, tempo and more.

The Edit Window offers some

impressive features. Most sequencers allow some ability to quantize (correct the timing of the beginnings of notes) your sequences. With DR you can quantize a single note, a bar, a selection, or a whole track to any beat, fraction of a beat or tuplet. I tried 17 notes in the time of five and DR handled it neatly. You can also modify the time signature with several options for handling excess notes. I modified 4/4 time to 7/8 time and achieved the results I expected. (No, I don't know why you'd want to do this.)

I must comment on one criticism in the *Macworld* article. The reviewer wrote "...changes during playback distracted the program enough that it forgot to shut off some notes that were playing, and on they droned until I turned off the power to the synthesizer."

This is not the major catastrophe that the reviewer described. It doesn't happen that often, and you don't have to shut off the synthesizer. Just stop playback and start it again and your "stuck" notes become unstuck. Also, the reviewer claimed that the program often locks up, requiring him to restart his Mac.

This has happened to me only twice in a month of use; both times were before I upgraded to 2.5 megs. Very possibly the problem is related to running out of memory, because I was handling some large files both times this happened.

Although I love this program, a few improvements could make it better. On line help would probably be useful to those who don't like searching in the manual for the few things that aren't obvious at first glance. Some of the windows opened slowly on my Plus—even more slowly than usual. This was especially noticeable with the edit window.

Also, to be picky, a few high end features are missing such as support for SMPTE time code. DR also does not support synchronization with a tape. And of course, there're my dishes—are you listening, Electronic Arts?

In a former life, Ellen was a Scientific Computer Systems Analyst for the Nuclear Regulatory Commission and a Computer Programmer for the Infernal Revenooers. She has a son and a daughter who fight too much, but luckily for them, they're cute. Her husband works for NASA - Goddard Space Flight Center. A few years ago, Ellen decided she needed to get paid for some of her work and started a business called "Ellen's Music." She entertains children and adults in small and large shows and also does educational shows for children. She refuses to call herself a "serious" musician because she spends a great deal of time jumping around on stage dressed like a dinosaur or a princess or some other odd creature. For some reason, she's been silly enough to get back to using computers again. Maybe it's because the Mac's a lot more fun than mainframes! She's been a Mac owner for 10 months.

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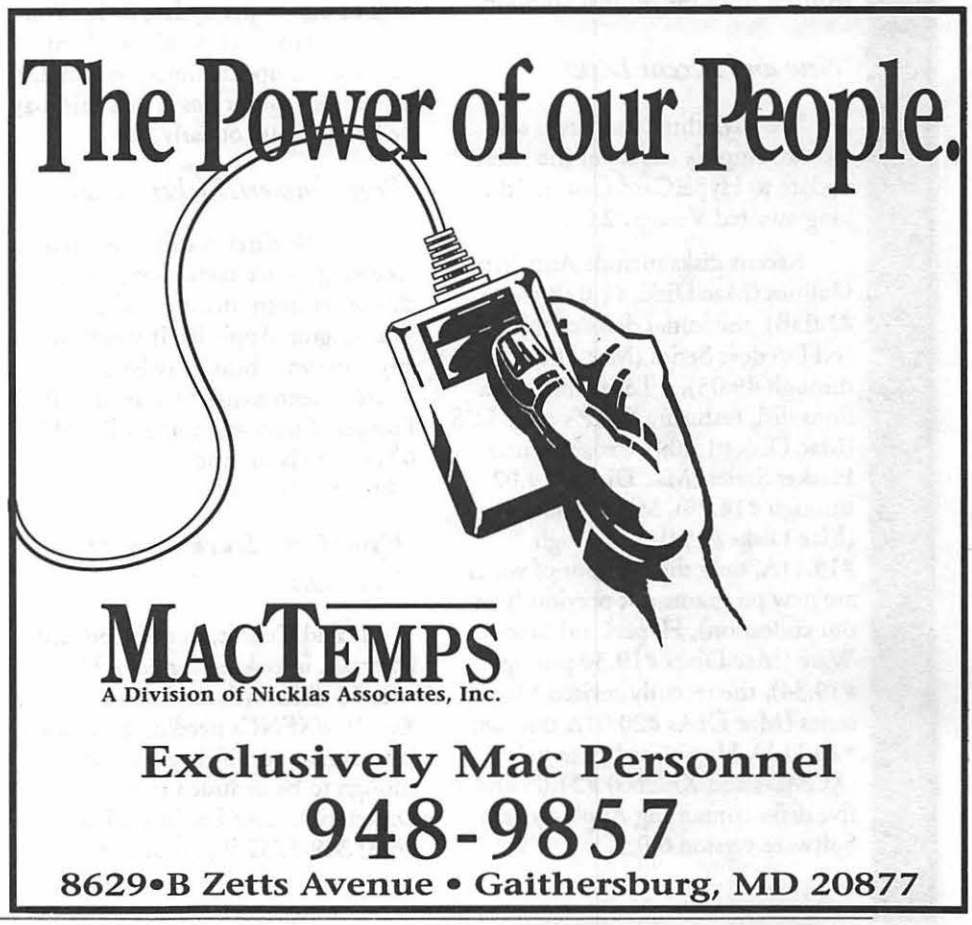

WAP Disketeria offerings

Macintosh Disk Library

by Dave Weikert

New Catalog Being Prepared

A completely revised Disketeria Catalog is being prepared. The format will be similar to the current catalog which includes disk descriptions and alphabetical lists of programs and files. The new catalog will include all the disks issued since the last version. Only a limited number of catalogs will be printed this time so that we may revise it more frequently than we were able to this past year. It may be available as early as the next meeting and will surely be available in time for the Mac Expo at Boston. Due to the time spent on the prepartation of the catalog, the number of new disks issued this month and next will be reduced from the normal amount.

New and Recent Disks

We have three new disks this month; Apple's release of the latest update to HyperCard (but not the long-awaited Version 2.0).

Recent disks include Anti-Virus Utilities (Mac Disks #1.02B and #1.03B), the initial disks of the INITs/cdevs Series (Mac Disks #9.01 through #9.05), a Telecommunications disk featuring WAP's own TCS (Mac Disk #13.09), Programmer/Hacker Series (Mac Disks #14.02 through #14.20), Misc. Utilities (Mac Disks #15.01A through #15.11A, only the last four of which are new programs not previously in our collection), HyperCard StackWare (Mac Disks #19.30 through #19.34), the recently revised Mac II series (Mac Disks #20.01A through #20.11A), HyperCard Externals (XCMDs and XFCNs) #21.05 and five disks containing Apple System Software version 6.0.5.

Errata

Last month, the latest Anti-Virus Utility was mistakely listed as Mac Disk #1.01C, it should be 1.01D in the disk descriptions and on the disk order form. Sorry.

HyperCard 1.2.5

Hypercard Version 1.2.5 is a three disk set: Disk HC.01—HyperCard & Stacks, Disk HC.02—HyperCard Help and Disk HC.03—HyperCard Ideas. You must have proof that you have been an owner of HyperCard in order to purchase this set. To demonstrate proof of purchase, you may show us the first page of the HyperCard manual, a sales receipt, an original disk or one of the update disks. You may want to defer purchase of any HyperCard update until Version 2.0 is released; rumor has it that this may be late summer or early fall.

Programmer/Hacker Series

Tim Buehrer is still interested in receiving source code submissions for this series from members of the Washington Apple Pi. If you have any code you think may be of interest, send a disk to Tim at 110 Prospect Street #2, Somerville, MA 02143 or via internet at buehrer-@husc3.harvard.edu.

HyperCard StackWare & Externals

David Condit, our HyperCard librarian, is looking for help. He has over 50 disks with stacks and XCMDs/XFNCs needing evaluation (and annotation if they are good enough to be included in the Disketeria). Give David a call at (703) 349-8752 if you can help.

Donation Received

Responding to our earlier request, WAP member Bruce Embry donated three SyQuest 45 Megabyte cartridges to the library. These will be put to good use for storage of programs that are awaiting review and possible addition to the library. Many thanks, Bruce, this sets an excellent example for any other members who may have some cartridges that they are not using.

About Shareware Requests

Please honor authors' requests for shareware fees if you decide to add shareware 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 #HC.01

HyperCard & Stacks

HyperCard

HyperCard Stacks *f*: Address, DateBook, File Index, Home, HyperCalc, Phone, Quotations and Version 1.2.5 Release Notes.

More Stacks *f*: Area Codes, Clip Art, Documents, Plots and Slide Show.

Disk #HC.02

HyperCard Help

Help Stacks *f*: Help, Help Index and Help Samples.

Disk #HC.03

HyperCard Ideas

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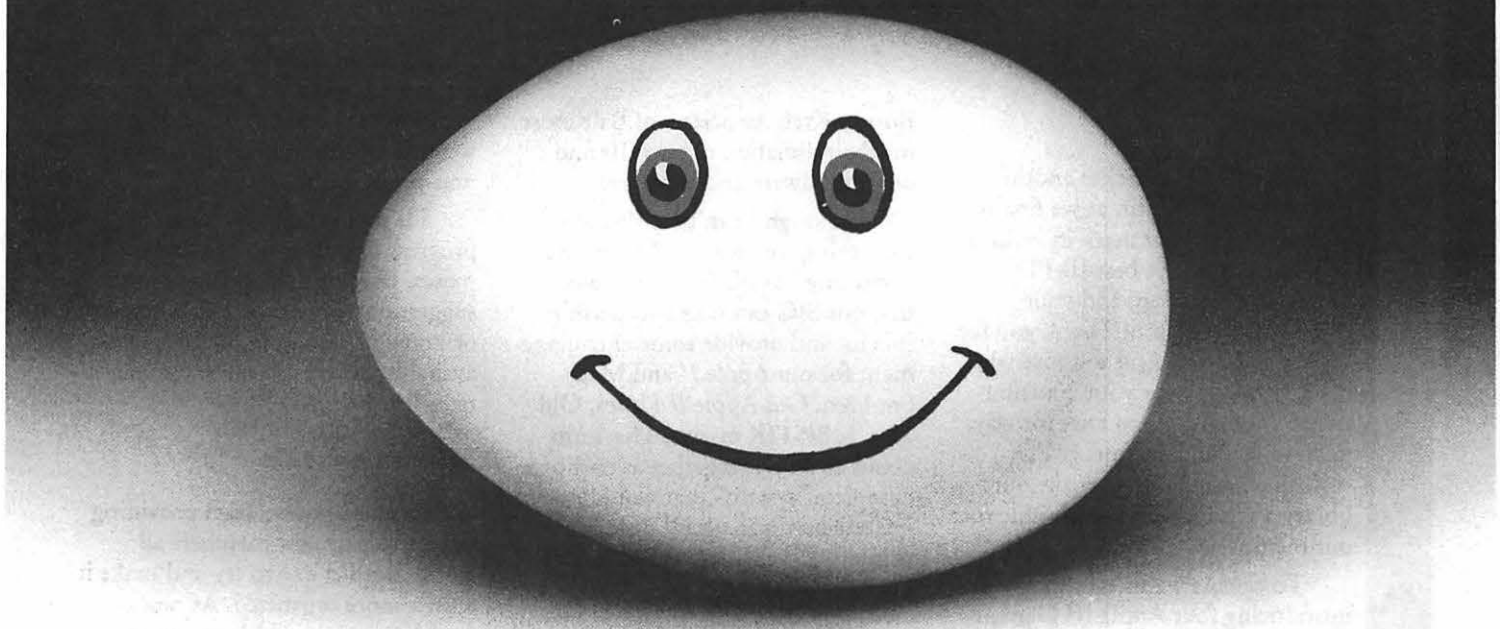

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On The Trail of the Apple III

by David Ottalini

Happy 100

Your III SIG reaches another milestone this month, as we finally go over the century mark in disks. I believe we have the best III PD library in the nation, and your support is the reason! Thank you for buying the disks. And to those who have, thank you for your contributions. We continue to look for ways to serve you and encourage PD contributions that help make our library a unique and useful value for our members.

To celebrate this month, we're introducing four Apple III Demonstration Disks. There numbers are 3MSC-07, 08, 09 and 10. I think you'll find them interesting, especially if you have access to a color monitor. As with the vast majority of our disks, these are all self-booting. Note that in honor of our SARA, we've left SOS 1.0 and Business Basic 1.0 on disk 3MSC.08, which contains the earliest of the Demo programs.

Apple III donation program

Thanks to our SIG Co-Chairman Jim Jutzin and long-time member Jim Salerno, we've started an "Apple III Donation Program" that's already off to a rousing start. Jim Salerno started it all by setting up a complete Apple III system (one of his own) for donation to the Rockville Senior Center (run by the City of Rockville).

Jim Jutzin followed by getting two Apple IIIs donated to WAP. One went with Jim Salerno to the Senior Center. A second will go to the Churchill Road School in McLean, Virginia for use by the students there this Fall. We'd like to thank Mr. Joseph Burgin Jr. of Burgin-Kreh Associates of Baltimore for their donation of two IIIs and other hardware and software.

Although I can't say this was something we "planned" from the beginning, it's obviously a project that our SIG can take a leadership role in, and provide some encouragement for our Apple // and Mac brethren. Old Apple // Pluses, Old Mac 128/512K or even Plus units could all be put together as part of a complete "system" that would include hardware (hard disks and printers if available), software, and instructional help.

Hopefully, membership in WAP would follow, thus gaining valuable new members for the club. As your new WAP Secretary, I will also pursue this project at the Board of Directors level. But I see this as something all members of the SIG could get involved with and make a real contribution to their communities.

Guidelines? There's nothing set in concrete, but here are some things to keep in mind:

1) Make sure the system is in proper working condition.

2) Try to upgrade it if possible to make it more useful.

3) Gather appropriate software and (very important!) manuals.

4) The system should be turnkey from the start (that is, set up and ready to use immediately. Make it easy to use simply by booting it!) (NOTE: We will provide a standard set of software to all those receiving Apple III machines).

5) Provide tutorials and be available after installation to provide additional support.

6) Make those groups receiving machines aware of WAP and what it can provide (especially by way of support, software and the Journal).

Sources for computers could include companies, folks moving onto other machines, even schools. In some cases, for example, IIIs are literally being used as doorstops or are gathering dust in closets. Wouldn't it be much better if they were refurbished and reused by a non-profit group or school?

I'll try to update you on the progress of this project as time passes. If any SIG members have suggestions, would care to take part, or know of machines that might be available, please call our Co-Chairman Jim Jutzin.

Mentor program

In a way, we've been providing this service to new members all along. But I'd like to try and make it a little more organized. As new members join we'd like to assign current SIG members as a person who can be called to help with problems or just talk about their IIIs and what's available.

Some of us are already involved, but we could use more people. Care to join us? This is something all SIGers can do to give a little back for everything we've provided over the years, with only a small amount of time involved.

I'm currently looking for someone to coordinate this program. He or she will call SIG members to see who would be willing to take part. Then, as new members join, they'll be sent a letter as part of their new member packet, telling them of their mentor. A letter would go to the mentor as well. Our SIG coordinator will keep track of all this so that people are assigned on a rotating basis (the more who participate, the more we can spread it out).

Apple III to MS-DOS

We continue to get questions about this. Thanks to the folks on the III section of MAUG(tm) on CompuServe, we get an idea of

what's involved with transferring ASCII text files. Here's what Harry Baya says:

I have done a lot of transfers with modem eliminators. The original Apple III came with a little short modem eliminator cable that you might still have around. Otherwise you can buy them in most computer stores—e.g. EGGHEAD (or Radio Shack). With a modem eliminator and TCM (On Three's Communications Manager) on the III you can send stuff over at 9600. You still have to type every file name on both sides, which is a drag, but it works.

If you want to transfer a Business Basic file, Harry suggests:

What I know works is to convert the program to an ASCII file and then use almost any communication programs on both sides to send it over a null modem.

The BASIC program to "print" a program to disk as an ASCII text file is:

```
10 OPEN #1 AS OUTPUT, ".D1/yourfile"
20 OUTPUT #1
30 LIST
40 CLOSE
50 END
```

This program should be placed at the top of your program (you may have to change the numbers or use the RENUMBER Basic program to merge the two) and the pathname changed to meet your needs (that is, ".D1/yourfile" becomes the pathname).

Ed Gooding of III's Company BBS fame adds that you can send the program directly through the III's Serial Port if you desire:

You can connect your PC to the III via a serial port and use, say PC-Talk on the PC side to capture the Basic program from your III. (NOTE: use the above program as described, but change ".D1/yourfile" to ".RS232" and make sure the RS232 driver is in your SOS.Driver file.) If your PC isn't near your III, then you can convert the Basic program to ASCII, upload it here to your mail box on CIS (CompuServe), then call here from your PC and capture it on disk that way. (You could also upload it to the III Data Library on the WAP TCS and then download it. Just make sure to delete the TCS file when you're done!)

For more information on Apple to MS-DOS transfers, try III SIG PD disks 3INF-09, The Best of Bloom ("Getting Here from There"), 3INF-10, Inpert's Corner by Bloom (Inpert 08, 09 and 10), and 3TEL-02, Telecommunications 02, which contains the file "Telecom.Info" with a tutorial on Apple III communications.

Differences, differences...

Just what are the differences between the III and III+? Ed Gooding explained it all on CIS recently (with some added comments from yours truly):

The only difference that I know of might be that the power supply for the III+ is stronger than its brother in the vanilla III. I've got two retrofitted IIIs with all slots filled and don't have any problems, though. The basic differences between the two models were the interlace kit (that fills in the spaces to make characters more readable), battery backup clock kit, keyboard (that includes a true delete key), and power supply. All of the aforementioned can be installed in a plain vanilla III, however.

MAUGer Bill Arnold gets the last word:

The main reason for the III+ was to meet FCC requirements. The disk III connector was changed to DB-25. Other DB connectors were changed to shielded connectors. The motherboard had some minor changes for EMI as well.

PUBLISH IT! 3 update

Yes, I know. The saga continues. But this time, the news is all good. I've already related the Profile problem of preventing anything above ProDOS 1.1.1 from working. That fixed (by removing the Profile), I could still not get Publish It! to print on my little Seikosha SP 1000AS Printer. That is, until I really started playing with all the settings.

That's something I'm used to in emulation. Print Shop thinks it's using a Super Serial Card to an Epson Machine. Now Publish It! thinks it's using a Super Serial Card through a Laser 128 interface. Yah. That works alright. But don't ask me why.

The result is, I now have a complete and up-to-date DTP system (with an 800K drive as well) that works perfectly. I'm using a joystick instead of a mouse. But Publish It! allows you to use the keyboard for many functions, which makes handling easier. I've already done up some SIG-specific letterheads for us and a brochure that can be sent to prospective members. And when I finally get that scanned and converted WAP "A" logo, look out!

WOZ COMMENT

Steve Wozniak Apple III comment from the old "Softalk" magazine of December, 1983 (commenting on Apple's closed machine policy as relating to the III):

One of the downfalls was that we were too smart. We knew the proper ways to do all sorts of things and we didn't allow hackers to do things their random ways. I feel we were wrong to believe in our 'religion.' Users should only use a good product (like SOS) if it's better for their application, not because the company feels only one way is right. It's a good lesson to learn.

Finally

Remember we will not have an August meeting. So enjoy the rest of your Summer and see you in September!

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- Anchor 1200E / 2400E (1200 / 2400 external, Hayes-compatible) . . . 119 / 165
- Prometheus Promodem 2400A (2400 card w / software) . . . 135
  - Promodem 1200G / 2400G (1200 / 2400 external) . . . 115 / 175

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  - RamFactor (256k–1 meg, for II+ or IIgs) . . . 199
  - gsRAM (256k–1.5 meg, for IIgs) . . . 139
  - gsRAM Plus (1 meg–6 meg for IIgs) . . . 289
  - RamKeeper (battery backup for gsRAM) . . . 159
  - Sonic Blaster (stereo digitizer / playback for IIgs) . . . 109
  - Transwarp II (7 mhz 6502e accellerator for II+ and IIe) . . . 149
  - Transwarp GS (7-mhz accellerator for IIgs) . . . 295
  - PC Transporter (IBM-on-a-card, 768k) . . . 389
- AMR 80-column card (64k, for IIe) . . . 59
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  - AS800 (3.5" 800k drive for IIgs, IIc+, Mac) . . . 199

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- Grappler c / mac / gs (use most parallel printers from your serial port) . . . 95
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  - SeriAll (serial interface for modems or printers) . . . 89
  - Microbuffer Mini (32k–512k printer buffer) . . . 85
- Applied Engineering Timemaster H.O. (clock card, supports ProDos time / date functions) . . 85

)(-series Software

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- Appleworks 3.0 (word processing, database, spreadsheet for IIe, c, c+, gs) . . . 179
- Word Perfect (for IIe, IIc, IIgs) . . . 109
- pfs:Write (w / speller) . . . 75
- Beagle Write (IIgs) . . . 59
- Newsroom . . . 25
- Publish It ! 2.0 . . . 79
- Sensible Grammar . . . 59

SPREADSHEETS

- VIP Professional (IIe, IIc / IIgs) . . . .79 / 89

DATABASE

- pfs:File w / Report . . . 75

HOME & BUSINESS ACCOUNTING

- Managing Your Money 4.0 . . . 95
- Quicken (easy home accounting) . . . 45
- BusinessWorks (best IIe / IIc / IIgs-series business accounting) . . . 259
- Dollars & Sense . . . 79
- Peachtree Back-To-Basics Professional (GL / AR / AP / INV for IIe, IIc, IIgs) . . . 169

COMMUNICATIONS

- Applied Engineering ReadyLink (split screen, VT-100 emulation) . . . 79
- Compuserve Starter Kit . . . 29

MISCELLANEOUS SOFTWARE

- Beagle Timeout SideSpread / Power Pak / Program Writer / Thesaurus . . . 32
  - UltraMacros . . . 39
  - QuickSpell / SuperFonts . . . 42
  - Graph . . . 55
- pfs:Workmates (includes Write, File, Report, Plan) . . . 125
- Print Shop / Print Shop Companion . . . .35 / 29
- Copy II+ v9.0 . . . 29
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- PaintWorks Gold (for IIgs) . . . 49
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  - HP DeskWriter (QuickDraw-compatible inkjet, 300-dpi) . . . 899
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  - 68030 accelerator (for Mac II, IIx, SE/30) . . . 999
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  - Excelerator XL 20 (20-mhz 68020 for SE) . . . 649
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  - MSF-300GS scanner (256-level greyscale, software, cable) 1450
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- Anchor MacPac 2400E (2400 / 1200 bps modem w / software & cable) . . . 179
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- Kensington System Saver Mac (fan & surge protector for 512, Plus / for SE) . . . . .69 / 59
  - Turbo Mouse Plus ADB (trackball for mouse-haters) . . . 125
- Shiva / Farallon / Nuvotech . . . (call)

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- Write Now 2.0 . . . 129
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- ReadySetGo 4.5 . . . 289
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- Springboard Publisher II . . . 119

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- Bedford Simply Accounting . . . 229

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- Microsoft Works 2.0 (word proc, calc, database, commun, speller) . . . 199
- TOPS for MAC 2.1 Bundle . . . 195
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- Suitcase II 1.2 . . . 55
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WAP HOTLINE

CALENDAR AND SIG NEWS

AUGUST

1 Wednesday
Editorial Deadline—September Issue
7:30 PM dPub Sig.....PEPCO
7:30 PM Mac Programmers .....office
2 Thursday
7:00 PM Columbia Slice.....Columbia
7:30 PM GameSIG .....office
6 Monday
7:30 PM PI-SIG .....McLean (call)
8 Wednesday
7:30 PM Database SIG/4D .Computer Factory
9 Thursday
8:00 PM StockSIG .....office
11 Saturday
10:00 AM Annapolis Slice....Anne Arundel Co.
9:30 AM Frederick Slice .....Frederick
15 Wednesday
7:00 PM NeXT SIG .....NIH
7:00 PM WorksSIG .....office
7:30 PM Excel SIG .....office
7:30 PM Fed SIG .....Call
7:30 PM HyperTALK SIG .....Arlington
16 Thursday
7:30 PM Board of Directors Mtng. office (Call)
20 Monday
Ad Space Deadline—October Issue
22 Wednesday
7:30 PM Apple III SIG .....office
7:30 PM AV SIG .....office
23 Thursday
7:30 PM EdSIG.....office
Writers' Deadline—October Issue
25 Saturday
8:00 AM AppleWorks SIG..before WAP mtng.
9:00 AM WAP General Mtg.Crown Pl. Hol. Inn
noon HyperCard SIG .....after WAP mtng.
noon New SIG.....after WAP mtng.
noon Telecom SIG .....after WAP mtng.
27 Monday
Apple IIGS .....McLean (Call)
Ad Copy Deadline—October Issue

The August Macintosh program will feature a presentation of "Zebra," a multifunction package featuring word processing, database, charting, draw and paint capabilities. It also does windows, but draws the line at heavy lifting.

WAP General Meetings

Monthly General Meetings are generally held on the 4th Saturday of the month at various places in the DC area. We try to give plenty of notice, but when in doubt, call. The place of meeting can, and does, change until we find a more permanent home.

Come as early as 8:30 AM to join, buy public domain disks, pick up your monthly WAP Journal. Attend the Q&A sessions to get your questions answered and hear the latest rumors. Listen to the main meeting topic at 9:30.

We also have a special session to welcome new computer users and get them started. Group purchase items can be bought at the office at noon.

Meeting Notices

Annapolis Slice 2nd Saturday; Anne Arundel Community College - Careers Bldg. Lecture Hall, Arnold, MD, 10:00 AM.

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

Apple III SIG 4th Wednesday; WAP office, 7:30 PM. (no meeting in August)

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

AV SIG (arts and video) 4th Wednesday; WAP office, 7:30 PM. May be subject to change; call Nancy Seferian (202) 333-0126 to confirm.

Columbia Slice 1st Thursday; at the Howard County Board of Education Bldg., Route 108, Columbia, MD, 7:00 PM.

Database SIG/4D 2nd Wednesday; Computer Factory, Silver Spring, 7:30 PM. May be subject to change; call Eric Gutsche to confirm, (703) 379–1265.

August

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*	*30*	*31*	

Meeting Notices

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

Ed SIG (Educational programs) 4th Thursday; WAP office, 7:30 PM; August 23, Sept. 27.

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, 7:30 PM. Call Jim Manley (703) 490-1034 to confirm location.

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

GameSIG 1st Thursday; WAP office, 7:30 PM.

HyperCard SIG after the WAP general meeting, 12:00 noon.

HyperTALK SIG 3rd Wednesday, the Fairlington Community Center, 3300 South Stafford St., Arlington, 7:30 PM.

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

NeXT SIG meets 2nd Wed. of each month, NIH Bldg 12A, Rm B51, 7pm. Call Hugh O'Neill, (202) 328-9510.

PI-SIG (Programmer's Interface) 1st Monday; WAP office, 7:30 PM (except for Monday holidays). Call Ted Meyer (703) 893-6845 to confirm date, time and location.

StockSIG 2nd Thursday; WAP office, 8:00 PM.

Telecomm SIG after the WAP general meeting, 12:00 noon.

WorksSIG 3rd Wednesday; WAP office, 7:00 PM.

Notice: Anyone having information on changes to the calendar is encouraged to call the Calendar Editor and leave a message on his home answering machine, tel.: (301) 595-2539 in Beltsville, Maryland.

SEPTEMBER

1 Saturday
Editorial Deadline—October Issue

3 Monday
7:30 PM PI-SIG ..... office

6 Thursday
7:00 PM Columbia Slice ..... Columbia
7:30 PM GameSIG ..... office

12 Wednesday
7:00 PM NeXT SIG ..... NIH
7:30 PM Database SIG/4D . Computer Factory
7:30 PM dPub SIG ..... PEPCO

13 Thursday
7:30 PM Board of Directors Mtng. office (Call)
8:00 PM StockSIG ..... office

15 Saturday
10:00 AM Annapolis Slice .... Anne Arundel Co.
9:30 AM Frederick Slice ..... Frederick

19 Wednesday
7:00 PM WorksSIG ..... office
7:30 PM Excel SIG ..... office
7:30 PM Fed SIG ..... Call
7:30 PM HyperTALK SIG ..... Arlington

21 Friday
Ad Space Deadline—Novwember Issue

26 Wednesday
7:30 PM Apple III SIG ..... office
7:30 PM AV SIG ..... office
Writers' Deadline—November Issue

27 Thursday
7:30 PM EdSIG ..... office

28 Friday
Ad Copy Deadline—November Issue

29 Saturday
8:00 AM AppleWorks SIG.. before WAP mtng.
9:00 AM WAP General Mtg. ..... call
noon HyperCard SIG ..... after WAP mtng.
noon New SIG ..... after WAP mtng.
noon Telecom SIG ..... after WAP mtng.

September

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*
30						

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Tony Svajlenka	(Frederick)	694-6209	Apple //
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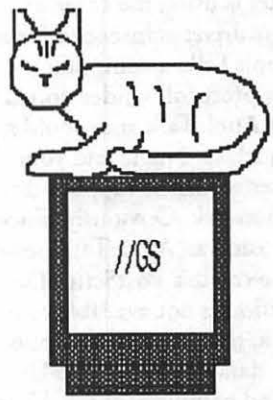
R. Carl Myers	(Smithsburg)	824-7122	Mac & GS

View from The Cat House



by Kim Brennan

PostScript, Discoveries and Problems

In last month's column I told you about my first sucess with using PostScript on my HP Laserjet IIp printer. Since then I have learned a lot—both about PostScript and my particuliar set up.

One thing I didn't mention last month was how to connect a Laserjet IIp to a GS. Depending on how you intend to use it, there are three possibilities. The IIp has two built-in interfaces. One is a standard Centronics style parallel connector, the other is a standard 25-pin serial connector that can be set up as RS232 or RS242. The third option, the most expensive but possibly the simplest in the long term, is an AppleTalk option board for the IIp, costing an additional $235 (street price).

I tried, briefly, a parallel connection but as I don't actually own a parallel board my trial time was limited. Having a viable alternative, I did not persist in trying all possibilities with the parallel connection. I'll leave this for some other adventuresome soul.

Since the GS has a serial port I decided that serial would be the easiest way to make the connection from computer to printer. The cable for this is available from most Apple dealers. The cable is the same one used by modern Macs (Mac+, Mac SE, Mac II's) to connect to an Imagewriter I (the original serial Apple printer). It is also the same cable used to connect Apple IIes (via a Super Serial Card) to an Apple Personal Modem. While it looks the same, it is not the same cable used for connecting an Apple IIe to an Imagewriter II printer nor the same as the cable from an external modem to your GS. Be careful as there is no way to tell these cables apart except with a Volt-Ohm meter.

I have my printer and GS printer port set for 19,200 bits per second and Xon/Xoff handshaking. No other handshaking is set and all other things are standard. Almost. Because of the peculiarities of my setup I have the printer port device set to modem instead of printer.

One of the major problems that I have is that the GS serial port is not a full serial port. The full RS-232 specifications have many more signal lines than the GS serial port. In addition, on the GS serial port two of the eight existing lines are actually intended for AppleTalk. Where this causes problems is that the HP Laserjet IIp needs some of those (on the GS) non-existant standard signal lines for complete handshaking if, and here is the tricky part, you want to use PostScript without using AppleTalk. For use with Appleworks Classic, you don't need those fancy signals and can talk to the printer without trouble. When the GS native mode printer drivers become available for the IIp you should be able to print using the standard cable. So there is definitely a patch of sunshine somewhere.

Until we have an HP native drive I am limited to my workaround. Since the GS doesn't have the complete hardware handshaking that my PostScript cartridge wants, and since I haven't bought the AppleTalk interface board for the IIp, I have to bypass the hardware handshaking.

Last month I wrote about how to accomplish printing a PostScript file to the disk and then sending the resulting text file to the IIp with Snowterm, a telecommunications program. This results in the one other departure from the standard in my Printer Port settings. To use a program such as Snowterm to talk directly to the printer it was necessary for me to set the Printer Port device connected mode to Modem. This does not affect any use of the printer when using AppleWorks Classic or other text programs like Mousetalk, so it is quite acceptable.

Since I am printing "raw" PostScript files to the disk, I have also become accustomed to looking at PostScript code. PostScript is simply a page-description language for creating graphics.. So a PostScript file created by Appleworks GS is really a program describing how to draw your text or graphic on a piece of paper. The PostScript files are stored on your disk as a simple text file which you can read with anything that is capable of loading a text file (I use the WriteIt! NDA). Occassionally I find it necessary to modify the PostScript programs prior to sending them over to the IIp. Why?

There are several reasons. First, when the LaserWriter driver creates the PostScript program that describes how to draw your page, the driver includes several details about your document in PostScript comments. These comments aren't necessary for your document, but include things like the name of your document, the user of the LaserWriter and the computer using the LaserWriter.

Wait, you say. How does the driver know who the user is or which

computer is using the LaserWriter? Well, the driver is intended for use with AppleTalk, a computer networking protocol. Under normal usage of AppleTalk you would sign on with a User Name and your computer would be supplied a name by the network. Obviously, since we are not using an AppleTalk network when we create a PostScript file, this information is not available to the driver. So the driver simply puts random data in place of the User Name and computer name. Unfortunately, this data can sometimes cause problems. Usually the problem is that one of the random datum is a Carraige Return, which PostScript objects to. Using the WriteIt! NDA I can spot this type of problem and correct it before sending the file to the printer.

Another problem is again caused by the LaserWriter driver, but this one needs more explanation as well as a little definition of terms. Much of my new-found knowledge has come from "Inside the Apple LaserWriter" by Roger Hart, an excellent book about using the Apple LaserWriter to its full potential. It reads in some places like a sermon from Apple Computer and doesn't really consider the GS as a possible user of the LaserWriter.

The book mainly deals with the working of the LaserWriter and is computer-independent for the most part, but where it is isn't it is oriented towards the Mac. But there is a lot of good information that can be used by GS owners since the GS as it has been developed is a close cousin of the Mac. And remember, once you have added a PostScript cartridge to a laser printer like the IIp, you really have the functional equivalent to a LaserWriter.

One of the gems I discovered within "Inside the Apple Laserwriter" was the difference between a screen font and a laser font. Screen fonts are the standard GS fonts (file type $C8). Screen fonts are bit-mapped representations of the individual characters in one particuliar size. Screen fonts are used when printing to dot matrix printers. When using "better text" in the print dialog box, a screen font that is twice as large as displayed on the screen is printed at half size on your printer, giving better resolution to your text.

Laser fonts on the other hand are PostScript programs that explain the mathematical formulas needed to draw the characters regardless of the character size. A laser font hence can be infinitely scaled without any loss of definition or clarity in the print out and without the jaggies or block shaped curves that dot matrix printers produce.

Laser fonts are printer-independent while screen fonts are computer-specific. However, to use a Laser font with a standard GS program like Appleworks GS, you need the corresponding screen font. An Apple II program like Publish It! 3 uses screen fonts that have completely different names than the corresponding laser fonts, but this is unusual.

Back to the problem. When I print an Appleworks GS document (as a PostScript file) to the disk, occassionally the screen font I had selected was not being printed by the IIp. Since I was using what is called the executive mode, i.e. talking to the PostScript cartridge directly via a telecommunications program, I was able to see what was happening. And with a couple of weeks of research I pinpointed the problem and developed a solution.

PostScript is a case-sensitive language, i.e. it makes a distinction between a capital and a lower-case letter. It is also sensitive about the correct spelling of its fonts. My PostScript cartridge has 37 PostScript fonts built in. Several are of one font family (such as Times) with several different styles (plain, bold, italic and bold italic).

Apple's LaserWriter driver is designed to recognize certain screen fonts and rename them so that the LaserWriter (or other PostScript printer) will us the appropriate laser font. It is apparant that an AppleTalk-connected LaserWriter functions properly this way. But when sending PostScript from a file rather than through the program's print dialog box, some things are not done by the book.

The problem is caused by the non-uniform naming conventions of PostScript fonts. A plain-style font can be referred to by just its name (Such as Courier) or by an appended suffix such as Roman (Times-Roman), Light (Bookman-Light) or Book (AvantGarde-Book). This applies to bold styles (Courier-Bold, Bookman-Demi) and italic styles, too (Times-Italic, Courier-Oblique, Bookman-LightItalic, Zapf Chancery-MediumItalic). If Apple's LaserWriter driver doesn't recognize a screen font it will simply tack on the style modifier. If PostScript sees a style modifier that does not precisely match one of its laser fonts then it will substitute some other font (generally Courier) for the one you tried to use.

Some of the screen fonts are handled properly (20 out of the 37) and some are not. Entering the PostScript file with a text editor I can modify the erroneous driver output to a form that my PostScript cartridge will accept.

```
1)   /|_____Helvetica/
   Helvetica T rf
2)   /|_____Helvetica ci gf
3)   dn
4)      405    26 mto
5)   bt
6)   (Palatino-Roman)     99 mt
7)   et
8)        0    12 sfs
9)   up vm
10)  /|_____Palatino/Palatino
   T rf
11)  /|_____Palatino ci gf
12)  dn
13)     405   262 mto
14)  bt
15)  (The quick brown fox
   jumps over the lazy dog.)
   254 mt
```

The above PostScript code is

from one of my test pages. I've added the numbering to make it clearer. The exact meaning of the PostScript commands are unknown to me,but certain features are clear enough for me to modify the program to suit my needs. The first line tells PostScript to use the Helvetica plain style font. The actual words to be written in the font are contained within the parantheses on line 6.

On line 10 there is another PostScript instruction to change fonts in this case to use the Palatino plain style font. And here is where one of those problems arise. My PostScript cartridge expects the Palatino plain style font to be called Palatino-Roman, but as you can see it is not. The text to be printed in this font is again listed in the parantheses on line 15, "The quick brown fox jumps over the lazy dog."

If I had sent this listing (along with the rest of the necessary PostScript program) to my printer as is, PostScript would inform me that it could not find Palatino and was substituting Courier. In fact, however, I did change the code in the one line to read as follows:

```
/|_____Palatino/Palatino-
    Roman T rf
```

With this one simple change the test sentence printed, as I desired, in the Palatino plain style font. For the most part changes such as this will be minimal through a total document, since you would likely be using one font for most of the text. Besides Times, one of the fonts I like best doesn't even need any modifications to work perfectly with my IIp. I now have almost complete control of PostScript from my GS.

My latest project is an attempt to download new and different PostScript laser fonts into my IIp's extra memory and make use of them from Appleworks GS. So far I haven't been sucessful, but I figure it is only a matter of time.

Shrunken Heads

One of the newest additions to my collection of useful programs is the GS-specific version of ShrinkIt. GSHK is a standard GSOS program that unpacks and packs files that have been archived with a variety of packing programs. Andy Nicholas's previous program, ShrinkIt, is the BBS standard for packing Apple II programs. The GS version adds a few additional features that are exciting, such as the ability to process and unpack Mac StuffIt archives!

Since PostScript is currently dominated by Mac users, most of the PostScript files are archived with StuffIt. GSHK does indeed unstuff Mac files, whether or not you can actually use the resulting files. I've only had a few days to play with this, so by next month I'm sure I'll have more to say.

If you wish to ask questions or discuss war stories, contact me on America Online (KimBrennan) or on the WAP TCS in Conference Two.

Inside the Apple Laserwriter
by Roger Hart
1989 Scott, Foresman Computer Books
$21.95

Shrinkit V3.03
GSHK V1.0
Andy Nicholas
8415 Thornberry Drive East
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Diary of a Hard Drive Hell

By Rick Zeman

There comes a time when every IIGS owner feels compelled to throw himself into the realm of mass-storage devices. I reached this major juncture when I found myself rooting through hundreds of 3.5" floppies in an effort to find the program that I just *absolutely* had to use at that moment.

Uh, huh. Much easier said than done.

Being an avid graduate of Mr. Evry's Cheap Computing School, I figured that I wanted the biggest, fastest drive that I could find—and also the cheapest! Remarkably, I pretty much succeeded at getting a cheap drive. But there was a cost that came with it: time. It took time to put the drive together, to try to debug my problems, and once I found a decent SCSI interface card, it took *two months* until it was fully operational in my system!

I purchased an 80 MB Seagate SCSI internal hard drive from an IBM PC vendor at a computer show in Northern Virginia, paying roughly $400 for it. A good "cheap computing" price. Now those of you in the know realize that an IBM internal hard drive is just a paperweight—albeit an expensive one!—without a case, a power supply and a SCSI card.

I decided to plan ahead and allow for future expansion of my system, so I purchased a Tulin double bay drive case with the ribbon cable having twin SCSI connectors and the heavy-duty power supply. That set me back another $200. At first, the drive was *really* erratic: I would get unexplained tool crashes periodically, and I could not optimize the drive at all using ProSel-16's optimizer; I would consistently get "range-read" errors which Glen Bredon swore resided in my drive, not in ProSel.

After a bit of digging in the Tulin case, I found that one of the wires was supplying current to the case. Strike one against Tulin.

When I began assembling the drive, Apple had just announced the new High-Speed SCSI card so I added that to my "next to be purchased" list. No dealers in the Washington area had any, so I limped along with a borrowed Revision C SCSI card. It was slothful, but it worked once the loose wire was cured.

On CompuServe's Apple II forums, I read about a brand-new SCSI drive board called RamFAST manufactured by a new company named CV Technologies. CV Tech is an offshoot of the now-defunct Ohio Cache Systems and, one hopes, CVT will do much better.

The CV Tech RamFAST card is a caching, DMA-compatible SCSI *drive* card. Note the emphasis on the word "drive." It is not a "true" SCSI card as this revision (Rev.B) does not support CD-ROMS, tape backups or most other SCSI devices. The RamFAST card is a caching drive controller with 256k of memory on board.

The RamFAST was purchased from Barney Stone for $199—the introductory price. The first problem was that the RamFAST card connector was too big for the slot; I had to file the edges in order to get the board to seat properly.

The first time I boot the GS, BAM! I crash into the monitor. After much fiddling with the DIP switches on the board, it boots into ProSel 16—my Start file—and then I try to launch Talk is Cheap and into the monitor I go again. I tried the card in my brother's GS and I have the same problems. Time to call tech support.

CV Tech's technical support is nothing short of phenomenal! One calls CV Tech and they'll likely speak with the President of CV Tech, the engineer who built the board, or the secretary. They're all the same person, Andrew Vogan. CV Tech is a two-man operation, and the programmer doesn't deal with the public.

A fascinating conversation ensued, dealing with subjects as far-ranging as the RamFAST to poltergeists to the ROM 04 GS to Applied Engineering. I knew that I was in for a treat when he started humming the theme from "The Twilight Zone" when I was describing the symptoms to him. We determined that "Well, dude, looks like you've got a problem!" Specifically, I had not only a bad RamFAST, but the memory card that Applied Engineering had sold me as being DMA compatible ain't.

I received a new RamFAST and didn't install it until I had bought a new memory card. I ordered an "On-Board" 4M DMA-compatible card with 2M of 80 ns 1 chips from On Three, Inc. for $195. That came promptly, but they neglected to include either the invoice or the credit card receipt. Sigh.

Like a little kid at Christmas, I tore the GS apart again and plugged both of my new toys in. No go, again. By this point, I *knew* that the gods were conspiring against me and wondered just what the heck was going on.

Andrew Vogan was as mystified and intrigued as I was, so I sent the RamFAST back again. This time, I got new chips AND an upgrade to the oscillator. Apparently, the drive's buffer only holds 1k of data and the 8 MHz oscillator that originally came on the board was upgraded to 10 MHz. The slower oscillator effectively knocked away the 1:1 interleaving that the RamFAST supports and cut the throughput in half.

The third RamFAST messed up too! It booted fine, so I formatted the drive, changed the interleave to 1:1, and restored from my backup. I ended up with 118 errors: overwritten files, backwards links and a plethora of other munged data. After talking again with Andrew, he said that he had tested the board for an hour and a half and it worked fine for him. I have a simple system, a ROM 01 GS sporting only a PC Transporter in slot 6.

As everything worked smoothly with the Revision C card and having established that my new On-Board was DMA compatible by having me read him all of the chip numbers over the phone, we were at a total loss. We finally agreed that he would send me an Apple DMA SCSI card to see if that would work in my system and to see if I had any DMA incompatibilities.

After disassembling the drive and adding an Apple terminator to the unused port, I tested the system and it worked beautifully! No synchronization errors at all. I reassembled the drive and the RamFAST ceased working—my first clue. By trial and error I found that using the RamFAST the drive *would not* work in the bottom bay. The Tulin's power supply wasn't shielded enough and its emissions interfered with the RamFAST. After installing a junky PC 3.5" drive in the bottom bay and putting the hard drive on top, everything hummed. I called CV Tech at 4:00 on a Sunday afternoon to tell them what the problem was and was speaking to Andrew after one ring. Try getting AE on a Sunday!

RAM the torpedoes

Despite the inability of the RamFAST to drive such SCSI devices as a CD-ROM, the board turned out to be pretty decent and very fast.

The board's memory is used two ways. first, the card will "look ahead" and read the next track(s) into its memory that the application will need *before the application needs it!* This information will then be transferred into the GS' memory temporarily without robbing cycles from your GS.

The second use for the memory is as a write buffer. Save a document and it's dumped into the RamFAST's buffer instantly, freeing the computer for the next operation. The RamFAST will then write the data to disk at its first free moment.

After you install the card into your GS and turn the system on, a control panel pops up. In this are all the maintenance utilities needed to set up the drive. Low-level formatting, interleaving, partitioning and the ability to set the "look ahead" value are some of the items listed. These utilities are built into a ROM along with the SCSI driver that replaces both of Apple's hard disk drivers.

Once you have formatted, interleaved and partitioned you're ready to fly... and I do mean fly. This puppy is *fast*!

CV Tech recommends a 1:1 interleave for all but the slowest (60ms) drives. SASI Sider drives are also supported by the RamFAST, but only at a 4:1 interleave. Configuration is easy and intuitive.

The drive is significantly faster in GSOS and phenomenally faster in ProDOS 8. The following table shows some quick tests that I made using the Rev C card at 8:1 and the RamFAST at 1:1 interleaving using a Seagate ST-296 28ms drive.

ITEM TESTED	REV C	RamFAST SCSI
Boot Time: (2,0119k system folder 79 fonts, 4 NDA's, 4 CDA's, booting into ProSel-16 8.49)	40 secs	19 secs
Boot AWGS (six modules)	43 secs	29 secs
finder (from ProSel)	12.5 secs	9 secs
America Online	13 secs	10 secs
AppleWorks 2.0 (fully loaded into memory)	13 secs	4.5 secs
Talk is Cheap (with Startup file)	11 secs	4.5 secs
Shrinkit 3.03	7 secs	2.5 secs
ReadyLink 1.3	9 secs	3 secs
ProSel-16 Volume Repair timings:		
Linear Read	9.68 ms	4.56 ms
Random Read	32.44 ms	23.17 ms
OS overhead	3.69 ms	3.08 ms

As you can see, boot times are reduced by a third in GSOS and by two-thirds under P8. Also under P8 (and the primary reason that I bought the RamFAST) is that the card will remap the ProDOS 8 device table so that P8 will recognize more than two virtual devices in the same slot. Hence, I have my hard drive in slot seven. I have four partitions: /Hard1 (32 megs), /Hard2 (32 megs), /MSDOSVOL (a 16M MS-DOS partition for the PC Transporter) and /Copy, an 800k partition.

/Hard1 and /Hard2 are considered drives 1 and 2 in slot seven. ProDOS 8 normally wouldn't recognize the other two partitions. However, the RamFAST pseudo-slots them into slot two, drives 1 and 2, so P8 recognizes them as being valid ProDOS devices. You have a choice of three slots to pseudo-slot to for a total of eight partitions available under P8. These slots are defined in the RamFAST control panel. Also, for PC Transporter owners, as the PCT operating system operates under ProDOS your Transporter will speed up considerably! I didn't do any timing tests on the DOS side but, subjectively, it's *much* faster.

I would wholeheartedly recommend the RamFAST board to anyone who is considering buying a new SCSI card, even with the present SCSI chaining limitations. Rev C of the RamFAST—due out in a few months_should allow full SCSI compatibility. I *do* regret buying the Tulin drive case, as it has caused nothing but trouble for me.

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Rick Zeman is the Apple II Wizop on the TCS. Starting with the September issue, he will be Apple II editor for the Journal. Comments are welcomed! America Online—RZeman; CompuServe—72677,3364; WAP, leave messages on the Apple II telecomm board, C2B1.

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...making it pay

by Ron Evry

Regular readers of this column understand the Cheap Computing philosophy. Simply stated: *The more computers put into the hands of more people, the better off we will all be.* "Cheap Computing" is a relative term. I have met people who honestly think nothing of dropping four or five thousand dollars on the latest hardware, knowing full well from past experience that the next leading edge technology will come along in a short time and demand more money.

Perhaps in a few cases, this represents conspicuous consumption by the idle rich, but by and large the people who sink large sums into computer equipment expect a substantial return on their investment in a very short time. The newspapers are full of success stories among personal computer users who found new ways to make money with them. But is it possible to make money with "low end" equipment? Perhaps so.

The easiest way to make a low end system pay for itself is to find out what it does. Most American homes still do not have computers. Therefore, even the simplest tasks could be in demand.

Even the cheapest of dot-matrix printers are capable of producing passable "near letter quality" type. Armed with a cheap word-processor (such as FREDWRITER, two dollars at the disketeria, or FREEWRITER, free from the TCS), anyone can do typing at home for a few bucks a page.

Pop a few ads up on college campus bulletin boards and watch the calls come in when the term papers come due! Even at $2 a page, five 25-page term papers can pay for a nice printer.

A graphics program like PublishIt!, GeoPublish, Springboard Publisher, Newsroom, or even Print Shop can turn out work that your friends, neighbors and co-workers will gladly pay for. There are some people who use these programs to crank out laser-printed advertising pages and newsletters on a professional basis for business clients at high prices.

But anyone can print up a leaflet that says, "I print brochures - $10 a page!" and put them up at laundromats or drop them off at neighbors' doors, and get paid for practicing with the programs. No, you will not get rich at $10 dollars a page. But your friends and neighbors will surprise you with the array of uses they will have for your printing facilities. Yard sales, home businesses, club meetings—these are impractical activities for ad agencies and most graphic artists. You ought to be able to pay for your software at the least, and maybe even put aside a few dollars for something you want.

Low-end machines have lots of uses. Have a hobby? Collect things? Ever think about using your computer to organize your bottle cap collection, or your recipe boxes? You have? Good. Now think of all of the other people with collections who will pay you to "print it out" for them! Ask around, I'm sure you know at least a few people who share your hobby.

And then, of course, they know some other people as well. If enough people share your hobby, you might consider printing a little newsletter for them and sell some subscriptions. If your fellow hobbyists do enough buying and selling, you can sell the subscriptions at cost and make enough off classified advertising to buy a complete set of Moxie bottle caps!

If you are lucky enough to have a modem, put together a "text magazine" pertaining to some special interest of yours. Interview experts in your particular field of interest, write some articles or reviews, put it all together in a text file and upload it on every board you can find. Tell your readers to upload it as well, and before long your work will be on bulletin boards from coast to coast. Put your name and address in a prominent place and request donations of cash and articles. You may make a few dollars (don't count on too much) and you most probably will receive lots of material for inclusion in future issues.

Be imaginative! Dig around in your brain and you would be surprised at what you know a lot about. If your field of expertise is in shopping for sneakers, write about that. If you want to write about the social significance of the cartoons of Ving Fuller, then do it. If it's a business topic, and you earn a reputation for it, you may end up charging for your newsletter and distributing it to FAX machines using one of the commercial services such as America Online or MCI Mail.

I sincerely hope you make a lot of money with your computer. Even if you don't, you ought to be able to eventually break even. And if you have a lot of fun along the way, or meet new people, or learn things you never knew about your personal interests, then you are ahead of the game.

CHEAP SHOTS:

Recently, I downloaded a fascinating program called "Say It, Sam" from a BBS. The copyright notice was hidden inside the program blocks (in integer basic!) and was very vague: "copyright 1982 DON'T ASK." If this was for real, I would like to contact the legitimate copyright owner for permission to try to utilize the program in other software. But more than likely, I

have run into a common problem in the world's largest assortment of software: *greyware!*

Of course, public domain software is produced with no copyright whatsoever for anyone to use in any way they like. Freeware is copyrighted by the author, but released for the public to use free of charge. This procedure enables the author to be altruistic, but still protect his rights in case somebody wishes to use his routines in commercial software. Shareware is similar to Freeware in that it is distributed free of charge and is copyrighted by the author, but it differs in one important way: the user is requested to pay for the program if he or she wants to keep using it after a certain "tryout" period.

Commercial software is protected by copyright, and unauthorized use or distribution is illegal. Usually, commercial software is clearly labeled as having a copyright, and in fact, copyright law procedures generally call for prominent placement of the copyright notice.

Greyware is software copyrighted by an institution or group that no longer exists and never transferred ownership of rights to anyone. This kind of software is becoming extremely common, and the greyness of it makes it difficult to know what to do with it.

If it is impossible to track down the owner of a program, then does that mean that it can't be used in any way, shape, or form for 75 years after the copyright date, except by the lucky few people who bought the original while it was on the market? And here's something to chew over: if Apple Computer ever codifies its contention that the "look and feel" of software is protected by a copyright, then does that also mean that no one could write a new version of a "grey" program that does the same thing in a different way?

This is a problem that will rear its confusingly ugly head more and more as software companies fold up their tents and slip away into the night. What's the Cheap Computing philosophy? Lie low and don't use the code in your own applications if you intend to distribute them. But if you have a personal use for the program it would probably warm the cockles of the original author's heart.

• To all fanatical Cheap Computists, please forgive me. I took the plunge and bought a second disk drive. I have got along quite nicely with one drive for over a year now, and I know that this was a rash move on my part. What can I say? Nevertheless, I will always consider whether a program can run well with one drive when I review it. I will continue to keep my eyes peeled for closeouts, bargains, trades and used goodies. Thank you.

• Once more, nationally syndicated columnist T.R. Reid is Apple-bashing. He says he's just the messenger with the "bad news" on the death of the Apple II. But guess what, folks: the reports of the Apple II's death are extremely premature!

It was T.R. Reid who just a few weeks ago "discovered" that great IBM program, Print Shop! Somebody ought to tell him where MS DOS came from. The last time I looked, it was a kludgy descendant of CPM featuring the most bizarre array of convoluted anachronisms of every anti-intuitive command-line interface.

The Apple II obsolete? In the long run, the users of IBM and compatible systems will display about as much loyalty to their computers as hula hoop, pet rock and Davy Crockett Hat owners have through the years. "Apple II forever" is a rally cry from people who know a wonderful thing when they see it. They know that the Apple II has held up so well because it reaches people. The II is truly a *personal* computer.

I'll never forget that line of Reid's: "If you're going to teach kids about computers, then why not teach them with the ones they will be using in the workplace?" Of course, Reid is modest when he claims to be merely a messenger—such prescience can only be achieved by a true seer! Imagine knowing what kind of computer today's third graders will be using a decade from now in the workplace! Will all the kids be trained on XT's, AT's or JR's? Knowing how much loyalty IBM has had to their own products over the years, maybe we can get some advance prototypes of PS/8, running on OS/14.

Seriously, if Mr. Reid believes that computers are in school to teach students how to use the computers in the "workplace" then I pity the man, because he is blind to what computers are for. "Business" computers are simply an interim application of a technology that will lift humankind way above the mundane cares of today's workaday world. In the not too distant future, computers will provide access to more knowledge by more people than his petty dreams can comprehend. Scientific advancements will proceed at breathtaking speeds. People will be able to access the things they need to do the jobs that need to be done, efficiently, and from anywhere.

Students don't need to learn about computers to "learn about computers." They need to get as much knowledge as they can, as quickly and efficiently as they can, and to communicate that knowledge to the rest of us. Apple, IBM, Commodore, Atari, NeXT, Cray; whatever it takes—we need to get as much computer power in the hands of students as possible. One computer per student is not enough, but it will do for a start. How about getting behind *that*, Mr. Reid?

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Byts And Pyces

by Gary Hayman

I have begun a regular monthly column to include 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.

I will start out with a collection of a few pieces of interest. You are encouraged to submit your hints, ideas and suggestions to me for monthly organization and publishing. You may do it via the TCS or "snail mail" to me at 8255 Canning Terr., Greenbelt, MD 20770. I can be reached via telephone at 301-345-3230.

A2-Central reminds us that we should be using ProDOS 8 v. 1.8 if we have any 8-bit applications that use files that are named with upper and lower case (mixed case or all lower case) names. AppleWorks, for one, can balk if it encounters such filenames and the latest ProDOS 8 was not used for booting. When booting, check your screen to see if version 1.8 is being used.

Overinked Ribbons

Sometimes while using a dedicated or universal re-inker you may have discovered that you overinked the ribbon. It is not such a good idea to put such a ribbon in your printer with the intention of wearing off the ink by activating the "Self-Test" mode and printing a few pages of characters. Not only will the ink start to clog the print head, but residue is deposited on the print head platen which may smudge your paper later.

Here is a hint that I use to wipe off the excess ink; I am using an ImageWriter ribbon, but perhaps you can use the technique on other printer ribbons as well. The ImageWriter ribbon cartridge is powered through a "cross-cut" opening on the bottom of the cartridge. My battery-powered screwdriver, armed with a Phillips #10 head, fits very nicely into the cross-cut.

All I do is to place the ribbon cartridge upside-down on the counter and insert the power Phillips driver into the recess. In my left hand I hold a piece of tissue or soft paper towel which *gently* surrounds the exposed ribbon. The tissue will wipe off the excess (both sides) as the ribbon passes through. I activate the driver (*counterclockwise*—it is very important that it goes in the proper direction) for about a minute or less, and the excess ink is deposited on the tissue. Now wipe any excess ink off the casing of the cartridge and you'll be ready to start printing. Remember not to put too much pressure on the tissue that is wiping the ribbon.

Beagle Updates Have Arrived

The latest rounds of updates are in the hands of the Beagle Buddies. The programs affected are TextTools, MacroEase, DeskTools, ReportWriter, SpreadTools, and Graph/Paint. Also there is an AppleWorks Companion (Munz) update. ReportWriter and TextTools are major revisions. MacroEase is a new disk and is identical to what is being sold as of this writing, so no updates will be necessary here. DeskTools makes some changes in TO.Calendar and Calendar Data. SpreadTools fixes TO.Cellink, and there are a few changes and fixes in TO.Graph and TO.Paint.

I have placed a copy of the pertinent notes in an ASCII text file in the AppleWorks File Transfer Area of the TCS. Read the file to determine if you need to update your TimeOut series and, if not all, which ones. For those of you who don't own modems or are not on the TCS, give me a call and perhaps we can make arrangements for you to get the updates by some other means.

The Beagle Buddies will be happy to update your disks. You will find a listing of the Buddies and their location in the Journal.

IIGIF

Sam Upton writes about how he is using the program IIGIF (available on the TCS) for quickly viewing GIF graphics that he has been collecting. IIGIF works on any Apple with 64K and runs under ProDOS 8. An extra benefit of the program is its ability to convert and save the picture in standard graphics formats to be used for other programs such as Publish It!, Blazing Paddles and Dazzle Draw. If the computer has at least 128K the DHR setting can be used; for the "less endowed" machines, a HR setting can be set. You may choose Black & White or Color conversion, although I have found that B & W is more real while Color gives interesting results. GIF graphic files are available on the TCS, from public domain sources, and the commercial information services.

Viewing Graphics with an NDA

Speaking of graphics, for you IIGS owners there is a neat little New Desk Accessory (NDA) available on the TCS in the IIGS Desk Accessories area called SHOWPIC.NDA. You simply copy it to your DESK.ACCS folder in the SYSTEM folder of your boot disk. You can call it from GSOS 5.02 (or later—6.0 can't be far behind) by pulling down the Apple menu of any standard GSOS program. The NDA allows you to view virtually any type of IIGS HiRes graphics with the filetype $C1, $C0, $F8 (PrintShop GS), and $06 (binary unpacked graphic).

The program allows you to choose one or more of the files for a slide show viewing and it even allows you to have a continuous showing until you tell it to stop. There is a quick-look mode that almost instantly causes your choice to appear on the screen when selected.

Any picture you have selected, no matter what the source, may be re-saved as either the common $C1 unpacked graphic screen or the standard $C0 Apple Preferred format.

Also the program allows you to convert 320 mode pictures into 640 mode color or gray scale pictures. I find the NDA very handy for reviewing disks with graphics in a quick manner.

Windows

I still feel that WINDOWS is one of the most convenient programs for reviewing text files and printing them out. A great feature is that at the top of each printed page there appears the file name and the page number. No more mixing up of pages. It is rapid and convenient. It also can be used to launch ProDOS 8 Basic and System. You can find it in the TCS downloads section - Apple II Utilities. The file DOGPAW must also be in the same directory for WINDOWS to work.

BRCC Catalog

The Big Red Computer Club has just published its 1990 Apple II computer Catalog. It is jam-packed with inexpensive disks and equipment that you might be interested in. There are good descriptions of the disks which sell for $3.50 or less. To get your free catalog write them at 423 Norfolk Ave., Norfolk, NE 68701.

AppleWorks 3.0 Cell Formats

Warren Williams, writing in the June edition of the NAUG Forum, tells us that you can lose the value format of a cell if a label is displayed in the cell and, later, a value is displayed in the cell. He suggests a work-around using the Apple-V to set a standard format first throughout the spreadsheet, then if the above situation happens, all will be fine.

Possibilities

Dale Smith has furnished the following information that appeared in a column called Vaporware by Murphy Sewall in the June edition of the APPLE PULP which is published by the H.U.G.E. Apple Club of East Hartford (CT):

Apple IIGS - Mac Merger?

Apple is beta testing a number of products intended to, eventually, make the distinction between the Macintosh and the older II line functionally irrelevant. IIGS Operating System 6 and IIGS HyperCard (yes, they really are in beta test) will make the IIGS appear more Mac-like than ever. A "Multi-Finder IIGS" which allows hard disk space to be used as virtual RAM also is nearing marketable shape. Future Apple computers are likely to offer compatibility with older software by using the technology of the IIe on a chip which manages the I/O and video on the Mac IIfx (Did everyone catch John Sculley's reference to the "Macintosh IIGS" during Apple Vision 90s for educators on April 24?) Apple has, but has not committed to market, a Mac Plus board for the IIGS as well as the 16 MHz 68000 "under $2,000" color (under $1,500 black and white) Mac SE-compatible with Apple II coprocessor. An Apple II board for the Mac II family also is in beta test. Apple executives may still be trying to decide which options to offer and when to announce them. Sources indicate they can only continue to hum a tune which sounds vaguely like "September Song."

On the Horizon

Zip Technology is beta testing a 12 MHz accelerator for the Apple IIGS which contains only 22 chips (compared to more than 200 on the older, slower Applied Engineering accelerator). Alas, the problem is that although the hardware zips, marketing doesn't. It may be some time before Zip ships... Video Technologies is telling dealers in Canada that its 10 MHz Apple IIGS clone that was shown to developers last July will be for sale by Christmas.

If you have tidbits or hints to share, please send them along.

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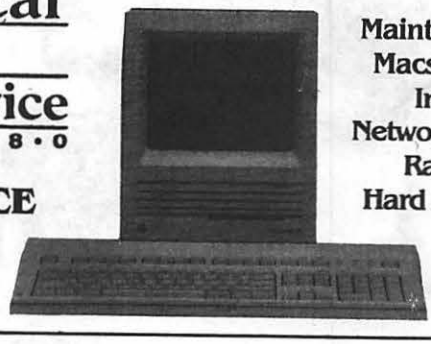
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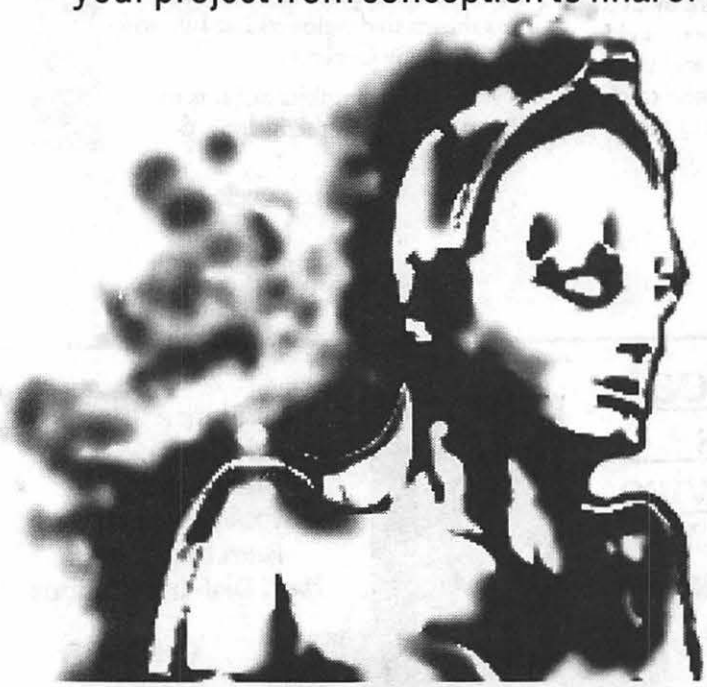

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The Information Age at the Smithsonian

by Phil Shapiro

About a month ago the National Museum of American History opened up a new exhibit, titled "Information Age." Sponsored by about six of the big info age corporate titans, the exhibit covers everything from the invention of the telegraph to laserdisc-driven interactive multimedia.

In one phrase, the exhibit bytes off more than it can chew.

At the entrance to the exhibit you can pick up your very own UPC barcode, printed on a paper flyer. You're then supposed to scan in your bar code by holding it up to any one of a half-dozen monitors. Why you're supposed to want to pick up your very own barcode is not entirely clear; I didn't feel like waiting in line, so I skipped the barcode charade. Only after leaving the exhibit did I finally decode the barcode charade.

The first hall traces the early history of the (yawn) telegraph. True, the 1858 laying of the trans-Atlantic telegraph cable was an achievement of sorts. But the exhibit allocates far too much space to this early history. With beeps and bells beckoning from the far end of the hall, the average person at the exhibit spent upwards of five nanoseconds reading the telegraph displays.

With so much else to see, I rushed through the whole 19th century section, gladly bypassing the invention of the telephone and similar curiosities. My pace didn't slow much as I strolled passed a model of the ENIAC, the vacuum-tube behemoth that started this whole computer thing. What I really wanted to see was the Apple I on display.

And there it was, a wooden box with the word Apple carved in the back section. But where was the motherboard? What I really wanted to see was Woz's ingeniously designed motherboard. (Not that I would immediately fathom the intricacies of his layout. But at least I could stand in awe at the compact design. Somehow it's hard to stand in awe of a wooden box.)

Lined up beside the Apple I was a display of many of the other early hobbyist systems. Naturally an Apple II and a Mac Plus were also on display. But curiously, the display says the Mac was first introduced in 1982, a full two years earlier than its January 1984 introduction. Somebody didn't check their facts on that one.

Beside the Apple I display is a laserdisc selection of short video clips. Press on the picture of Wozniak and you can hear Wozniak talk about the early days at the Homebrew Computer Club. Woz talks in an animated voice for exactly one minute and 12 seconds. And then the short video-bite is over, and you can make another selection.

Disappointing...some museum administrator must have figured that the average attention span for a video bite is about one minute and twelve seconds.

All the while, the other displays at the exhibit are going beep, kerplunk, whop and whizz. The barrage of noise begins to get to you after a while.

I then walked over to see a Mac IIcx connected to a Kurzweil 250 keyboard/synthesizer. Using a touch screen, you could choose any of 20 different instruments. The Mac then played a short jazz piece, competing valiantly with the background din. You could also try playing the synthesizer, which most kids dutifully did by running their hands up and down the keys in a predictably cacophonous way.

The next station I saw had a television screen with the words "Live satellite broadcast from Soviet Union" written underneath. The broadcast was in Russian and featured the usual lively Soviet fare. I watched for about 13.5 seconds, which was about three times longer than other people watched. The display would have been far more interesting if it hadn't have been live, but had a translated commentary at the bottom of the screen.

Or better yet, why not have a live modem link to a museum in Moscow, with a mini-computer translator to translate inputs at either end? That surely would bring the technology to life.

Which brings me back to the Apple I. The display would be far more interesting with an Apple I motherboard out in the open, actually working thru a program. Even a text-based program, sorting out prime numbers, would be interesting to behold. (If I recall, the Apple I did have some graphics capability. Why not show that off, rather than showing off a wooden box?)

The exhibit as a whole had a few redeeming features. A computer-aided design station from Hewlett-Packard allowed you to choose the various components of a bicycle and then view the finished product in various perspectives on the screen. The resolution of the display was impressive.

The end of the exhibit had another redeeming section, with a short multi-screen film on the subject of communications in history. Although only 15 minutes in length, the film was well produced and gave a good overview of the subject.

On the whole, the Information Age exhibit is a buzz of confusion whose individual parts don't seem to have much relation with one another. The exhibit would be frustrating and tiresome to most

school-age children, although some of it might be of interest to technically minded high school students.

If you're looking to take your kids to a museum this summer, far better to stop by the Children's Museum on Capitol Hill. Their computer/communications section is far smaller, but much better focused. And you leave the Children's Museum wanting to learn more, which should be the goal of any museum exhibit.

Phil Shapiro is an amateur historian who enjoys learning about early microcomputer folklore, and the creative people who made it all happen.

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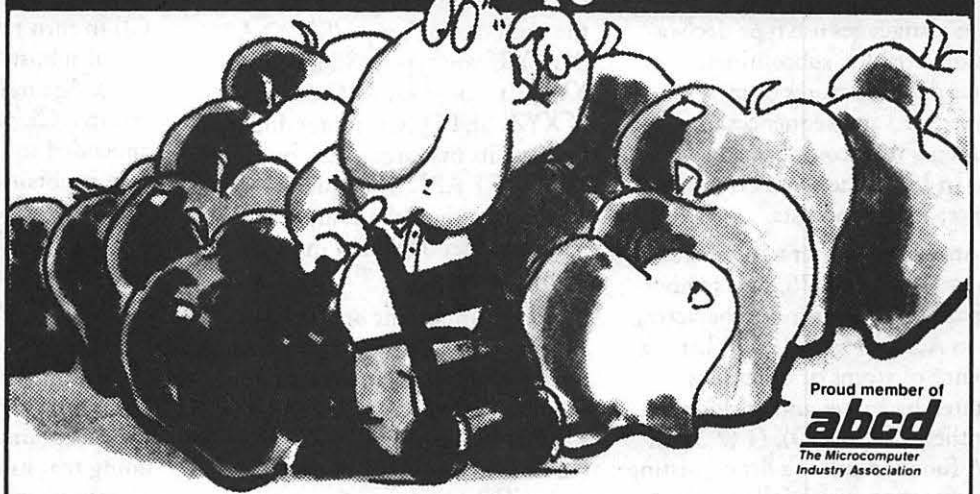

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APPLE II

Program with a LISP!

by Richard FitzHugh

The language LISP (LISt Processing language) is particularly useful for symbol manipulation. It has been the standard language in artificial intelligence programming for about 30 years.

There are many dialects of LISP, all based on the same fundamental ideas. The program that I use is KeyLISP, published by XPrime Corp., Los Angeles, CA, telephone (213) 470-4663. It is the Apple II version, which uses only 64k of memory. A 128k version and another for the IIGS, which uses extended memory, are planned but have not yet been released.

LISP is very different from languages like BASIC, Fortran, Pascal or C. It may seem strange at first, but it becomes more natural with use. Programs in the "mainstream" languages use type declarations of variables, subroutines, various data structures (arrays, records, etc.) and sequences of statements with complicated syntax rules. In LISP, the syntax is much simpler: atoms and lists.

An atom is either a number, such as 5, 1/3, or 0.75, or a symbol consisting of one or more characters, such as A, ALPHA, B123. A list is a sequence of atoms or other lists separated by spaces and enclosed in parentheses: (A B CD), (1 (2 3) 4), etc. A function call is a list consisting of the function name followed by its arguments, thus: (+ 2 3) means 2 + 3 and returns 5. A program is a function; to run the program, just call the function.

LISP is usually implemented as an interpreter which is operated interactively from the keyboard. The interpreter performs an endless loop, called Read-Eval-Print. When a LISP expression is typed in, it reads it, evaluates it, prints out the result and waits for the next input. Every atom can have a value. A number is its own value, but a symbol is assigned a value, either an atom or a list. A list which is a function call applies the function to its arguments and returns the result.

There are many built-in functions or operators in KeyLISP for arithmetic, values assignments, list manipulation, managing input and output, etc. For example, the operators SET and SETQ assign a value. If you type (SETQ X 5), LISP assigns the value 5 to the symbol X and prints the value 5. The next time you type X, it returns 5. If you want to avoid evaluating something, use the operator QUOTE (or its abbreviation, a single quote mark).

To assign the symbol XYZ to the symbol ABC, type (SETQ ABC 'XYZ). If you typed (SETQ ABC XYZ), it would set ABC to the value of XYZ. SETQ (set-quote) does not evaluate its first argument, but SET does. (SET ABC 5) evaluates ABC to XYZ and assigns the value 5 to XYZ. This provides flexibility in assignment statements.

Two important operators in LISP are CAR and CDR (named for certain registers in an ancient, long-forgotten computer). They "cut up" a list. If L is the list (A B C D), then (CAR L) returns its first element A and (CDR L) returns the rest of the list (B C D). Two important constants are T (true) and NIL. NIL denotes both false and the empty list (). The operator NULL tests whether its argument is NIL. That is, (NULL '()) returns T; (NULL '(A B)) returns NIL.

LISP evaluates recursive functions efficiently. To define a function REVERSE that reverses the order of the elements of a list, type:

```
(DC REVERSE (L)
(IF (NULL L) NIL
(APPEND (REVERSE (CDR
L)) (LIST (CAR L)))))
```

This example illustrates a number of things about LISP. First of all, parentheses must balance. If you don't type in enough final closing parentheses, LISP thinks you're not through and waits for the rest. DC is an operator for defining a new function, and (L) indicates its argument, a list called L. If L is empty, NIL is returned. Otherwise a list is returned which consists of two lists concatenated or APPENDed. The first list is the reverse of the remainder of list L after removal of its first element (obtained by calling REVERSE itself recursively), and the second is a list containing only the first element of L.

For example, the call (REVERSE '(A B C)) works recursively. At the top level, seeing that L is not NIL, it returns the list (C B A), where the first element A of L is appended to the list (C B), obtained by calling (REVERSE '(B C)) recursively. Calling (REVERSE '(B C)) in turn returns (C B), where the initial sublist (C) is (REVERSE '(C)). Again, (REVERSE '(C)) returns (C), which is the element C appended to the empty list, which in turn is obtained by calling (REVERSE '()), which is just NIL. Traveling back up the recursion ladder gives, in succession, NIL, (C), (C B) and finally (C B A) at the top level.

In LISP you can create a new symbol and assign it a value during the execution of your program (try doing that in Pascal). As an example of how to operate on symbol names, the built-in operator EXPLODE takes a symbol and returns a list having as elements the separate characters of the name, each enclosed in double quotes. (EXPLODE 'APPLE) returns ("A" "P" "P" "L" "E").

The converse operator IMPLODE does the reverse; (IMPLODE '("A" "P" "P" "L" "E"))

returns APPLE. The following expression defines a function that returns a new symbol with the characters of its argument reversed:

```
(DC REVERSENAME
(N) (IMPLODE (REVERSE
(EXPLODE N))))
```

If you type (REVERSENAME 'APPLE), the atom ELPPA is returned. This may not be something you would want to do in practice, but it shows how symbols can be taken apart and rearranged in LISP.

You can store a set of function definitions in an ASCII text file. Then enter KeyLISP and use the CD operator to set the current directory, DIR to print the directory, and finally LOAD to read the file. This sets up the functions for your use. For example, if your file has the pathname /MYDISK/FOLDER1/F, type:

```
(CD '"/MYDISK/
FOLDER1")
(DIR) (This prints
the directory)
(LOAD 'F).
```

These and many other operators, as well as much information on the structure and use of LISP, are described in the well-written KeyLISP manual. This short article is intended to give you a brief taste of LISP, but not describe it in detail. If you are weary of conventional programming languages, try LISP!

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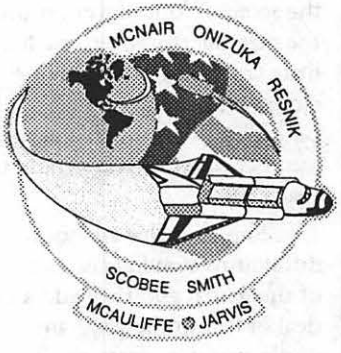

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Number Muncher

by Phil Shapiro

The ideal computer learning program is playful enough that an adult would enjoy it. Such a program is designed so that you just want to keep playing.

One of the most fun educational programs I've come across is a math drill called Number Munchers, by the Minnesota Educational Computing Consortium (MECC). Two spin-off programs, titled Fraction Munchers and Word Munchers, are also award-winning material. This review covers the Number Munchers disk, although some of the introductory comments will apply to the other disks as well.

These Muncher programs play like an arcade game. The object of the game is to go around the screen "eating" the numbers that fit the rule at the top of the screen, all the while avoiding the nasty "Troggles" that appear randomly from the sides of the screen. Your player on the screen, the number muncher, is a handsome little creature whose jaw opens and closes with the ease of a presidential candidate. To munch a particular number or word you simply press the space bar.

The Troggles are not too difficult to avoid at the easier levels of the game, and they add a great deal of fun to the program. If you don't stay away from the Troggles, one of your number munchers could get eaten. The danger here is part of the appeal. Kids will say "Oh no! Another Troggle!" with a mixture of apprehension and glee.

As you complete one screen of number munching, another screen appears, with a new rule at the top of the screen. Typical rules might include "Multiples of 3" (3,6,9,12,15,18,21...) or "Factors of 12" (1,2,3,4, and 6). All the while the program keeps score of your number-munching skills. If you score high enough you may be invited to record your name in the Hall of Fame.

Any computer instructor will tell you that children jump at the chance to add their name to the Hall of Fame of a computer program. But the Muncher programs provide an even more potent incentive than the Hall of Fame: after every three screens of numbers, the program rewards you with an amusing little animated cartoon. These cartoons last all of 20 seconds each, yet they're genuinely funny. A typical scene involves a situation pitting the number muncher hero against the Troggle villains, where the muncher always comes out on top.

But what skills do these programs develop? The five categories of games on the Number Munchers disk are Multiples, Factors, Primes, Equality, and Inequality. Between them, these categories cover many of the arithmetic skills studied in third, fourth, and fifth grade. The Multiples game covers the multiplication table in an oblique sort of way. Factoring skills are always useful to develop as they'll be called upon frequently in algebra and advanced math. Prime numbers are an intellectual curiosity which ought to be explored, although not dwelled upon. The Equality and Inequality games are the most academic of all and really get students involved in thinking about numbers.

For example, in the Equality game the rule might be "Equal to 2." The grid on the screen would then be filled with short little expressions, including "10 / 5" and "2 X 1." These expressions would be munchable, but "5 - 2" would not, since it's not equal to 2.

These games require both physical as well as mental dexterity. Some children will find the physical dexterity aspect a little intimidating at first, especially with the menacing Troggles appearing every so often. But the Troggles are really quite slow and can be avoided without too much effort. The program gives you the choice of a joystick or the four arrow keys for moving the munchers. It's been my experience that the arrow keys are easier to use and are more predictable when the going gets fast-paced.

One second grader has conquered his fear of the Troggles, and chortles "Who's afraid of the big bad Troggle, the big bad Troggle, the big bad Troggle" as he maneuvers his muncher around the screen. He has become so proficient that he can run rings around any approaching Troggle (Of course I vehemently deny that he ever learned such childishness from me!).

Besides developing math skills the program also forces children to think quickly under pressure. They have to keep their wits and maintain composure if they want to develop mastery of the program. This is an important skill in itself in our fast-paced, Troggle-filled real world.

Number Munchers is advertised as being for ages 8 to adult, but I have known many younger children who have tried the game. Although some of the arithmetic may be beyond their ability, I find it hard to not let them have a chance at playing the game. So I have used Number Munchers with some kindergarten and first graders, but only in a private lesson setting where I could give them personal guidance and assistance.

Number Munchers runs on any 64K Apple II, including the older Apple II+. A color monitor is not required. Fraction Munchers requires 128K of memory and runs on an

enhanced IIe, IIc, IIGS, or IIc+. (Incidentally, playing any of the Muncher games at 4 megaHertz on the IIc+ can be devilishly challenging and fun for older children.)

The best price I've seen for Number Munchers is $26, postpaid, through the group purchase discount of the Big Red Computer Club (membership $20/year, phone number 402-379-4680). Number Munchers is also available for $27.95, plus postage, from Educational Resources, 800-624-2926. To get a free catalog of other MECC software, you can call them at 800-228-3504.

The author develops instructional software, and teaches computers in elementary school.

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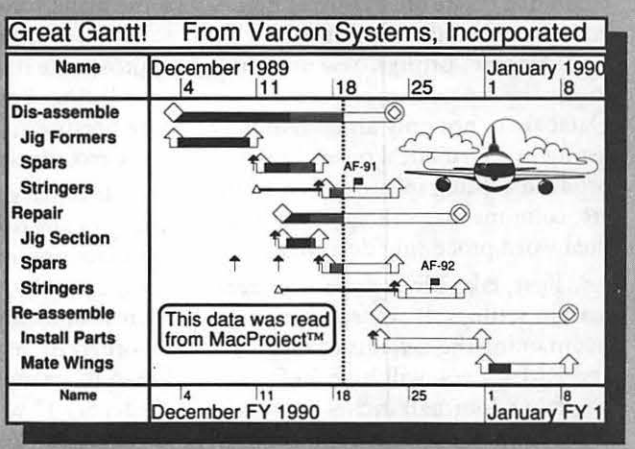

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AppleWorks 3.0 Techniques

by Gary Hayman

Side By Side Listings In AppleWorks

Sooner or later you are going to want to put a listing of items in the body of an AppleWorks word processing document. Many times instead of having one long listing you will want it in multiple columns indented neatly in your document.

Your first inclination is to create a new TAB ruler with the OA-T command, type an item, then TAB before you start typing the next item, much as you would do it on a typewriter. *Please resist this.*

Consider that you may want the items to be in alphabetical order running across or down each column. Consider that as you type in your items some may be wider than your TAB settings and cause overflow to the next column. And consider that you may want to change items in the list at a future time.

The Database Technique: The Across System

Now that you've done all your considering let's talk about one technique (there are a couple) that you can use to accomplish your "side-by-side" listings. You are going to use the capabilities of your Database to not only arrange your listing in alphabetical order, but produce a listing in two, three, four, etc. columns that will appear in your final word processing document.

First, take a look at your present margin settings. If you still are maintaining the defaults of LM = 1 and RM = 1 you will have 6 of the possible 8 (normal) inches to work with. Keep whatever margin settings you have made in mind.

Leave your word processing document with an ESC and go to the Main Menu and select "Add files to the Desktop," "Make a new file for the: Database," choosing finally "From scratch," name it and press Return. You will now be at the Change Name/Category menu with Category 1 as the default first category. Press ESC and Space Bar to get to the Insert New Records menu and press ESC and OA-Z to get to the Review/Add/Change menu in multiple-record layout.

Now you are going to create some blank records. Press an OA-C, select "Current record" and type the approximate number for the items in your listing. You can be extravagant here because you can easily delete those records that you will not use.

Now just start typing your listing in any order you desire. Press a Return after each item. Although not mandatory, you will probably want your listing to be in alphabetical order. After your last entry, press OA-A to arrange your list and select "Category 1" with an arrangement "From A-Z." Your list now appears in alphabetical order. If there are any blank entries at the top of your list, this is the time to delete them with the OA-D command. And also count the number of characters in your longest entry.

Next we must prepare the list in the appropriate format. Type OA-P and select "Create new 'labels' format" and choose "From scratch." Type a name for the report, press Return and your report format screen will appear. Type an OA-O to get to the printer options screen and make the following changes: type PH to eliminate the header, type in the left and right margin values from your original document and type CO and set it to 2 or 3 columns.

Look at the "Char per column (est)." As long as this number is larger by at least one or two units than the number of characters in your longest entry you get good results.

To examine the results press ESC to get to the Report Format screen, then OA-P to the Print the Report screen and choose "The screen" and look at your list. If you would like to tighten up the columns for aesthetic reasons—such as removing "excess white space" between columns—then hit the Space bar and an OA-O to get back to the Printer Options screen and increase the left margin by .5 or 1 or whatever, keeping your eye on the "Char per column (est)" to make sure it is longer than the longest entry. You can continue to experi-

Dazzle your friends...

Shock them by showing how effortlessly you move around the keyboard...

Kick sand in their (figurative) faces...

ment using the commands in this paragraph again until you are pleased with the results.

Next we have to take the listing to the word processing document. Press the Space bar to go to the Report Format screen. Press OA-P to get to the Print the Report menu and choose "The clipboard (for the Word Processor)," press a Return to choose and press the Space bar to continue. Transfer to your document by pressing an OA-Q to call the Desktop Index and select your document. Place your cursor at the proper place in your document and do an OA-C to copy. Choose "From clipboard" and your list will appear. You will notice that it is flush left with the rest of the document and you may want to indent it some by changing your left margin just above the list.

EXAMPLE:

Bull	Cat	Chicken
Cow	Dog	Goat
Horse	Lamb	Pig
Ram	Rooster	Sheep

The Spreadsheet Technique: The Down System

"Now hold on!" you say. Although you like what we have just done, you would really prefer to have the listing, instead of being ALPHABETIZED READING ACROSS each line, ALPHABETIZED DOWN column A and then continue with column B, etc. Or maybe not alphabetized at all, but in another order of your choice. Boy, are you picky! Some pundit once said, "If you can think of it, AppleWorks can probably do it." This time we will use the spreadsheet instead of the data base to accomplish our task.

Leave your word processing document with an ESC and go to the Main Menu selecting "Add files to the Desktop," "Make a new file for the Spreadsheet" and "From scratch." Name it and press Return. Press OA-V to get to the Standard Values menu and select "Column width." With the Open-Apple and arrow keys expand the width of the columns a little to accommodate your longer items.

Press ESC to get back to the REVIEW/ADD/CHANGE menu and start typing your listing in Column A only. When finished, if you desire, you can alphabetize the list by pressing OA-1 to get to the top, OA-A to start the arrange, OA-9 to select to the bottom, Return to select, select "Labels from A to Z," press Return and your listing will be in the correct alphabetical order.

Now note how many items there are in the listing. You can easily tell because they are numbered at the left of the screen. Decide how many columns are appropriate—perhaps two or three. Let's say three for this example. You determine how many items will appear in each column.

Move the highlight to the first item that you would like to appear in the second column and you press an OA-M to start a Move operation. Select "Within worksheet" and by "Block" and highlight the next one-third of the items. After pressing a Return move the cursor to the very top of column B and press Return again, transferring those items to the second column. You return to column A, moving the cursor to the top of the last third of the items, and in a similar manner using the OA-M (block move), within document, the items to the top of column C.

Again, using OA-V (Standard Values), select "Column width" and start adjusting the width of the columns using the Open-Apple and Arrows until the "white space" between the columns looks correct to your eye.

A Return finishes the procedure. You should now eliminate the Page Header in the Printer Options menu. Press an OA-O to go there and type a PH and a Return—which sets the header to "No." Then ESC back to the Review/Add/Change menu. You now move your cursor to cell A-1 where you will begin a print of a block to the clipboard for use in the word processor. This is important. You are choosing "Printing" instead of "Copying" in order to *preserve the layout.* Copying produces Tab markers and causes the symmetry of your columns to be off, so press OA-P to tell AppleWorks you want to print, select "Block," highlight all the items and press Return and further choose "The clipboard (for the Word Processor)" and press Return again.

Now do an OA-Q to get to the Desktop Index, highlight your word processor document and press Return. Place your cursor at the left margin at the appropriate position and press OA-C and copy "From clipboard" your listing. You will notice that it is flush left with the rest of the document and you may want to indent it some by changing your left margin just above the list.You will probably find that this second technique is a little easier (I prefer it), and you will want to use it more often as it provides you with a more acceptable way of alphabetizing your list—or even placing items in a certain order. Experiment with both and use them whenever you want to place column lists in your documents.

New Kid on the Copyblock

There is another NEW technique that will accomplish the above in an easier way. TimeOut TextTools from Beagle Brothers contains an accessory called "CopyBlock" (this is different from Block Copy contained in TimeOut SpreadTools). CopyBlock is like a cut and paste that works in the word processor. With it you can select an area, cut it and move it along side, or even over other text. By appropriate use of margin settings, you can create multi-columns of listings as I have described in this article—but in a flash.

GAMES

Game news

The PlayRoom

by Steven Payne

As usual, there's not a lot of gaming news for the Apple. **King's Bounty**, a fantasy/role-playing adventure from New World Computing for the Apple II series, is now available, and may be the best of the lot (if any of the production values from **Might and Magic I & II** have been carried over); we hope to see it soon at the GameSIG meetings. The same company is also promising something for the Macintosh called **Nuclear War**, which appears to be a take-off on Chris Crawford's **Balance of Power**; the print ads show a bikini-clad babe on the beach in the glow of a mushroom-shaped cloud.

The July/August issue of *Computer Gaming World* praises the graphics and sound in **Task Force** (Fanfare, Britannia Software, Apple IIGS, $39.95 list), a new arcade game in which you must clean up the nasty drug lords (with or without the help of Rasheeda Moore) in five US cities.

At the moment, things look better for the Mac. Spectrum HoloByte should soon release the third installment in the addictive **Tetris** series; as you might expect from the title, **Faces**, this time the falling blocks are face segments, famous and not so famous, which you must arrange into the correct patterns. (Sounds like those flip-flop books we all had as kids, where you could combine a man's beard with a rabbit's nose and a woman's hair!)

Best of all, Sir-Tech at long last seems ready to complete the **Wizardry** series for the Macintosh. The've just come out with an upgrade of the Mac conversion of the initial scenario, **Proving Grounds of the Mad Overlord**, first released for the Mac in 1984. Because of problems with some of the more recent machines, the 1984 version has been revised by local programmer Terry Monks (well-known to many of you), who added better dungeon graphics, some limited animation of the monsters during combat, and in-game mapping crystals (where have we seen that feature before?). Those who already have the 1984 version can upgrade for a mere $8; otherwise the list price is$59.95. The Sir-Tech people also say that a conversion of **Knight of Diamonds** is well underway, and should be coming out as soon as they eliminate some final bugs.

That's it for this month. I hope to contact Terry Monks soon, to ask how his work is progressing. Meanwhile, here are addresses for the companies mentioned above:

New World Computing, Inc.
P.O. Box 2068
Van Nuys, CA 91404

Fanfare (Britannia Software, Inc.)
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Omega

by Jeff Stetekluh

Omega is a new game from Origin in which one designs software for and selects components for a cybertank, which then competes on a battlefield against other tanks. Silas Warner's game, Robot War, released for the Apple II in 1981, had many of these features.

I had a lot of trouble getting started with Omega, but once I solved some problems I was able to progress rapidly. Omega crashed constantly on my Apple II+, so I borrowed an Apple IIc. Omega comes on two double sided disks that remain write locked, and you must supply a disk for read/write storage. The regular disk access slows things down.

The game is complex, so that the manual is important as reference and for learning how to start. A large part of the manual is used just to guide you in making an example tank and starting a battle. Learning all this was rather difficult, and the manual leaves out the fact that in the Apple II version certain files must be copied from one disk to another.

After getting to the point where I could see a battle, I was let down. The battlefield is so large that only a small part of it is shown. Looking at the big picture (which unfortunately pauses the game) often showed me that the tanks were far apart and wandering aimlessly. If the tanks met before their fuel ran out they would just stop and destroy each other. It was painfully slow and boring.

One feature of Omega is that when you are satisfied with your tank you can try for a promotion to the next level, where you will have a larger budget to spend on better tank components. If you win a least seven out of ten battles against a single tank in this special match, you are awarded a promotion.

Since there was only one other opponent, my tank did not even have to move. It just needed better armor or a bigger cannon to do well. So by selecting the cheapest of most components I was able to equip my tank with a big cannon. My tank had a feeble drive system that was never used, but it was a winner! With a bigger budget I got better armor, a larger cannon and got promoted again and again.

Several things bothered me about Omega. The instructions I wrote for my tank to stay still, watch for another tank and shoot at it were very simple, but they had to be checked for mistakes. I had made a small mistake. I know that writing a compiler is hard work, and getting a compiler to generate meaningful error messages is harder yet, but at least Omega could have given me an error message as useful as "Conditional expected but not found." Instead I got the almost worthless message "That does not compute."

The style of the manual annoyed me, too. According to the manual, I am a new employee of the Organization for Strategic Intelligence. I was given a 15-minute coffee break and a two-day furlough. The manual refers to disk drives as access slots, uses the term authorize instead of compile, and disks are called Identification discs.

Years ago, my friends and I competed against each other inRobot War. That competition with its series of new tactics and countermeasures really made Robot War a great game. With such competition I am sure I would like Omega more, but what I experienced was a dull and annoying game.

We really do need help finding a permanent place to roost. No reasonable offer ignored, and it certainly would make the life of the Office Manager much easier.

If you have any ideas, give her a call. If it turns out to be in your own neighborhood, think of the time that you will save on Saturday mornings...

On the boards...

Best of the TCS—Mac

by Paul Schlosser

You'll notice a new by-line at the top of the page this month, due to Lou Pastura deciding to move on to a new job. Lou is now the Macintosh Editor for the Journal, and asked me to write this column.

My goal for this column is to keep you abreast of the latest Mac news I find in my electronic travels on the WAP TeleConference System, GEnie, the Twilight Clone and a few other less notable places.

It seems that some users, after updating with the 6.0.5 Easy Install option, have suffered through some unexplainable crashes and other weird behavior. The prevailing wisdom is to not use the Easy Install option, to use instead the Custom Installation. One fellow even reported doing the Custom Install over top of a previous Easy Install, and it cured the problems he was experiencing. If you find this method a bit too adventurous, and are having problems with 6.0.5, it may be best to use Font D/A Mover to copy out your existing fonts and DA's, then install a fresh System file. Finally use Font D/A Mover to copy everything back in. There was one report of the Installer stopping with some vague error message (aren't they all?), which turned out to be that the fellow had 15 DA's installed, the maximum. He had removed one of the standard Apple DA's, and the installer wanted to reinstall it. But since he was at the limit, it just stopped with the vague error message. Temporarily removing a DA, then running the Installer, solved the problem.

Apple has announced version 2.0 of HyperCard, which will begin shipping in July. New features include variable card sizes, multiple windows, better text editing and styles, better printing, and a faster, more powerful HyperTalk. You can upgrade to version 2.0 through participating user groups and Apple dealers. Software only upgrades will be free, while the new documentation and disk set can be purchased for $49.95.

Expect System 6.0.6 this October, as well as two new Macintosh models. The first will be an entry level 68000 based Mac, currently code named the Mac XO. It runs at 8 MHz, and is expected to retail for $1,500. The second is the Mac IIsi, with a 68030 CPU, 8 bit color built-in, and a retail price of $3,200. This unit is likely to force Apple to cut prices on the SE/30, IIcx and IIci. Due out in January 1991 is a unit currently code named the Mac LC. The LC has a 68020 CPU, runs at 20 MHz, has 4 bit color built-in, and will retail for $1,600. This unit is aimed at the home and education market, and may cut into sales of the Apple IIgs. An interface card for the LC is rumored to be able to run Apple IIe software. Look for the Mac Plus to be discontinued in October. Apple is also said to be working on a new laptop model, in conjunction with Toshiba.

Next is a conflict between Photoshop and the Kolor cdev. If you set the window background color to something other than white the Adobe Color Picker will not function correctly. You'll get lines and weird colors. The problem lies with Kolor, and not Photoshop. Keep the window background color set to white if you use Photoshop and the Kolor cdev.

Do you use a tape drive for back-up purposes? Baseline Publishing is offering owners of the Apple Tape software a chance to purchase their new back-up program for tape drives, "Express Tape". Express Tape is said to be four times faster than the Apple back-up software, and easy to use. The price is $25 plus proof of ownership of the Apple program. Call Baseline at 901-682-9676 for details.

Some old news, concerning the Lisa computer, has been causing a flurry of comments on the boards. In September 1989 Apple dumped 2,700 Lisa computers in a landfill in Logan, Utah. The decision to dump the computers was due to their obsolescence, lack of customer interest and the fact that no new software is being written for them. The 2,700 computers were among a lot of 3,700 that was offered for sale to Sun Remarketing. Sun only purchased 1,000 (they had previously purchased and sold 4,000 Lisas which had been upgraded to the equivalent of a Mac Plus), so the remaining 2,700 were carted off to the landfill.

A new file archive utility, Compactor, is also generating lots of interest on the boards recently. Compactor is easy to use and seems more Mac-like to me, in that it doesn't use icons across the bottom of the screen. All the program functions are selectable from the standard menus across the top of the screen.

In some early tests Compactor-created archive files are approximately 25 to 30 percent smaller than StuffIt-created files, and the time required to pack or unpack is equivalent. Both programs can create self-extracting archives, meaning the user does not have to have the application program to unpack the archive file. There has been lots of talk of abandoning StuffIt, and changing over to Compactor for up– and downloading files. Now that there is a freeware version of Compactor (Compactor Extractor) available, I expect more users to favor the change. StuffIt Deluxe is due out soon, and is a commercial version of the shareware version.

In February Apple reduced the price of its AppleCD SC CD-ROM drive from $1,199 to $899, and sales have risen beyond expectations. The waiting list for the drive is 8 weeks.

Symantec Corporation recently signed an agreement to acquire Peter Norton Computing, so look for Norton Utilities for the Macintosh to be marketed under the Symantec name. The utility program includes many of Norton's famous PC utilities, including disk editor, speed disk, unerase and disk doctor.

Monogram, the maker of Dollars and Sense, is about to be acquired by Software Toolworks. Software Toolworks will continue to support Dollars and Sense, and version 5.0 is scheduled to be released in a month or so.

The following files were uploaded to the Macintosh File Transfer area on the Pi TCS during the last thirty days. This listing represents only a small portion of the files available for downloading on the TCS. Call the Pi Office at 654-8060 to obtain a password.

File area 13 - Mac Fonts

028 OSWALDBLACK.SIT Type1 Laserfont for ATM etc. Full set.

027 OSWALDGREY.SIT Type3 Laserfont. Full character set

026 BODIDLYBOLD.SIT Type 1 Laserfont. Full character set.

File area 14 - Mac Games

081 GLYPHA.SIT A joust sort of game

080 DATETRIS.SIT Tetris in a DA

File area 15 - Mac Graphs

075 CRANE.EPS.SIT White/black crane blend - eps

074 PRESS Old printing press - MacPaint

File area 16 - Mac Hypercard

076 WORD.FARM.SIT Stack for young children

075 STOCKMKT20.SIT Market Simulation Stack, v2.0

File area 17 - Mac Technotes

013 LAPTOP.SIT Extensive list of Laptop prices

012 TN.ABOUT.90.02 About the Mac Tech Notes—Read Me First

011 TN.INDEX.90.02 Mac Tech Notes, Index, 2/90

010 TN.FONTS.SIT Mac Tech Notes, Standard Fonts, 2/90

009 TN.001.050.SIT Mac Tech Notes, #1-50, 2/90

008 TN.051.100.SIT Mac Tech Notes, #51-100, 2/90

007 TN.101.150.SIT Mac Tech Notes, #101-150, 2/90

006 TN.151.200.SIT Mac Tech Notes, #151-200, 2/90

File area 18 - Mac Utilities

196 PUP.SIT Used to update White Knight.

195 DESKWRITER.SIT Cdev for DeskWriter print driver

194 FIN.SNDS.SIT Finder Sounds, version 1.2

193 ADDRESSBOOK.SIT Version 2.5, application, DA, and doc's

192 MELTDOWN.SIT New module for After Dark

191 COMPACTOR.1.10 File archive/compression utility, v1.10

190 COMP.EXT.SIT Compactor Extractor, freeware

189 FFP.CONT.SIT Cdev to accelerate math on Plus/SE

188 INIT.SCOPE.SIT INIT/cdev to monitor other INITs

187 F1.F4.SIT INIT to enable F1 to F4 on ext.keyboard

186 NIST.TIME.SIT Set your Mac's clock to NIST time

185 ASCII.DA.SIT ASCII DA version 3.2

184 DOS.MOUNT.SIT DOS Mounter demo, from Dayna

183 GIF.SIT Giffer version 1.08

182 SENDPS2.SIT Revised SendPS 2.0. Postscript lzr util

181 LAUNCH.SIT Launch applications & DAs in MF

180 KEYLIGHTS.SIT Cdev for lights on ext keyboard

179 TAPPY.TYPE.SIT Cdev to generate typewriter sounds

178 GIZMO.SIT Desk accessory for viewing GIF's

177 DISKEEPER.SIT Disk management utility

176 WK6.7 Upgrade for White Knight, see browse

175 KTM.FIX.SIT INIT to fix Turbo Mouse/6.0.5 bug

174 CURSANIM.SIT Cursor Animator. Makes waiting fun.

173 COLOR.CDEV.SIT Colorize windows and menus

172 SCSI.PROBE.SIT SCSI Probe version 2.03

On the boards...

Best of the TCS—Apple II

File area 2 - Apple II Misc.

023 APL.FIESTA.RPT 07/01/90 0063K Detailed report on Arizona Apple Fiesta

022 FREDMAIL.MAP 06/29/90 0019K FredMail Sites. DL from The Archives][

021 PROLINE.SITES 06/28/90 0006K Site list for ProLine BBSs

020 FRACTAL.2E.SHK 06/13/90 0076K DHR program - fun with fractals!

019 BBS.DANGERS 06/07/90 0032K Some effects of Federal laws on BBS's

File area 4 - Apple II Utils

132 RAMFAST.EJT.SHK 06/28/90 0004K RamFAST Utility

131 SHK3.0.3.XTX 06/24/90 0066K ShrinkIt v3.0.3 [Do get it]

130 A2FX.7.SHK 06/19/90 0021K Apple II file exchange. Beta v.7.

129 GIFSTRIPPER.SHK 06/12/90 0006K ver. 1.1a - strips MAC/BIN headers

128 DBMASTER.3.5. 06/01/90 0047K Shareware DB Master database.

File area 11 - AppleWorks

063 COWS 06/08/90 0030K COW CARTOON LAUGHS

062 BEAGLE.NOTES 06/06/90 0025K Beagle Update Notes in ASCII TEXT

File area 12 - ProSel Updates

026 PSLRVSN850.SHK 06/21/90 0013K PROSEL changes thru 8.50

025 PROSL16.850.SHK 06/21/90 0142K Prosel 16, v. 8.50

File area 5 - GS Desk Accs

093 TRANSPROG.SHK 06/05/90 0058K Select app. during bootup, etc.

092 FONTDA.INST.SHK 06/05/90 0024K Font/NDA/CDA installer/deinstaller-V2.0

091 NL2.92.SHK 06/03/90 0076K NiftyList v2.92-programmer's CDA

File area 9 - GS Misc.

044 RBBL.SS.SHK 06/21/90 0018K Sample AWGS SS for Rotisserie Baseball

043 ARABIAN.SHK 06/16/90 0064K For Music Studio 2.0-from Nutcracker

042 TOYFLUTES.SHK 06/16/90 0066K For Music Studio 2.0-from Nutcracker

041 NUCLEUS03.SHK 06/03/90 0129K Nucleus graphic animation (ROM 03)

040 FNDRPATCH.SHK 06/01/90 0006K Very handy finder patcher

File area 10 - GS Utilities

063 TSGS.DOC.SHK 06/30/90 0013K Tonight's Sky GS's Docs

062 SHKIT.ICONS.SHK 06/30/90 0004K Modified ShrinkIt Icons (see Browse)

061 ZZ.COPY.V2.0 06/24/90 0101K V2.0 of ZZ.Copy

060 TSGS.SHK 06/24/90 0140K Tonight's Sky GS

059 GSHK1.0.XTX 06/24/90

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E

Back to school...

WAP Tutorials

by Rob Clark

Washington Apple Pi provides training to its members and to nonmembers on a regular basis. We've provided complete course descriptions for the Macintosh tutorials, and a general description for the Apple II courses.

We urge you to bring your computer with you to most classes, since we have no computers for you to use at the office. If you can't bring your own computer, you'll have to look over someone else's shoulder.

Occasionally, the WAP class schedule changes due to circumstances out of our control. Please call the office at least one business day prior to the class date to confirm that your class will be held as scheduled. We regret an inconveniences that this may occasion.

Payment for Courses

The fee for each session is $15 for members, $20 for nonmembers. Mail or phone in your registration to the WAP Office. You must preregister the class or classes you wish to attend by either sending in the registration form or by phoning your registration into the office. Please do not class any of the Education Program volunteers to register. If you've signed up for a class and next to cancel, please do so 2 business days prior to the class, otherwise we can not refund your money.

Apple IIGS Tutorials for August

We're providing the Apple IIGS Introductory Tutorials, a three part series in August. The courses are held each of the first three Tuesday evenings in August from 7:00 to 10:00 pm at the WAP office. The dates are August 7th for Part I (course # GS 1890), August 14th, for Part II (course # GS 2890), and August 21st, for Part III (course # GS 3890). You may sign up for just one, or for all three, if you wish. Of course all three courses provide you with the most benefit. These classes are designed for beginners, not experienced users.

Macintosh Tutorials for August

This month's courses, in addition to the three beginning courses, are Introduction to PageMaker, Introduction to Microsoft Excel, Introduction to Microsoft Word, Introduction to MacDraw II, and Introduction to PowerPoint. Each class costs $15.00 for members, $20.00 for non-members, and all classes are held at the WAP office. See the listing below for more details.

Introduction to Macintosh, Part I (Course # M1790). 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 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, external drive, start-up disk, and an unformatted disk.

Course Date:Monday, August 6th, 1990

Introduction to Macintosh, Part II (Course # M2890)

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 (key board shortcut for Menu Bar commands).

Materials required: Your Macintosh, external drive, start-up disk, and an unformatted disk.

Course Date:Monday, August 13th, 1990

Introduction to Macintosh, Part III (Course # M3890).

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 what a RAM disk is and how to use one, if you wish; how to use Switcher or MultiFinder; and finally, you'll learn about the various RAM configurations possible with each Macintosh.

Materials required: Your Macintosh, external drive or hard drive, start-up disk, and an unformatted disk.

Course Date:Monday, August 20th, 1990

Introduction to PageMaker (Course # PM1890)

This class is for those who little or no experience with PageMaker, and want to learn enough to do a simple layout. Topics covered are: the many uses of PageMaker, the PageMaker environment, a demonstration, menus and menu commands, PageMaker tools, keyboard shortcuts, and layout exercises.

Materials required: Your Macintosh, a hard drive, copies of your PageMaker disks.

Date: Saturday, August 4th, 1990

Introduction to Microsoft Excel (Course #ME1890)

This class is for those who little or no experience with Microsoft Excel. Topics covered are: the many uses of Excel, what Excel is used for, environment, a demonstration, Excel window and tools, menus and menu commands, keyboard shortcuts, advanced features, exercises, and other views.

Materials required: Your Macintosh, an external drive, copies of your Excel disks.

Date: Saturday, August 18th, 1990

Introduction to Microsoft Word (Course # MW1890)

This class is for those who little or no experience with Microsoft Word. Topics covered are: the many uses of Microsoft Word, Word's environment, a simple demonstration of Word's features, menus and menu commands, window icons, keyboard shortcuts, formatting exercises, and Word's different views of your document.

Materials required: Your Macintosh, an external drive, copies of your Word disks.

Course Date: Tuesday August 28th, 1990

Introduction to MacDraw II (Course # MD1890)

This class is for those who little or no experience with MacDraw II. Topics covered are: the many uses of MacDraw II, MacDraw's environment, a simple demonstration, the drawing tools, menus and menu commands, keyboard shortcuts, drawing exercises, and views of your drawings.

Materials required: Your Macintosh, an external drive, copies of your MacDraw II disks.

Course Date: Wednesday, August 29th, 1990

Introduction to PowerPoint (Course # PP1890)

This class is for those who little or no experience with PowerPoint. Topics covered are: the many uses of PowerPoint, PowerPoint's environment, a simple demonstration, the drawing tools, menus and menu commands, keyboard shortcuts, an exercise, and the various views and parts of your presentation.

Materials required: Your Macintosh, an external drive, copies of your PowerPoint disks.

Course Date:Thursday, August 30th, 1990

Intensive Double Helix Course.

We're working to bring a six week, six class, series on Double Helix, one of the most powerful relational databases for the Macintosh. In this course, for beginning users of Double Helix, or even for the moderately experienced, you will start with the basics and develop a fully functional membership database application. You can sign up for any one class, or for all six. Obviously you'll get the most benefit from all six classes. We hope to begin this series in September.

General Description. This course is designed for the serious student who wants to learn how to design a fully relational database management system (DBMS) using the full power and capabilities of Double Helix (DH). During the course of the six 3-hour lessons the student will develop a fully functional membership database program capable of tracking households, individuals, group memberships, dues, and room reservations. The student will learn how to design entry forms, various output forms, listings, mailing lists, form letters, queries, customized menus, and customized user interfaces. The student will learn how to use the many different programming tools available in DH such as posting, querying, summary calculations, date calculations, text manipulations, form calculations, conditional calculations, mathematical calculations, indexing, subforms, form views, sequences, and variable user access levels. Finally, the student will learn basic as well as advanced database design concepts to develop a DBMS that is functional, efficient, and "user friendly." Although the specific example used throughout the tutorial is a membership-tracking database, the skills and lessons learned can be directly applied to virtually any other kind of DBMS problem. (It is highly recommended that students attend all lessons, regardless of experience level, to gain the maximum learning benefit.)

Class # 1 (Beginner Level), Setting Up a Database. Introduction to the basics of good database design; introduction to the basic elements of DH programming and a general orientation to the basic DH programming objects; how to set up a simple relational database involving a one-to-many relationship. Students will start developing a membership database involving households and individual members. Students will learn about basic data and calculation fields, entry forms, indexing, listings, simple queries, mailing lists, simple validation techniques, default values, lookup values, and custom menu design.

Class # 2 (Intermediate Level) Data Integrity, Subforms, and Posting. Discussion of data integrity as an important consideration in database design and how coded fields can be used to ensure data integrity; use of subforms to display a many-to-one relationship; use of posting as a data entry technique in batch and real-time modes. Students will develop coding schemes for some of the member data fields (including design of "user friendly" techniques for viewing/entering/editing/validating codes); will design a household form which lists all members of that household; will set up simple posting operations for automatically entering data into the member records; and will learn how to automatically calculate a person's age or grade level.

Class # 3 (Advanced Level) The Many-to-Many Relationship. How to develop a many-to-many relationship; use of "concatenated" values (i.e. combining several data elements) as primary keys; other uses of subforms; alternate querying methods; more validating techniques; and

use of "form" tiles and summary tiles. Students will develop a "groups" relation and learn how to track member participation in various groups; how to display group rosters; how to generate a mailing list for a group; how to list a member's participation in multiple groups; and several ways for calculating group membership totals.

Class # 4 (Advanced Level) Financial Tracking and Reporting. Introduction to some basic financial tracking database design concepts; use of summary totals; use of posting for YTD totals; use of flags for identifying records of interest; auto generation of form letters; and more uses of subforms. Students will set up a membership dues relation; design dues statements; learn the differences between the "subtotal," "total for" and "lookup summary" tiles; learn more about the various posting options; learn how to design subforms using the "use from" tile and inert fields; and how to design and automatically print various form letters related to payment of dues.

Class # 5 (Advanced Level) The Scheduling (or Invoicing) Problem. A discussion of the one-to-many-to-one relationship and how to build the scheduling entry/edit form (the same methodology can be applied to building a multi-line invoice entry form). Students will learn how to set up a daily room scheduling sheet for multiple rooms and multiple times; how to post the individual reservations to a separate "reservations" relation; and how to build several different forms for viewing the status of reservations (e.g. by time, by room, by contact person, by date, etc.)

Class # 6 (Advanced Level) Optimization and Other Advanced Database Design Considerations. Use of summary relations to speed up calculations; constants vs. variables in queries; the "rules of optimization"; indexing - the good, the bad, and the ugly; statistics optimization; advanced menu design; "elegant" navigation techniques using sequences; the perils of importing & exporting data. The students will learn how to apply these various advanced concepts to improving the design, functionality

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Tutorial Registration Form

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APPLE III

Apple III Disk Library

by Dave Ottalini

As mentioned in my Trail column this month, we've finally hit the century mark for our Public Domain disks. Actually, considering most (all but one if I remember correctly) of our disks are double sided, we actually hit that mark a long time ago. But who's counting??

Anyhoo, in honor of this milestone in the history of our SIG, you will find FOUR new disks. All are Apple III demo disks from the earliest days to the present. They are Miscellaneous Disks 07 through 10. 3MISC-07 includes a version of the Apple III Demo that was developed for our IIIs in the office. It's self-booting (as are all of them) and is continuous. Early on, I pulled some of the routines from this version of the demo disk for a Basic utility disk (3UTIL-06 I believe).

3MISC-08 has two versions of the original 1981 Apple III demo called "Focus-81." 3MISC-09 is a "Business Applications" demo and 3MISC-10 has a Keyboard Demo.

If you have a color monitor, I think you'll find these demos to be even more interesting. I highly recommend the famed "running horses" demo in color. I've show this during past SIG meetings and if there's enough interest, I'll be happy to do it again.

Looking into our crystal ball for the future, stay tuned for a new AppleWriter tutorial, a "Best of Salerno" disk, Raster Graphics demos and much more.

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COMM-04 WAPABBS.1 (135/136)
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COMM-06 Kermit 3.78 / File Trans (516/820)
COMM-07 Comm-Term / Telecom (808/817)
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CP/M-07 MDM740 (413/414)
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EAMN-06* Death Str / Devil's Tomb (186/187)
EAMN-07* Caves Trsr Isl / Furioso (188/189)
EAMN-08* Magic Kn / Tmb Molinair (190/191)
EAMN-09* Lost Apple / Abduct Qtrs (192/193)
EAMN-10* Trezore / Undrgrnd Cty (194/195)
EAMN-11* Merlin's Cstl / Hogarth (196/197)
EAMN-12* Deathtrap / Black Death (198/199)
EAMN-13* TmpleNgurct / Blk Mntn (200/201)
EAMN-14* Nuclear Nmare / Carroll (202/203)
EAMN-15* Mstr Dngn / Crystal Mntn(204/205)
EAMN-16* Lst Advtr / Manxome Foe (206/207)
EAMN-17* Gauntlet / Caves Langst (208/209)
EAMN-18* Futr Qst / House Secrets (210/211)
EAMN-19* Sewers / Pits Kzorland (212/213)
EAMN-20* Lifequest / Swordquest (215/216)
EAMN-21* Priests Xim / Heroes Cstl (217/218)
EAMN-22* Tmpl Undead / Holy Grail (223/224)
EAMN-23* Mondamen / Orb Polaris (225/226)
EAMN-24* Death's Gate / Orc's Lair (227/228)

EDUCATION
EDUC-01 Edu. 1 / Personal Edu. (76/110)
EDUC-02 Personal Edu. 2 / Edu. 3 (131/139)
EDUC-03 Math/Science / Edu. 4 (1217/140)
EDUC-04 Adv. Math / Vectors (510/513)
EDUC-05 A. Camus Int. / Elem Math (53/105)
EDUC-06 French Voc Tutor/ Vocab (46/123)
EDUC-07 Boot L'Hote / L'Hote Story (48/49)
EDUC-08 Fr. Tic-Tac-Toe / L'Hote Qz (47/50)
EDUC-09 Fr. Poet Tutor / Apolli. Bio (51/52)
EDUC-10 Rafel Boot Disk / Rafel (55/56)
EDUC-11 Span. Tic-Tac-Toe / Rafl Qz (54/57)
EDUC-12 Matute / Lo Fatal (58/59)
EDUC-13 Reading Fun (505)

FORTH
FRTH-01 Assem-Dissem / Scrn Edit. (700/701)
FRTH-02 Go Forth Tutor / Forth 78 (702/703)
FRTH-03 Forth / Floating Point Arith. (704)

GAMES
GAME-01 Games A / B (102/107)
GAME-02 Games C / D (111/128)
GAME-03 Games E / F (162/64)
GAME-04 Keyboard / Paddle Games (72/74)
GAME-05 Pinball / Arcade Games (142/157)
GAME-06 Text Adventr. / Mystry Hse (73/517)
GAME-07 Educational Games G / H (508/509)
GAME-08 Sports / Utilities & Games (143/160)
GAME-09 Adventures / Game Room (811/812)
GAME-10 Haunted House (176 / 810)
GAME-11 Games / Wizard Worker I (122/161)

LOGO
LOGO-01 Logo Tool Kit / Kit Doc (145/146)
LOGO-02 Logo Sample / Dallas Logo (147/158)

MISCELLANEOUS
MISC-01 SS Coin Collecting / Misc (95/115)
MISC-02 Miscellaneous (119/120)
MISC-03 Misc / Recipe Files (125/159)
MISC-04 Glaq & No Name Yet (129/175)
MISC-05 Spec. D'bases / Jim's DB (141/504)
MISC-06 Misc / Applewriter IIe (152/156)
MISC-07 Astronomy Short Programs (506)
MISC-08 Griffith & Weise Astronomy (507)
MISC-09 Aviation - General, Disk 1 (514)
MISC-10 Aviation - Navigation, Disk 2 (515)
MISC-11 Gardner's Assistant (518)
MISC-12 Music / Sights & Sounds (71/126)
MISC-13 Merry Xmas / Hpy Holidays (103/165)
MISC-14 Graphics & Cat / Graphix (108/171)
MISC-15 Print Shop Graphics (172)
MISC-16 Color Graph / Science & Eng. (75/106)
MISC-17 Plots, Charts, Graphs (163/166)
MISC-18 Bus & Math Stat / SS-Gen'l (70/90)
MISC-19 SS Investment / SS Business (91/92)
MISC-20 Business A / B (104/113)
MISC-21 Investments A / B (153/154)
MISC-22 Spreadsheet A / Misc (137/155)
MISC-23** Riley's Pers. Instrumentation (173)

PASCAL
PASC-01 Attach / Bios for Pascal 1.1 (300/301)
PASC-02 Crypto, Grfx / Bios, Printers (302/303)
PASC-03 Read-Write DOS / Printers (304/305)
PASC-04 Cataloger / LISP & Math (306/307)
PASC-05 Holiday Music / IO Filter (308/309)
PASC-06 3D / Startups & Hackers (310/311)
PASC-07 Stocks & Weight / Guerilla (312/313)
PASC-08 Pascal to/from DOS / Misc.(133/314)

PILOT
PILT-01* Pilot Language (167)

UTILITIES
UTIL-01 New Member Disk-Disk 1 of 2 (821)
UTIL-02 New Member Disk-Disk 2 of 2 (822)
UTIL-03 Utilities A / B (100/101)
UTIL-04 Utilities C / D (112/118)
UTIL-05 Utilities E / F (124/132)
UTIL-06 Utilities G / H (138/43)
UTIL-07 Utilities I / J (44/77)
UTIL-08 Mach. Lang. Utils / 1Key DOS (41/42)
UTIL-09 Utils / Beginner's Choice (501/502)
UTIL-10 Diversi Cpy / Diversi DOS (45/130)
UTIL-11 Adds ProDOS / Zap Util (804/806)
UTIL-12 Utilities A / File Cabinet (802/803)
UTIL-13 Imageworks (174/807)
UTIL-14 DOS 3.3 Sys Mstr / Tutr (511/512)
UTIL-15 VisiTrend, VisiPlt / Calclink (93/94)
UTIL-16 AppleSoft Ttr / Pict Pack (109/117)
UTIL-17 AppleWriter Utilities (168)
UTIL-18 AppleSoft Prog / Lve Foll (144/170)
UTIL-19 "Old" New Member's Disk (134)
UTIL-20 Joyreader (819)
UTIL-21 Large Type Joyreader (823)

APPLE IIGS DISKS
THESE ARE ALL 3.5" DISKS

IIGS COMMUNICATIONS
GSCM-01 Freeterm GS (2003)

IIGS DESK ACCESSORIES
GSDA-01 Desk Accessories I (2020)

IIGS FONTS
GSFT-01 Fonts A-1 (2011)
GSFT-02 Fonts A-2 (2012)
GSFT-03 Fonts B-1 (2013)
GSFT-04 Fonts B-2 (2014)
GSFT-05 Fonts C-1 (2015)
GSFT-06 Fonts C-2 (2016)
GSFT-07 Fonts D-1 (2017)
GSFT-08 Fonts E/F-1 (2018)
GSFT-09 Fonts G-1 (2019)
GSFT-10 Fonts H-1 (2020)

IIGS GAMES
GSGM-01 Mean 18 Golf Courses 1 (2007)
GSGM-01 Mean 18 Golf Courses 2 (2018)

IIGS GRAPHICS
GSGX-01 Demo Disk A (2002)
GSGX-02 Slide Show I (2004)
GSGX-03 Slide Show 2 (2016)
GSGX-04 Slide Show 3 (2017)
GSGX-05 Nucleus Graphic Demo (2024)
GSHS-01 HyperStuio 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 Com Stack - Demo Version
GSHS-08 MUG 087 - Demo Version
GSHS-09 USA - Demo Version
GSHS-10 Hs Art 2 - Demo Version

IIGS ICONS
GSIC-01 Icons 1 (2022)
GSIC-02 Icons 2 (2027)

IIGS MISCELLANEOUS
GSMS-01 New Member's Disk (2000)
GSMS-02 Demo Source Code 1 (2005)
GSMS-03 Demo Source Code 2 (2006)
GSMS-04 Odd Bits 1 (2008)
GSMS-05 Odd Bits 2 (2013)

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

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

IIGS SOUNDSIIGS MISC.

GSSN-01 Sounds 1 (2014)
GSSN-02 Sounds 2 - Nostalgia (2015)

IIGS TUTOR TECH

GSTT-01 WAP Stack (2019)

IIGS UTILITIES

GSUT-01 Utilities 1 and Pictures A (2001)
GSUT-02 Jumpstart Program Selector (2021)
GSUT-03 Utilities 2 (2028)
GSUT-04 Utilties 3 (2029)

APPLE ///DISKS

/// 3EZP & AW TEMPLATES

3ZAW-01 Applewks & /// EZP Bus. Tem (1060)

/// 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)

/// GAMES

3GAM-01 Games 01 (1001)
3GAM-02 Games for Kids (1007)
3GAM-03 Cap'n Magneto - Revised 1/89 (1041)

/// GRAPHICS

3GRX-01 Sketchpad & Slideshow (1012)
3GRX-02 Fig Factory Manual (1069)
3GRX-03 Fig Factory - Black & 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 /// (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)

/// GRAPHICS (Cont.)

3GRX-13 Graphics Disk 05 (1079)
3GRX-14 Graphics Disk 06 (1080)
3GRX-15 Calendar by Bloom (1081)
3GRX-16 Typewriter Art 01 (1082)
3GRX-17 Typewriter Art 02 (1083)
3GRX-18 Poster by Bloom (1084)

/// INFORMATION

3INF-01 WAP /// SIG PD Catalog (1000)
3INF-02 New Member Disk (1005)
3INF-03 Best of MAUG (1008)
3INF-04 Best of The Source (1009)
3INF-05 Best of TAU (1010)
3INF-06 Best of ATUNC (1055)
3INF-07 Best of ///'s Company 01 (1015)
3INF-08 Best of ///'s Company 02 (1057)
3INF-09 The Best of Bloom (1035)
3INF-10 Impert's Corner by Bloom (1096)
3INF-11 Phase /// Conference Plus! (1047)
3INF-12 Best of Ottalini 01 (1040)
3INF-13 Best of Ottalini 02 (1058)
3INF-14 Best of Ottalini 03 (1059)
3INF-15 Best of Ottalini 04 (1087)

/// MISCELLANEOUS

3MSC-01 File Cabinet / Sort Directory (1046)
3MSC-02 Contributions 01 (1053)
3MSC-03 Contributions 02 (1061)
3MSC-04 Contributions 03 (1086)
3MSC-05 Le Grayhaven Cookbook Plus! (1097)
3MSC-06 Double Boot - SOS / ProDOS (1099)
3MSC-07 Apple /// Demo Disk #1 (1100)
3MSC-08 Apple /// Demo Disk #2 (1101)
3MSC-09 Apple /// Demo Disk #3 (1102)

/// REPAIRS

3REP-01 A3 Diagnostics 01 (1013)
3REP-02 A3 Diagnostics 02 / Block Edit (1094)
3REP-03 Repairing your A3 (1088)
3REP-04 Brain Surgeon (1089)
3REP-05 Disk Map (1090)
3REP-06 Disk Check & Pro Health (1091)
3REP-07 Vindicator & Catalyst Fixer (1092)
3REP-08 Block Editor & Block Byter (1093)
3REP-09 Jeppson Disassembler (1095)

/// TELECOMMUNICATIONS

3TEL-01 Telecom 01 (1063)
3TEL-02 Telecom 02 / Access /// (1064)
3TEL-03 Telecom 03 (1065)
3TEL-04 Kermit /// (1066)
3TEL-05 XModem /// (1067)
3TEL-06 TerminALL Manual - 7/89 (1032)
3TEL-07 TerminALL Program - 1/89 (1033)

/// UTILITIES

3UTL-01 System Utils & Data Disk (1004)
3UTL-02 Apple II Emulation 01 (1043)
3UTL-03 Apple II Emulation 02 (1044)
3UTL-04 SOS Drivers (1052)
3UTL-05 Basic Boot Disk (1014)
3UTL-06 Basic Utilities 01 (1002)
3UTL-07 Programmers Power Tools (1056)
3UTL-08 Applecon (1016)
3UTL-09 Diskmaker / Appleseeds (1045)
3UTL-10 Basic XT / Basic Utils 02 (1022)
3UTL-11 The Retreiver (1023)
3UTL-12 Power Print /// (1024)
3UTL-13 Disk Window ///+ - 2/89 (1025)
3UTL-14 Source Window Data Window (1026)
3UTL-15 Powercat / Basic XRF (1027)
3UTL-16 Basic Extension (1031)
3UTL-17 Power Keys DM+ (1034)
3UTL-18 Ram+3 / Two-n-Fro /// 128K (1036)
3UTL-19 Basic GTO (1051)
3UTL-20 CustomFont Manual (1037)
3UTL-21 CustomFont (1038)
3UTL-22 Fonts 01 (1039)
3UTL-23 D3 Backup by Bloom (1011)
3UTL-24 Gucspar by Bloom (1042)
3UTL-25 ASCIDIF by Bloom - 4/88 (1028)
3UTL-26 MLM Manual by Bloom (1068)
3UTL-27 MLM Utilities by Bloom 01 (1048)
3UTL-28 MLM Utilities by Bloom 02 (1049)
3UTL-29 MLM Utilities by Bloom 03 (1050)
3UTL-30 AppleWriter to 3 EZP by Bloom (1085)
3UTL-31 Pascal Menu Maker (1054)

/// WORD PROCESSING

3WDP-01 AppleWriter (1006)
3WDP-02 Footnote /// (1003)
3WDP-03 Ink Well Manual (1029)
3WDP-04 Ink Well Program (1030)

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Bethesda, MD 20814

PRICES:
ALL 5.25" DISKS $2.00 EA.
1-4 3.5" DISKS $4.00 EA.
5 OR MORE 3.5" DISKS $3.50 EA.
COMPLETE SERIES 3.5" DISKS $3.00 EA.
POSTAGE: $1.00 / DISK (MAX. $5.00)
NON MEMBERS ADD $3.00 PER DISK (Or join WAP!!)

**Please note that all 5.25" disks are double sided unless the disk number is followed by **.
*Disk numbers followed by * require disk #EAMN-03 to start game.

DISKETERIA ORDER FORM

NAME _____

ADDRESS _____

CITY, STATE, ZIP _____

DAY PHONE _____ EVE PHONE _____

INDICATE DISK NUMBERS

_____ _____ _____
_____ _____ _____
_____ _____ _____
_____ _____ _____
_____ _____ _____
_____ _____ _____
_____ _____ _____

_____ DISKS @ $4.00 = _____
_____ DISKS @ 3.50 = _____
_____ DISKS @ $3.00 = _____
_____ DISKS @ $2.00 = _____
POSTAGE _____
TOTAL = _____

Macintosh Disks

Anti-Virus Utilities
- ___ 3 disk set
- ___ 1.01D - AV 1
- ___ 1.02B - AV 2
- ___ 1.03B - AV 3

Desk Accessories
- ___ 10 disk set; $30
- ___ 2.01B - DAs 1
- ___ 2.02B - DAs 2
- ___ 2.03B - DAs 3
- ___ 2.04B - DAs 4
- ___ 2.05B - DAs 5
- ___ 2.06B - DAs 6
- ___ 2.07B - DAs 7
- ___ 2.08B - DAs 8
- ___ 2.09B - DAs 9
- ___ 2.10B - DAs 10

FKeys (Function Keys)
- ___ 2 disk set
- ___ 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
- ___ 5 disk set; $15
- ___ 6.01 - LW 1
- ___ 6.02 - LW 2
- ___ 6.03 - LW 3
- ___ 6.04 - LW 4
- ___ 6.05 - LW 5

INITs & cdevs
- ___ 5 disk set; $15
- ___ 9.01 - I/C 1
- ___ 9.02 - I/C 2
- ___ 9.03 - I/C 3
- ___ 9.04 - I/C 4
- ___ 9.05 - I/C 5

Miscellaneous
- ___ 2 disk set
- ___ 10.01 - M 1
- ___ 10.02 - M 2

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
- ___ 13.01 - T 1
- ___ 13.02 - T 2
- ___ 13.03 - T 3
- ___ 13.04 - T 4
- ___ 13.05 - T 5
- ___ 13.06 - T 6
- ___ 13.07 - T 7
- ___ 13.08 - T 8
- ___ 13.09 - T 9

Programmer/Hacker
- ___ 20 disk set; $60
- ___ 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

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 Utils
- ___ 8 disk set; $24
- ___ 16.01B - SU 1
- ___ 16.02B - SU 2
- ___ 16.03B - SU 3
- ___ 16.04B - SU 4
- ___ 16.05B - SU 5
- ___ 16.06B - SU 6
- ___ 16.07B - SU 7
- ___ 16.08B - SU 8

Word Processing Utils
- ___ 3 disk set
- ___ 17.01 - WP 1
- ___ 17.02 - WP 2
- ___ 17.03 - 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

HyperCard StackWare
- ___ 34 disk set; $102
- ___ 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

Mac II Series
- ___ 11 disk set; $33
- ___ 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 A- M II 8
- ___ 20.09 A- M II 9
- ___ 20.10 A- M II 10
- ___ 20.11 A- M II 11

HyperCard Externals
- ___ 5 disk set; $15
- ___ 21.01 - HE 1
- ___ 21.02 - HE 2
- ___ 21.03 - HE 3
- ___ 21.04 - HE 4
- ___ 21.05 - HE 5

System Software 6.0.3
- ___ 4 disk set; $12
- ___ SS.ST
- ___ SS.PT
- ___ SS.U1
- ___ SS.U2

System Software 6.0.5
- ___ 5 disk set; $15
- ___ SS.ST.5
- ___ SS.PT.5
- ___ SS.U1.5
- ___ SS.U2.5
- ___ SS.NI.5

HyperCard Update 1.2.5
- ___ HC & Stacks - HC.01
- ___ HC Help - HC.02
- ___ HC Ideas - HC.03

Serially Numbered
- ___ Disk 28.1 •
- ___ Disk 29 •
- ___ Disk 30 •
- ___ Disk 31.1 •
- ___ Disk 32 •
- ___ Disk 35 •
- ___ Disk 41 •
- ___ Disk 45 •
- ___ Disk 46 •
- ___ Disk 54 •
- ___ Disk 55 •
- ___ Disk 56 •
- ___ Disk 74 •
- ___ Disk 75 •
- ___ Disk 76 •
- ___ Disk 77 •
- ___ Disk 78 •
- ___ Disk 79 •
- ___ Disk 80 •
- ___ Disk 84 •
- ___ Disk 85 •
- ___ Disk 89 •
- ___ Disk 91 •
- ___ Disk 92 •
- ___ Disk 95 •
- ___ Disk 96 •
- ___ Disk 104 •
- ___ Disk 105 •
- ___ Disk 106 •
- ___ Disk 108 •
- ___ Disk 123 •
- ___ Disk 134 •
- ___ Disk 143 •
- ___ Disk 147
- ___ Disk 150 •
- ___ Disk 151 •
- ___ Disk 153

HyperCard Upgrade requires HyperCard proof of purchase; any of original disk, first page of manual, receipt or previous HyperCard Upgrade disk.
Disks marked with a bullet are in 400K single side disk format; all others are 800K double side disk format..

Mail this form with your check to:
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Are you a member of Washington Apple Pi, Ltd? Yes/No ___. If Yes, Member Number _____.
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Number of Disks		Member Price each	Extended
	Singles		
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___	**5 or more** ❷	**$ 3.50 =**	_____
___	**Sets (marked above)**	**$ (above)**	_____
	+ Postage - $ 1.00 /disk, max $ 5.00		_____
___	**Disk Catalogs**	**$ 3.00 =**	_____
	+ Postage ❷ $ 1.50 ea.		_____
	TOTAL AMOUNT		_____

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Information about disk libraries		
Meandering editorials		
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Other		

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About right

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Please answer a few questions for us regarding your computer use. Circle the computers/ equipment you use on a regular basis.

Apple II	LISA
Apple II +	Mac II
Apple II e	Mac IIx
Apple II c	Mac II cx
Apple II gs	Mac IIc+
Apple Other _____	Mac IIci
Laser 128	Mac II other
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

WAP has many Special Interest Groups and Activities. Please check boxes of those areas which interest you. You will be contacted by the appropriate group.

	Join Group	Volunteer
Appleworks SIG		
Apple II GS SIG		
Apple III SIG		
AV SIG (Arts & Video)		
CP/M SIG		
Disabled SIG		
Disk Library		
Desktop Publishing SIG		
EDSIG (Education)		
Excel SIG		
Federal SIG		
Game SIG		
HOTLINE		
HyperCard SIG		
Law SIG		
Mac Programmers SIG		
Music SIG		
NeXT SIG		
PIG (Pascal Programming)		
PI-SIG (Program Interface)		
Stock SIG		
Telecommunications SIG		
WAP Journal Editorial Board		
Works SIG		

Enclose check or money order payable to Washington Apple Pi, Ltd.

Basic membership - One Year	$39
Two years	$67
Three years	$92
Student rate * (for one year)	$32
For other options please add correct amounts	
(1) WAP bulletin Board system (TCS)	$ 6
(2) First class mail (U.S.)	$17
(3) Airmail to Canada, Mexico, West Indies or Central America	$20
(4) Airmail to Europe & South America	$38
(5) Airmail to Asia & elsewhere	$48
(6) Surface to Europe, Asia & elsewhere	$18
Total enclosed	$____

*Students please enclose photo-copy of current Student ID

Indicate desired New Member Kit (1 only)

Apple II
Apple IIGS
Apple III
Mac 400k
Mac 800k

Applicant signature and date:

Please circle Yes or No for the two items listed below.

My name, address and phone number may be published in the membership directory. Yes No

Please leave my name on the Pi mailing list. (The list never leaves the office and all mailings are supervised by the Pi staff). Yes No

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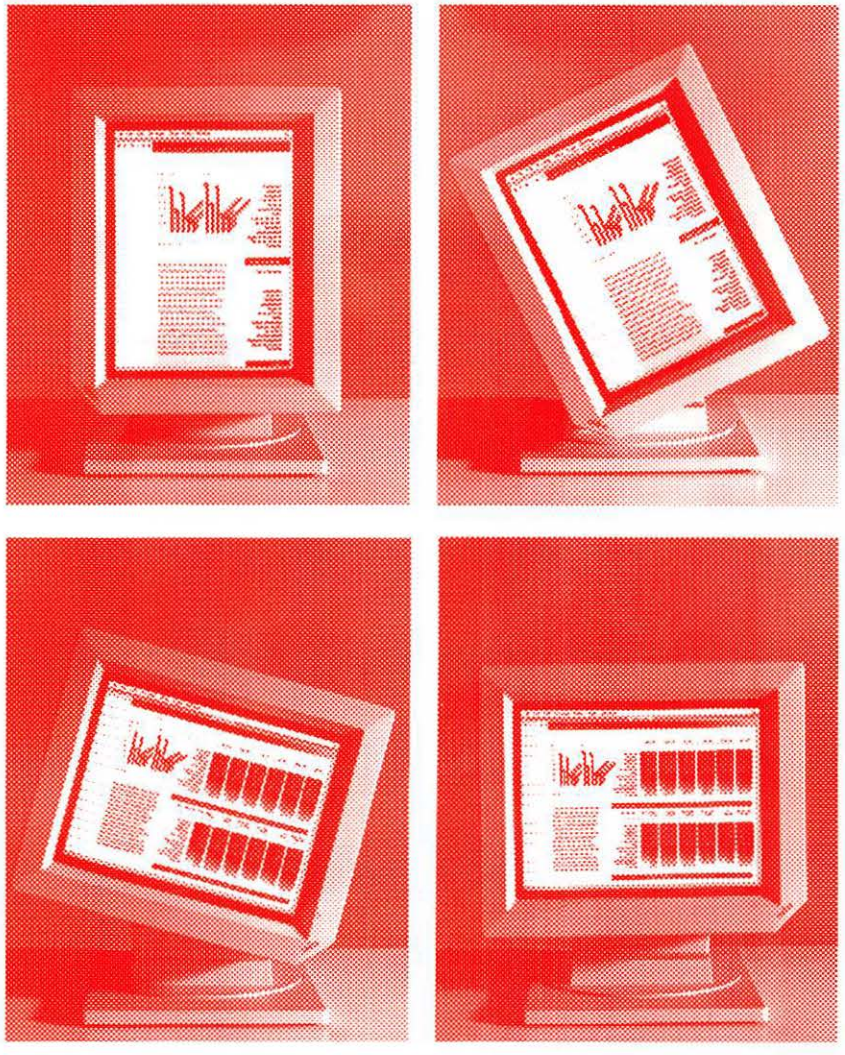

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